



Overview of Knowledge About Anemia Prevention with Blood Supplement Tablets at SMAS Dharma Pancasila Medan

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ABSTRACT

The purpose of this research is to find out the picture of knowledge about the prevention of anemia with blood supplement tablets. The sampling technique in this study was carried out with a simple random sampling technique in which 32 students of class XI MIA were selected at SMAS Dharma Pancasila Medan. The method of this research is an experiment with a one group pretest-posttest research design. Data analysis was performed using descriptive analysis and N-Gain test analysis. The results of this study show that there is an influence and improvement in the understanding of the material seen from the increase in pretest and posttest scores. After being analyzed with the N-Gain test, students' knowledge is in the moderate range because each child must have different reasoning abilities. Meanwhile, based on the interpretation of the effectiveness of the counseling process, it shows that the interpretation is less effective. This is likely due to the lack of extension media displayed in the process of delivering material.

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1. INTRODUCTION

Anemia is a condition in which erythrocyte masses and/or circulating hemoglobin masses cannot fulfill their function of providing oxygen to body tissues. The hemoglobin (Hb) is a protein that functions as a means of transporting oxygen. The Hb limit is strongly influenced by: age, sex, altitude of residence from sea level, diet and others (Bakta. 2009). Judging from the life cycle, adolescence is the most difficult period for individuals to go through. This period can be said to be the most critical period for development in the later stages of life. This is because at this time there are so many changes in the individual, both physical and psychological changes (Proverawati dan Erna, 2010).

Young women suffer from anemia when hemoglobin levels in the blood show a lower value of 12 g/dL. Hemoglobin or Hb is a protein found in red blood cells. This protein makes the blood red. Hemoglobin consists of proteins, globin and porphyrin. Hemoglobin serves to help red blood cells return to their original shape, which is round with a smooth middle. If the amount or shape of hemoglobin is poor, then red blood cells cannot work properly. Hemoglobin is a parameter used to determine the degree of anemia and serves as a carrier of oxygen to red blood cells (Aras Utami, 2021).

According to the results of Birch's research in the United States, the number of anemia in adolescents at the age of 12-20 is 25.5% with an explanation of 21% for men and 30% for women. The prevalence is higher in rural areas (27 percent) than in urban areas (22.6 percent). Pregnant women and adolescent girls around the world suffer from anemia up to 30%. (WHO, 2015). The results of Riskesdas data from North Sumatra Province in 2018, the number of people suffering from anemia at the age of 15-24 years is 84.6%, 25-34 years old is 33.7%, 35-44 years old is 33.6% and 45-55 years old is 24%. According to the results of Riskesdas 2013, anemia sufferers in 2018 by 37.1% increased to 48.9% and many adolescents aged between 15 to 24 years. (Kemenkes, 2013)

Iron nutrient requirements increase during adolescence to meet growth demands and iron loss is inevitable. Iron will disappear from the digestive tract, skin and urine and menstrual blood in women (Sharlin dan Sari, 2014). In women, high iron requirements are mainly due to iron loss during menstruation. This results in women being more prone to iron nutrition anemia than men (Susilowati dan Kuspriyanto, 2016). Blood supplement tablets are folate tablets, each tablet contains 200 mg of iron sulfate or 60 mg of elemental iron and 0.25 mg of folic acid. Young women should take blood-boosting tablets because they menstruate every month and therefore need iron to replace lost blood. Blood tablets are able to treat anemia, improve learning ability, working ability and quality of human work in later generations. The recommended intake is to drink 1 (one) tablet added blood once a week. (Kementerian Kesehatan, 2015)

The cause of anemia is a nutritional condition that affects the digestive system, family wealth, environment and health status. Khumaidi (1989) suggests that the factors causing the increase in iron deficiency anemia in developing countries are poor economic conditions, including parental education, low income, and personal health, as well as poor environment. Lack of Hb in the blood can cause symptoms of fatigue, weakness, weakness, weakness, lethargy, and weakness. In addition to reducing learning outcomes and productivity, anemia can also reduce endurance and make it less susceptible to infection. Adolescents are at high risk of anemia, especially iron deficiency. An estimated 25 percent of Indonesian adolescents are anemic.

Although Not contagious, anemia is very dangerous because it can affect the health of the child later in life. One form of health education in increasing adolescent knowledge of anemia is by conducting counseling. In the extension process, it is necessary to have extension methods and media. The use of anemia counseling methods and media in this study aims to facilitate the delivery of messages about anemia intended for adolescent girls

aged 15-18 years. Learning media used in learning activities can affect the effectiveness of learning (Kholid, 2014). Based on the background description of the above problems, researchers are interested in researching "Prevention of Anemia in Adolescents with Blood Supplement Tablets" at SMAS Dharma Pancasila.

2. RESEARCH METHODS

This study used experimental quantitative methods. Suharsimi Arikunto (2000: 272) argues similarly that the definition of experimental research is research that seeks to determine whether or not there is an influence of a treatment on the subject under study. This study did not use a control class but only used an experimental class. The tests in this study were carried out twice, namely before the experiment and after the experiment. The design used in this study is *one group pretest-posttest design*. For an explanation of the design of this study can be seen from the table below.

Tabel 1. with one group pretest-posttest design

Pretest	Treatment	Posttest
O ₁	X	O ₂

Source : (Sugiono, 2014)

Explanation :

O₁: Observation before treatment (*Pretest*)

X : Treatments used in the study

O₂: Observation after treatment (*Posttest*)

The design of this study includes three stages, namely: pretest, then provide information on anemia counseling and role play games using crossword puzzles with students, and finally provide posttests. This research was conducted on Friday, March 31, 2023 at SMAS Dharma Pancasila Medan, which is located at Jalan Dr. Mansur no. 71 C Medan, Padang Bulan Selayang I, Kec. Medan Selayang, Provinsi Sumatera Utara. The number of respondents in this study was 30 people aged between 16 to 17 years. The sampling system in this study was carried out with a simple random sampling technique. Where we took one of class XI MIA which was used as a sample in the study. This technique researchers use because of course in one class must have been scattered randomly and there are no differences in class rank categories, groups, gender.

The data collection methods carried out in this study are tests, documentation, and observation. The test method carried out is with formative tests presented in the form of multiple choices (pretest and posttest). The documentation method in this study was carried out in the form of attendance and evidence from the conduct of this study. Meanwhile, the observation method in this study was carried out by observing the development and activeness of students in responding to speakers and seeing improvements after counseling. In this observation method, researchers conduct question and answer discussion activities from counseling activities so as to make it easier for students to study the material presented.

The instruments used in this study were by using test questions (pretest and posttest) and crossword puzzle media to determine the level of reasoning of students in receiving the material presented. The test given is 6 multiple-choice questions. Meanwhile, crossword puzzles are delivered when counseling has been carried out. The number of questions from this crossword puzzle is 6 questions presented in front of the blackboard. Students who can answer the crossword puzzle questions will scramble to answer ahead and get prizes if the

answers are correct. This is done in order to motivate other students to try to find answers and observe the counseling mathematics seriously.

In the process of data analysis using descriptive analysis and inferential analysis. Descriptive analysis to find out the general picture of the data obtained to determine the level of knowledge about the prevention of anemia with blood supplement tablets. The data processing process is carried out by presenting a frequency distribution table by finding the highest value, lowest value, average, variance, and standard deviation to give an idea of the characteristics of the variables studied. Meanwhile, inferential analysis was carried out using the N Gain test to determine the increase in extension results before and after treatment, namely by using the experimental method of one group pretest-posttest design. The interpretation criteria put forward by Hake are as follows.

Table 2. Division of N Gain Score

N Gain Score	Category
$g > 0,7$	High
$0,3 \leq g \leq 0,7$	Medium
$g < 0,3$	Low

Table 3. Categories Interpretation of Effectiveness N Gain

Presentase (%)	Interpretation
< 40	Ineffective
40-55	Less Effective
56-75	Quite Effective
> 76	Effective

3. RESULT AND ANALYSIS

Descriptive Analysis

Descriptive analysis of the results of knowledge of SMAS Dharma Pancasila Medan students regarding the prevention of anemia with blood supplement tablets with experimental methods can be seen from the table below.

Tabel 4. Descriptive Analysis of Student Knowledge Outcomes

Statistik	Pretest Score	Posttest Score
Number of students	32	32
Ideal Score	100	100
Highest Score	100	100
Lowest score	33	33
Average	60	78
Variance	445.7	249.1
Standard deviation	21	15,7

Data from the table presented above shows the pretest scores of 32 Class XI MIA students at SMAS Dharma Pancasila Medan on knowledge about the prevention of anemia with blood supplement tablets, the highest score reached 100 which met the ideal score

criteria and the lowest score reached 33 from the possibility of getting 0 values. The average obtained from this pretest score is 60 with a variance of 445.7 and a standard deviation of 21.

Based on posttest questions from 32 Class XI MIA students at SMAS Dharma Pancasila Medan on knowledge about preventing anemia with blood supplement tablets, the highest score reached 100 which met the ideal score criteria and the lowest score reached 33 from the possibility of getting a score of 0. The average obtained from this pretest score is 78 with a variance of 249.1 and a standard deviation of 15.7.

Inferential Analysis

In the inferential analysis conducted using experimental methods to determine the level of knowledge of Class XI MIA students at SMAS Dharma Pancasila Medan on the prevention of anemia with blood supplement tablets, the N-Gain test was used. The results of this N-Gain test analysis can be seen from the following table.

Table 5. Frequency and Percentage Distribution of Knowledge Level of Class XI MIA Students at SMAS Dharma Pancasila Medan on the prevention of anemia with blood added tablets (TTD) based on the N-Gain range.

Range	Category	Frequency	Presentase	Average N Gain
$g > 0,7$	High	2	6,25	0,40
$0,3 \leq g \leq 0,7$	Medium	12	37,5	
$g < 0,3$	Low	18	56,25	
Sum		32	100	

The table above shows that there were 2 students who got the high category, 12 students who got the medium category, and 18 students who got the low category. It can be seen that Class XI MIA students at SMAS Dharma Pancasila Medan get an average N-Gain of 0.40 which is included in the medium category.

Table 6. Frequency and Percentage Distribution of the level of knowledge of Class XI MIA students at SMAS Dharma Pancasila Medan regarding the prevention of anemia with blood-boosting tablets (TTD) based on the interpretation of the effectiveness of N Gain.

Persentase (%)	Interpretation	Frequency	Presentase	Average N Gain
< 40	Ineffective	14	43.75	40.21
40-55	Less Effective	7	21.875	
56-75	Quite Effective	7	21.875	
>76	Effective	4	12.5	
Sum		32	100	

The table above shows that there were 14 students who got a percentage of < 40 indicating an ineffective interpretation, 12 students who received a percentage of 40-50 indicating a less effective interpretation, 7 students who received a percentage of 56-75 indicating a quite effective interpretation, and 4 students obtaining a percentage of >76 indicating an effective interpretation. It can be seen that Class XI MIA students at SMAS Dharma Pancasila Medan get an average N-Gain of 40.21 which is included in the less effective interpretation.

4. DISCUSSION

Every child must have different reasoning abilities. This experimental method was carried out in just one day by counseling Class XI MIA students at SMAS Dharma Pancasila Medan. To find out the process of increasing knowledge and comprehension of students, the researchers provide pretest and posttest questions. Based on the results of the study, analyzed using descriptive analysis and inferential analysis (N-Gain Test) obtained results from descriptive analysis that the average pretest and posttest scores obtained by Class XI MIA students at SMAS Dharma Pancasila Medan increased from 60 to 78. This shows that there is an influence and improvement in the understanding of counseling materials, crossword puzzle and the results of question-and-answer discussions.

Based on the range of N-Gain tests that have been carried out, the level of knowledge of XI MIA students at SMAS Dharma Pancasila Medan about preventing anemia with blood supplement tablets after the experimental method shows a moderate range. This is because every child must have different reasoning abilities. So that in the process of delivering counseling materials, there are some students who have not captured the material well presented. In addition, students' learning interests vary in their rate of rapid and slow reasoning.

Meanwhile, based on the interpretation of the effectiveness of N-Gain, the level of delivery of counseling material to XI MIA students at SMAS Dharma Pancasila Medan about the prevention of anemia with blood supplement tablets after an experimental method showed a less effective interpretation. This is likely due to the lack of extension media displayed in the process of delivering material. It is possible that when coupled with the appearance of visual videos can increase the comprehension of students so that the counseling process becomes effective and there is a large increase in students' understanding of the prevention of anemia with blood supplement tablets.

5. CONCLUSION

Based on the results of research and discussion, it was found that there was an influence and improvement in the understanding of counseling material, crossword puzzle and the results of question and answer discussions on the understanding of XI MIA students at SMAS Dharma Pancasila Medan. Based on research with the N-Gain test which shows a moderate range, because each child must have different reasoning abilities. So that in the process of delivering counseling materials, there are some students who have not captured the material well presented. In addition, students' learning interests vary in their rate of rapid and slow reasoning.

Meanwhile, based on the interpretation of the effectiveness of the counseling process, after the experimental method was carried out, it showed that the interpretation was less effective. This is likely due to the lack of extension media displayed in the process of delivering material. It is possible that when coupled with the appearance of visual videos can increase the comprehension of students so that the counseling process becomes effective and student understanding becomes more increased.

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