

The Effect of Family Knowledge, Attitude and Income on Anemia in Adolescents

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ABSTRACT

Effect of knowledge, attitudes and family income on anemia in adolescents. One of the factors that influence the incidence of anemia as shown by Dreyfuss et al. (2000), is vitamin A deficiency. Another factor, namely lack of energy and protein consumption can also reduce hemoglobin levels in the blood (Berger et al., 1997). **Research Objectives:** To determine the relationship between knowledge of adolescent girls and the incidence of anemia in female high school students in Medan. This study aims to determine the relationship between the attitudes of young women to the incidence of anemia in high school students in Medan. The purpose of this study was to determine the relationship between family income of adolescent girls and the incidence of anemia in female high school students in Medan. The study was conducted for two months starting from March to January 2020. The most dominant variable/the biggest influence on the incidence of anemia, seen from the largest OR value, was 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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1. Introduction

One of the factors that influence the incidence of anemia as shown by Dreyfuss et al. (2000), is vitamin A deficiency. Another factor, namely lack of energy and protein consumption can also reduce hemoglobin levels in the blood (Berger et al., 1997). In addition, the results of research on women aged 15-49 years in Bangladesh showed that the availability of iron in the body, height, and consumption of iron tablets had a significant effect on hemoglobin levels (Bhargava et al., 2001). Research conducted by Antelman et al. (2000) in Tanzania showed that there is a significant relationship between body mass index (BMI), vegetable consumption and serum retinol levels with anemia in women of childbearing age.

Khumaidi (1989) suggests that the factors behind the high prevalence of anemia in developing countries are low socioeconomic conditions which include parents' education and low family income. Parental education determines household economic conditions which ultimately affect family consumption (Sariningrum, 1990). Income is one of the factors that determine the quality and quantity of food (Berg, 1986).

Low family income is related to the level of iron consumption that comes from meat, fish, and poultry as well as foods from other animal sources (Bhargava et al., 2001). While one's knowledge will affect attitudes and behavior in food selection and will subsequently affect the nutritional state of the individual concerned, including anemia status (Saraswati, 1997).

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2. Literature Review

Adolescence is a transitional period between childhood and adulthood, which is between the ages of 12 and 21 years. This age range of adolescents can be divided into two parts, namely 12 years to 17 years is early adolescence and 17 years to 21 years is late adolescence. Under current law in the United States, individuals are considered adults when they reach 18 years of age, and not 21 years as previously stated. At this age, most children are in secondary school (Hurlock, 1991 in Ali. M &Asrori.M, 205).

According to Gunarsa and Gunarsa (1991), foreign terms that are often used to denote adolescence include:

- a. Puberty (English) comes from the Latin term puberty which means maleness, maturity based on male characteristics and signs. Pubescence from the word pubis (pubic hair) which means hair (hair) in the pubic area (genital) then pubescence means changes that are accompanied by the growth of hair in the pubic area.

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b. Adolescentia comes from the Latin term *adolescencia* which means youth that occurs between 17-30 years which is a period of transition or transition from childhood to adulthood marked by changes in physical, psychological and psychosocial aspects. The process of adolescent psychological development begins between 12-22 years.

Anemia can be divided into several groups, based on the factors that cause the reduction of red blood cells in the body. First, reproductive anemia is anemia caused by blood deficiency of vitamin B12, iron, and nutrition. Lack of these substances results in the formation of imperfect red blood cells by the bone marrow. Second, hemolytic anemia, which is anemia that occurs when red blood cells perish too early. Third, secondary anemia is anemia caused by the loss of red blood cells from the body due to bleeding. Fourth, aplastic anemia, which is anemia caused by bone marrow damage (Prasetyo, 2013).

The most common anemia is anemia caused by a lack of iron intake. In addition to iron deficiency, anemia also occurs due to deficiency of vitamin A, vitamin C, folic acid, vitamin B12 or due to nutritional deficiencies in general (Most, 2004 in Briawan, 2014). A multi-country study by Beaton and McCabe (INACG, 2001) shows that the estimated proportion of anemia caused by iron deficiency ranges from 21-85%. However, it is generally assumed that 50% of anemia is caused by iron deficiency.

2.1 Knowledge of Adolescent Girls

According to Notoatmodjo (2003) in Nursari (2010), knowledge or cognitive is a very important domain for the formation of one's actions (overt behavior), one of the actions formed is action in terms of choosing daily food.

This is in accordance with Nursari (2010) who said that a person's level of nutritional knowledge will affect the nutritional state of the individual concerned.

Measurement of knowledge can be done by interview or questionnaire that asks about the content of the material to be measured from the respondent. The depth of knowledge to be measured can be adjusted to the levels mentioned above (Sumaryati, 2003).

Knowledge is an impression in the human mind as a result of the use of the five senses. Engle et al. (1994) defines knowledge as information stored in the form of memory which is the main determinant of consumer behavior. Knowledge is obtained through formal education, non-formal, mass media and other people.

According to the results of a study by SA Nugraheni (2002), that young women who have knowledge about the understanding, signs, symptoms, causes, consequences and efforts to prevent anemia are still lacking, namely 84% in Kendal and 81% in Boja. (Edwi, S 1997) also said that the level of knowledge of young women about anemia is still low.

2.2 Attitudes of Young Women

Attitude is the subject's tendency to accept or reject an object that is valuable (good) or worthless (not good) (Madrie, 1981). According to Pranadji (1988) a person's attitude can be known from the behavioral tendencies that lead to a behavior

certain object. So the attitude is not yet a change, but it can be seen from the attitude that his actions can be predicted. Attitude will be very useful for someone, because a good attitude will direct what someone does. A positive attitude will affect intentions

individuals to participate in activities that will be realized in the form of action.

Attitude is a person who is still closed to one stimulus. Attitude clearly shows the appropriateness of the reaction to a certain stimulus. Attitude is not yet a certain stimulus. Attitude is a readiness to react to certain environmental objects as an appreciation of the object (Notoatmojo, 2003).

The main components of attitude are:

- a. Trust (belief)
- b. Emotional life and evaluation of objects
- c. Tendency to act

These three components simultaneously form a complete attitude. In determining this complete attitude, knowledge, thoughts, beliefs and emotions play an important role (Notoatmojo, 2003).

2.3 Family Income Level

Family income is one of the economic variables that is quite dominant as a determinant of food consumption (Yayuk Farida, et al, 2004).

Adequate family income will support the growth and development of children because parents can provide all the needs of children, both primary and secondary. Small income / income cannot provide enough food for family members, so that family needs are not fulfilled (Soetjningsih, 1995).

Bhargava et al. (2001) suggested that socioeconomic factors affect a person's iron intake from meat, fish and poultry as well as other animal foods. Khumaidi (1989) suggests that the factors behind the high prevalence of nutritional anemia in developing countries are low socioeconomic conditions. which includes parents' education and low income and poor environmental health conditions. According to research Yip, R et al. (1999) that family opinion affects a person's hemoglobin level.

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 5, JalanPelajar Medan. The research was conducted for two months starting from March to January 2020

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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 5 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

4.1 The Relationship of Knowledge with the Incidence of Anemia in Young Women

After bivariate analysis, there was a significant relationship between knowledge and the incidence of anemia in adolescent girls. P Value < 0.017, with an OR value of 2.365, meaning that girls with poor knowledge had 2.3 times the chance to experience anemia compared to girls with good knowledge. Where the proportion of adolescent girls who have anemia with poor knowledge is 31.9% compared to girls with good knowledge of 16.5% have anemia.

The results of this study are in accordance with research by Saraswati (1997) which states that the number of anemic adolescent girls who have poor knowledge is greater than that of non-anemic girls. Nugraheni (2002) that young women who have knowledge about the meaning, signs, symptoms, causes, consequences and prevention of anemia are still lacking and the level of knowledge of young women about anemia is still low.

4.2 Relationship of Attitude with the Incidence of Anemia in Adolescent Girls

After bivariate analysis, there was a significant relationship between attitudes and the incidence of anemia in adolescent girls. P Value < 0.000, with an OR value of 7.966, meaning that girls who had a negative attitude had 7.9 times the chance to experience anemia compared to girls who had a positive attitude. Where the proportion of adolescent girls who experience anemia with a positive attitude is 8.3% compared to female adolescents with a negative attitude of 41.8% have anemia.

According to Pranadji (1988) a person's attitude can be known from the behavioral tendencies that lead to a certain object. Attitude will be very useful for someone, because a good attitude will direct what someone does. A positive attitude will affect the individual's intention to participate in activities that will be realized in the form of action.

4.3 Relationship between family income and the incidence of anemia in adolescent girls

After bivariate analysis, there was a significant relationship between family income and the incidence of anemia in adolescent girls. P Value < 0.001, with an OR value of 3.307, meaning that girls with high family incomes had a 3.3 times chance of experiencing anemia compared to girls with low family incomes. Where the proportion of low family income suffers from anemia by 34.8% and high family income by 13.9% suffers from anemia.

Bhargava et al. (2001) suggested that socio-economic factors affect a person's iron intake which is sourced from meat, fish and poultry as well as other animal foods. Khumaidi (1989) suggests that the factors behind the high prevalence of nutritional anemia in developing countries are low socioeconomic conditions which include parents' education and low income and poor environmental health conditions. According to research Yip, R et al. (1999) that family opinion affects a person's hemoglobin level.

5. Conclusion

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

- Distribution of anemia incidence in SMA Negeri 5 Medan from 200 young women who are not anemic as many as 153 (76.5%), while those who suffer 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.

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- c. 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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