

# The Effect of Eat, Rest and Exercise Habits on Anemia in Adolescents

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## ABSTRACT

Effect of eating habits, rest and exercise on anemia in adolescents. Anemia is the most common nutritional problem, both in developed and developing countries, and in people with low and high socioeconomic status. Anemia can occur in anyone and in any age group. The purpose of this study was to determine the relationship between the eating habits of adolescent girls and the incidence of anemia in female high school students in Medan. This study aims to determine the relationship between female adolescent rest habits and the incidence of anemia in female high school students in Medan. The purpose of this study was to determine the relationship between female adolescent exercise habits and the incidence of anemia in female high school students in Medan. The study was conducted for two months starting from March to April 2019. From the multivariate analysis of modeling the incidence of anemia, there are three variables that have a significant relationship with the incidence of anemia, namely attitudes, eating habits and menstrual patterns.

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## 1. Introduction

Adolescence is a period of growth of children towards the process of adult human maturity. In this period, physical, biological, and psychological changes are very unique and sustainable. Physical changes that occur will affect their health and nutritional status. Imbalances between nutrient intake and their needs will cause nutritional problems, both over nutrition and under nutrition (Briawan, 2014).

Anemia is the most common nutritional problem, both in developed and developing countries, and in people with low and high socioeconomic status. Anemia can occur in anyone and in any age group. The group of adolescents aged 10-19 years who suffer from anemia as much as 20-30% experience a decrease in physical ability (productivity) and academic ability (Briawan, 2014).

Adolescent girls are one of the groups that are prone to anemia. Therefore, the target of the nutritional anemia prevention program has been developed, namely reaching junior high school, high school, and equivalent girls as well as women outside school as a strategic effort in an effort to break the cycle of nutritional problems. , the prevalence of anemia among adolescent girls is still in the high category. Data from the Ministry of Health in 2005 showed that there were 26.50% of anemia sufferers in adolescent girls and 26.9% of women of childbearing age (WUS). This indicates that anemia is still a health problem in Indonesia (Tim Poltekkes, 2010 in Dian.W, 2011).

Adolescent girls have a ten times greater risk of suffering from anemia compared to young men. This is because young women experience menstruation every month and are in a period of growth so they need more iron intake. In addition, an imbalance in nutrient intake is also a cause of anemia in adolescents. Adolescent girls are usually very concerned about body shape, so many limit food consumption and many dietary restrictions (National Anemia Action Council, 2011).

## 2. Literature Review

### 2.1 Teenager

Adolescence or "adolescence" (English), comes from the Latin "adolescere" which means to grow towards maturity. Maturity in question is not only physical maturity, but also social and psychological maturity. According to WHO, the age limit for adolescents is 12 to 24 years. According to the Indonesian Ministry of Health is 10 years to 19 years (Widyastuti, Rahmawati&Purnamaningrum, 2009).

### 2.2 Anemia

Anemia is a condition where the level of hemoglobin (Hb) in the blood is lower than the normal value for the group concerned. Anemia occurs because the blood cannot carry acid, as it should. The inability of the blood to carry this acid is caused by reduced red blood cells or a reduced amount of hemoglobin in these cells. Normal blood contains 40-45% red blood cells and 55-60%. Usually, there are 12.5 to 14 grams in 100 cc of blood. The normal red blood cell count is 4.5 to 5.5 million in one cubic mm. In women this figure fell by 10%. (Prasetyono, 2013).

### 2.3 Dietary habit

Diet is the way a person or group of people utilize the available food as a reaction to the economic and socio-cultural pressures they experience.

Diet has something to do with eating habits (Almatsier, 2013). Food is a source of energy for the body so that all organs of the body can function optimally. A healthy diet can make our bodies healthy, on the contrary, with an unhealthy diet, our bodies will be vulnerable to various diseases. Healthy eating patterns include; the amount of food we consume, the type of food, the meal schedule (Badriah, 2010).

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Based on research conducted by Chatarina. U.W, that the diet of adolescent girls can affect anemia nutrition. Modern patterns and lifestyles make teenagers tend to prefer eating outside the home with their groups. Teenage girls often practice dieting in a way that is not right, such as doing taboos, limiting or reducing the frequency of eating to prevent obesity. In general, teenagers have bad eating habits. Some teenagers, especially young women, often consume food in unbalanced amounts compared to their needs for fear of being overweight. Teenagers eat habits on average no more than three times a day and are called eating not only in the context of consuming staple foods but snacks are also categorized as eating (Suhardjo, 1989).

## 2.4 Habit

Eating habits are the way a person chooses and eats them as a reaction to psychological, physiological, cultural and social influences (Harper et al, 1986).

Meanwhile, Suhardjo (1989) added that eating habits are behaviors related to a person's eating, food patterns eaten, taboos, distribution of food in the family, preferences for food and how to choose food. Harper et al (1986) stated that in relation to food that is usually considered appropriate to eat, there are many patterns of taboos, superstitions and prohibitions in various cultures and different regions.

Snacks account for nearly 40% of the calories in a teenager's diet. Although snack foods on their own are not bad, traditional snacks such as potato chips, cakes and soft drinks are low in nutrients. Ice cream, shakes, hamburgers, and pizza provide important nutrients, but are also high in fat, sodium, and calories. Adolescents rely heavily on "fast food" restaurants, which have limited menus and often emphasize foods that are high in calories, fat and sodium (Mary Courtney Moore, 1997).

## 2.5 Exercise

Exercise can determine the level of health, exercise is one of the characteristics in terms of a healthy lifestyle. People who like to exercise will have a better immune system, so they are less likely to get sick. Because sports activities can improve blood flow to the brain, with regular exercise metabolism and regeneration of body cells will be faster. A youthful face and slim body due to diligent exercise so that self-confidence will increase (Ahira, A, 2009).

## 2.6 Rest

Rest is a state of inactivity either in body or mind. Rest not only reduces muscle activity, but also relieves mental tension, and calms the spirit. Rest can be fulfilled in various ways, for example: listening to the radio, watching television, watching a competition, reading a book, sleep is a period of time during which the activity and body and mind sink into a very peaceful state, and then wake up refreshed and strong again to carry on with the task. - routine tasks of life. (Irianto, K, 2004).

## 3. Research Methods

### 3.1 Research design

The type of research used is observational research. The research method used is a survey with a cross-sectional design in which the variables studied are measured at the same time (SastroAsmoro, 1995).

### 3.2 Research Location and Time

The research will be conducted at SMA Negeri 11, Jalan Pertiwi no. 93 Medan. The research was conducted for two months starting from March to April 2019

### 3.3 Population and sample

The population in this study were all female students from ten classes as many as 200 students of SMA Negeri 11 in Medan. The sample is part of the population to be studied or part of the number that represents the characteristics of a population to be studied (Hidayat, 2007).

The sampling technique in this study was total sampling, namely the entire population was used as a sample, namely 200 high school students in grade 1.

### 3.4 Data Analysis

After processing the data, the next step is to analyze the data using a statistical analysis tool application. The analysis carried out in this study was divided into 3 analyzes, namely univariate, bivariate and multivariate analysis.

#### a. Univariate Analysis

Univariate analysis was conducted to determine the descriptive analysis of the variables studied. After the frequency distribution of the questions is known, the quality of the data and the characteristics of the data collected will be known. The results of this analysis are used in tabular form.

#### b. Bivariate Analysis

Bivariate analysis was conducted to determine the relationship between diet, rest, exercise, knowledge, attitudes, family income, menstruation and parental education with the incidence of anemia in adolescent girls and to determine the strength of the relationship of each covariate. The statistical test carried out is Chi-Square with the help of software, statistical programs.

#### c. Multivariate Analysis

Multivariate analysis was conducted to determine whether the independent variable is related to the dependent variable and is also influenced by other variables (Hastono, 2001). The analysis used was multiple logistic regression analysis with the risk factor model. The purpose of the analysis with the risk factor model was to estimate validly the relationship of one independent variable (eating habits, resting habits, exercise habits, knowledge of young women about anemia, attitudes of young women about anemia, family income, menstrual pattern, parental education, disease) and the dependent variable (the incidence of anemia in adolescent girls) by controlling for covariates. In addition, it will look at the factors that are interactions with covariate variables for the incidence of anemia in adolescent girls.

## 4. Discussion

There were 47 respondents (23.5%) and 153 (76.5%) who were not anemic from a total of 200 respondents. This shows that there are still many young women who are anemic. According to the poltekkes team, young women are one of the

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After bivariate analysis, there was a significant relationship between eating habits and the incidence of anemia in adolescent girls. P Value < 0.05, with an OR value of 2.738, meaning that the frequency of eating habits of adolescent girls < 3 times had a 2.7 times chance of experiencing anemia compared to the frequency of eating habits. young women 3 times. Where the proportion of adolescent girls who experience anemia with eating habits < 3 times is 32.3% compared to eating frequency 3 times by 14.9% having anemia.

#### 4.1 Relationship between exercise habits and the incidence of anemia in adolescent girls

After bivariate analysis, there was no significant relationship between exercise habits and the incidence of anemia in adolescent girls. P Value < 0.110, with an OR value of 0.488, meaning that female adolescents who did exercise habits had 0.4 times the chance to experience anemia compared to female adolescents who did not. exercise habits. Where the proportion of adolescent girls who do not exercise habits experience anemia by 15.3% and female adolescents who do exercise habits by 27.0% experience anemia.

#### 4.2 Relationship between rest and the incidence of anemia in adolescent girls

After bivariate analysis, there was a significant relationship between resting habits and the incidence of anemia in adolescent girls. P Value < 0.000, with an OR value of 3.593, meaning that female adolescents who lack rest had 3.5 times the chance to experience anemia compared to girls who had enough rest. Where the proportion of adolescent girls who do not lack rest experience anemia by 36.6% and girls who do enough rest by 13.5% experience anemia.

## 5. Conclusion

From the results of the research and discussion above, several conclusions can be drawn:

- Distribution of anemia incidence in SMA Negeri 11 Medan from 200 young girls who are not anemic as many as 153 (76.5%), while those suffering from anemia are 47 (23.5%).
- From the multivariate analysis of modeling the incidence of anemia, there are three variables that have a significant relationship with the incidence of anemia, namely attitudes, eating habits and menstrual patterns.
- The most dominant variable / the biggest influence on the incidence of anemia, seen from the largest OR value is the attitude variable (P = 0.000). So that the attitude of young women has a chance of 10.931 times experiencing anemia, after being controlled by the variables of eating habits and menstrual patterns.

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