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The Relationship Between Knowledge And Iron Intake With Anemia Disease In Female Student Majoring In Nutrition At Universitas Muhammadiyah Bima

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ABSTRACT

Anemia is a medical condition characterized by a low number of red blood cells or hemoglobin levels in the body. The purpose of this study was to determine the knowledge of Nutrition study program students at Muhammadiyah Bima University about the importance of iron intake with the incidence of anemia. The type of research used was observational analytic with cross sectional research design to determine the relationship between knowledge and anemia. Of the total 72 female students of the nutrition study program, 33 of them were selected as samples in this study. This study showed a significant relationship (p=0.007) between knowledge and awareness attitude about the importance of iron intake with anemia disease in female students of the Nutrition study program at Muhammadiyah Bima University. It is important to increase the knowledge and awareness of female students about iron intake in preventing anemia. This can be done through education about the impact and how to prevent anemia. In addition, there needs to be a role of the campus such as seminars or public lectures on healthy diets rich in iron for female students, as well as facilitating access to information sources and foods rich in iron such as brochures about anemia. Thus, it is expected to reduce the risk of anemia and improve the health of female students of the Nutrition study program at Muhammadiyah Bima University.

Keywords:

Anemia; Intake; Iron ; Knowledge

INTRODUCTION

Adolescence is a period of self-discovery and rapid growth that requires increased nutritional needs. Iron is one of the nutrients needed by all body cells for the formation of red blood cells. Women also experience menstruation every month which automatically secretes a lot of blood so that their iron needs are higher than men. Lack of iron intake is often associated with anemia, lack of blood or anemia is a health problem that occurs when the blood does not have enough healthy red blood cells. It can be caused by many different things and the cure depends on the cause. It is still an unresolved condition in Indonesia and even globally affecting two billion people around the world.

The emergence of public health problems that still occur in adolescents is anemia, this anemia problem not only occurs in developing countries but also in developed countries. Anemia can have a risk of occurring in all age groups, and groups that are often at high risk of suffering from anemia are school-age children, women of childbearing age (WUS), adolescents and pregnant women. The normal hemoglobin level in adolescent girls is 12 mg/dl (Ministry of Health, 2020). Iron nutritional anemia (AGB) is the most common case of anemia in adolescents. According to the World Health Organization (WHO), the prevalence of anemia in adolescent girls is still high with global prevalence rates ranging from 50-80%. It is estimated that there are about 1.32 billion individuals suffering from anemia worldwide, which is equivalent to about 25% of the global human population. The highest incidence rate occurs in the African continent reaching 44.4%, followed by the Asian continent with a

range of 25-33.0% and the lowest recorded in the North American continent, around 7.6% Israwati Waelan & Devi Savitri Effendy, (2020)

Adolescent girls (aged 10-19 years) are a vulnerable group to anemia, they are often considered as the future generation of the nation who will play a role in determining the direction of the next generation.

Several factors contribute to the high prevalence of anemia in adolescents including low intake of iron and other nutrients such as vitamin A, vitamin C, folate, riboflavin, and B12. In addition, errors in iron consumption patterns, such as taking iron together with other substances that can interfere with absorption, also contribute to this problem. Julaecha, (2020).

Heme iron stored in animal foods can be easily absorbed twice as much as nonheme iron. Iron in the diet comes in the form of heme iron (in the hemoglobin and myoglobin of animal foods) and nonheme iron (in plant foods). Good sources of nonheme iron include legumes. Therefore, this study aims to examine the relationship between iron consumption and the incidence of anemia in adolescent girls at the Nutrition Study Program of Muhammadiyah Bima University.

Anemia can be classified into three parts, namely, mild anemia can occur if the hemoglobin level in the blood is around 9-10%, moderate anemia occurs if the hemoglobin level in the blood is around 7-8%, and severe anemia occurs if the hemoglobin level in the blood is <7%.

Based on data from the World Health Organization (WHO) more than 30% of the world's population is anemic. The percentage in developed countries is 4.3-20% and in developing countries 30-48% with iron nutritional anemia. Globally, 43% of children, 38% of pregnant women, 29% of non-pregnant women and 29% of all women of childbearing age are diagnosed with anemia. According to the 2018 Riskesdas results, almost half of Indonesia's population, or about 48.9%, suffers from anemia. The rate of anemia is particularly high among the 15-24 years and 25-34 years age groups. This incidence is influenced by poor iron consumption patterns. Nutritional anemia is a health condition caused by iron deficiency in the body. It occurs when the body does not have enough iron needed to produce sufficient hemoglobin. Hemoglobin is a protein found in red blood cells that transports oxygen from the lungs to the rest of the body. Nutritional anemia can affect all age ranges, but is more common in adolescent girls.

METHOD

In accordance with the title of this journal, the subjects studied were students of the nutrition study program at Muhammadiyah Bima University. The type of research we used was observational analytic with cross sectional research design to determine the relationship between knowledge and anemia. This study aims to determine the knowledge of female students about the importance of iron intake with the incidence of anemia. This research is located at the University of Muhammadiyah Bima, especially in the Nutrition study program class. On Tuesday, November 22, 2022 this research was conducted.

All 72 female students of the Nutrition study program became the population in this study. The sample technique used was simple random sampling. A total of 30 female students were sampled and the measuring instrument to obtain the data used was a questionnaire that was directly given to female students or young women, this questionnaire was about self-identity and questions and statements in writing related to anemia and iron intake. Calculation of univariate and bivariate analysis tables using excel applications and the help of the SPSS version 2022 application with the chi square test.

RESULTS AND DISCUSSION

Based on the results of the research that has been done, it is known that the most age of female students who are respondents is 18 years as many as 16 people, 17 years as many as 6 people, 19 years as many as 4 people, 20 years as many as 2 people, 22 years and 25 years as many as 1 female student.

Univariate Analysis Results

Univariate analysis is a data analysis technique for one variable independently, each variable is analyzed without being associated with other variables.Susanti et al., n.d.(2023)

Table 1. Univariate Analysis

Iron consumption knowledge	**n**	**%**
High	16	53.3
Medium	14	46.7
Low	0	0.0
Total	**30**	**100**
Iron Consumption Awareness Attitudes and Anemia Concerns		
High	20	66.7
Medium	10	33.3
Low	0	0.0

Total	**30**	**100**

Source: Primary Data, 2022

Bivariate Analysis Results

Bivariate analysis is a process used to explore how independent variables and dependent variables interact with each other. The aim is to determine if there is a significant relationship between the two variables, often using the chi-square test. Asnel et al., n.d.(2020)

Table 2. Bivariate Analysis

Variabel	n	%	Total		p
			n	%	
Iron consumption knowledge					
High	16	53.3			
Medium	14	46.7	30	100	
Low	0	0.0			
Iron Consumption Awareness Attitudes and Anemia Concerns					0.007
High	20	66.7			
Medium	10	33.3	30	100	
Low	0	0.0			

Source: Primary Data, 2022

Blood loss or anemia is a health problem where the blood in the body does not have enough healthy red blood cells. It can be caused by many different things and the cure depends on the cause. It is still unresolved in Indonesian society and even globally affects two billion people around the world and anemia is often associated with a lack of iron intake.

In table 1 univariate analysis above shows that female students who are respondents have high knowledge about iron as many as 16 people or around 53.3%, this illustrates that more female students of nutrition study programs have high knowledge compared to moderate knowledge, therefore they must meet their iron needs to maximize body work and respondents who have a high awareness attitude about iron consumption and concerns about anemia as many as 20 female students or around 66.7%, which means that they are also aware and worried if their bodies lack iron intake which will result in anemia.

Based on table 2 of the bivariate analysis above, it shows that there is a relationship or correlation between knowledge of iron consumption with an attitude of awareness of iron consumption and concerns about anemia, which is marked by a p value <0.007, meaning that the higher a person's knowledge about the importance of iron content, the higher his awareness attitude in consuming iron because it can prevent anemia. If the p value is> 0.05 then there is no relationship between the variables and if the p value is <0.05 then there is a relationship between the variables.

Previous research results such as Astrika Yunita et al., (2020) suggest that there is a relationship between knowledge of iron consumption and the incidence of anemia, respondents who have low knowledge of iron consumption have a greater risk of anemia 13.5 times. In addition, the level of knowledge also affects the incidence of anemia in adolescent girls. In addition to knowledge factors, the incidence of anemia can also be influenced by the age of adolescent girls who are in a period of growth and development.

According to research by Yusmaharani et al., (2023), the results of a single analysis showed that most respondents had good knowledge about anemia, as many as 40 people (61.5%), and the majority of adolescent girls consumed foods rich in iron, as many as 49 people (75.4%). The results of multiple analysis using the chi-square test showed a P value = 0.01 <0.05, indicating a relationship between knowledge about anemia and the type of food consumed by adolescent girls.

According to research by Kusnadi, (2021), these results indicate a correlation between the level of knowledge and the incidence of anemia in adolescent girls. Adolescent girls who have good knowledge tend to be more vigilant in preventing anemia than those with inadequate knowledge. According to Permanasari et al., (2020)The study results show that the average age of adolescent girls at SMAN 05 Pekanbaru is 16 years, with an average hemoglobin level of 13.8g/dl. A correlation was found between the knowledge of adolescent girls (p = 0.041, p<0.05) and their hemoglobin levels.

CONCLUSION

Students of the University of Muhammadiyah Bima Nutrition study program using quantitative research static procedures can be obtained conclusions that there is a significant relationship between the relationship between knowledge and iron intake with anemia in students of the Nutrition study program of Muhammadiyah Bima University. The population in this study were all students of the Nutrition study program, namely classes A and B of Muhammadiyah Bima University, and the sample was only class B students.

Iron deficiency anemia (ADB) is a hematological disease that is often found in children, infants and women of reproductive age. ADB has an impact on children and can result in decreased cognitive function, behavioral changes and impaired growth and development in children, infants and women of reproductive age. The most common effects of ADB in children are due to malnutrition and infection. Because of the impact of Iron Deficiency Anemia, it needs immediate attention and treatment. ADB can be detected early by screening hematology (Ht, Hb, Erythrocyte index, Reticulocytes, Reticulocytes-Hemoglobin, and Erythrocyte Distribution) and chemistry (serum ferritin, Total Iron Binding Capacity, Transferrin Saturation, Zinc Protoporphyrin and soluble Transferrin receptor).

The incidence of anemia is caused by lack of iron intake, menstruation in women, socioeconomics and knowledge. As for how to prevent anemia during menstruation, it can be done by taking Fe tablets, ensuring adequate and regular food consumption, consumption of substances rich in iron and vitamin C, periodic consumption of deworming drugs, food fortification, provision of additional food, and providing health education on nutritional needs and supplements to parents are some strategies to prevent anemia in adolescent girls.

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