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RESEARCH ARTICLE

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The Effect of Health Education on the Level of Knowledge About Anemia in Adolescent

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ABSTRACT

Anemia is one of the most common nutritional problems, especially in adolescents which is usually caused by iron deficiency and the increasing need for iron at that time. The provision of health education to young women aims to overcome the high problem of anemia and is one solution to increase knowledge about anemia. This study aims to identify the effect of health education on the level of knowledge about anemia in adolescent girls at SMK Negeri 17 August 1945 Genteng. This study used control group pre-test and post-test design. The population of this study were 225 students with a sample of 100 students who were selected using purposive sampling technique. The instrument used was questionnaire about knowledge of anemia and health education with leaflets and video power point media. The analysis technique used was the paired samples t-test. The results of the analysis showed p-value of <0.001, it means that there is an effect of health education on the level of knowledge about anemia in adolescent girls. It is hoped that after health education about anemia in adolescent girls can prevent anemia, especially during menstruation.

Keywords: anemia; health education; knowledge

INTRODUCTION

Background

One of Indonesia's most common nutritional problems is anemia, mainly caused by iron deficiency, often experienced by school children, especially teenagers⁽¹⁾. The risk of anemia is greater in adolescent girls because it is influenced by nutritional intake and the nutritional needs of adolescents are higher. It is also related to menstruation which is experienced every month which makes lose a lot of blood. It can also caused by a strict diet which is often done by adolescent girls to achieve body goals so they often ignored the nutrition needs due to lack of knowledge about anemia⁽²⁾. Lack of knowledge about anemia can cause young women to consume unhealthy foods, one of which is eating foods that are low in nutrition to cause anemia⁽³⁾. The impact of anemia that arises will cause a decrease in achievement and enthusiasm for learning due to a lack of concentration⁽⁴⁾.

The prevalence of anemia in young women worldwide is still relatively high and always increases every year, around 50-80% in 2015, while in 2018, it increased to 40- 88%⁽⁵⁾. Data from SMK Negeri 17 August 1945, Genteng There are 225 teenagers from 600 Overall students.

Iron deficiency anemia is one type of anemia caused by iron deficiency in the body, so that there is a decrease in the number of healthy red blood cells⁽⁶⁾. When iron deposits in the body are reduced, and the absorption of iron in food is negligible, the body will begin producing fewer red blood cells so that it contains less hemoglobin⁽⁷⁾. Adolescents often experience anemic symptoms include lethargy, weakness, tiredness, tired negligence, dizziness, eyes of charming, and pale face. Anemia can cause various impacts, one of which is; the body is easily affected by infection due to decreased body resistance and physical activity⁽⁸⁾.

The solution to overcome the high sufferer of anemia in young women can be done by conducting health education counseling about the knowledge of anemia⁽⁹⁾. The counseling process is needed for methods and media which will be delivered about anemia. Media and methods used in conveying messages can affect someone's knowledge of anemia⁽¹⁰⁾. Another solution related to the treatment of anemia is by providing blood tablet drugs. The purpose of counseling can increase knowledge of anemia disease in young women, and they are expected to take blood and blood tablet drugs if they experience anemia⁽¹⁰⁾. If anemia in adolescents is not treated immediately, it will result in a decrease in body resistance so that a person will be susceptible to health problems

⁽¹¹⁾ which will have an impact on decreasing learning activities due to lack of concentration in adolescents ⁽¹²⁾. This study aims to identify the effect of health education on the level of knowledge about anemia in adolescent girls at SMK Negeri 17 August 1945 Genteng.

METHODS

This study used a quantitative approach with a quasi-experimental type of research. The research design used was pre-test and post-test with control group design, namely by measuring or observing all dependent variables with independent variables carried out at different times. Knowledge was measured before and after the intervention, namely the provision of health education through leaflet media to the control group and the provision of video intervention to the treatment group. This design was used with the reason to compare the results of health education interventions for adolescents at SMK Negeri 17 Genteng. The target population in this study were all female students at SMK Negeri 17 Genteng. The research sample was obtained using the purposive sampling method by determining the inclusion criteria, namely young women who are students from SMK Negeri 17 Genteng who were willing and aged over 15 years and have experienced menstruation, while the exclusion criteria for students who had blood disorders such as leukemia, thalassemia, hemophilia and so on. The sample size in this study was 100 respondents, with 2 groups of 50 students each for the control group and 50 students for the treatment group. The independent variable in this study was health education, while the dependent variable was knowledge of young women about anemia. This research instrument was questionnaire sheet where previously the questionnaire has been tested for reliability and validity. The results of the validity test obtained the $r = 0.366$ to 0.510 . The calculated r value was greater than r table, so it could be concluded that all questions on the knowledge questionnaire about anemia are valid. Then the value of the calculated alpha coefficient was greater than 0.6 ($0.921 > 0.6$) so it could be concluded that all questions on the knowledge questionnaire about anemia were reliable. The results of data collection from the questionnaire were then tabulated and analyzed using the paired samples t-test.

RESULTS

Calculating the respondent's characteristics regarding the effect of health education on the level of knowledge of anemia in young women in the state smk 17 August 1945, Genteng can be seen in tabulation in Table 1.

Table 1. The characteristics of respondents

Characteristics of respondents		Frequency	Percentage
Age	16 years old	17	17
	17 years old	35	35
	18 years old	45	45
	19 years old	3	3
Education	X	8	8%
	XI	42	42%
	XII	50	50%
Ethnic group	Javanese ethnic	95	95%
	Madurese	5	5%
Anemia history	Yes	24	24%
	No	76	76%
Total		109	100%

Based on the table 1, it can be seen that the age in this study is known that most respondents are 18 years old as many as 45 people (45%). Education is known that most have 50 class XII education (50%). The tribe is known that most respondents have 95 Javanese tribes (95%). The history of anemia is known that most respondents did not have a history of anemia as many as 76 people (76%)

The results of calculations regarding the effect of health education on the level of knowledge of anemia in young women in the state smk 17 August 1945, Genteng can be seen in tabulation in Table 2.

Table 2. Knowledge before health education in the experimental group

Knowledge	Frequency	Percentage
Good	8	16
Sufficient	17	34
Less	25	50

Table 2 shows the results on the knowledge of respondents before being given health education, the knowledge of respondents is categorized into 3 categories, namely good, sufficient, and less. There are 8 respondents (16%) have good knowledge, there are 17 respondents (34%) have sufficient knowledge and 25 respondents (50%) have less knowledge about anemia.

Table 3 shows the results of the research on students' knowledge after being given health education. In X1 there are 47 students (94%) have good knowledge and there are 3 students (6%) have sufficient knowledge about anemia. While X2 there are 48 students (96%) have good knowledge and there are 2 students (4%) have sufficient knowledge about anemia.

Table 3. Knowledge after health education in the control group (X1) and experimental group (X2)

Knowledge	Frequency X1	Frequency X2	Percent X1	Percent X2
Good	47	48	94	96
Sufficient	3	2	6	4
Less	0	0	0	0

Table 4. Results of statistical tests on the effect of health education on the level of knowledge of anemia

	Mean	1.280
	Std. Deviation	0.757
	Std. Error Mean	0.107
95% Confidence Interval of the Difference	Lower	1.065
	Upper	1.495
	T	11.956
	Df	49
	Sig. (2- Tailed)	0.000

Based on data in Table 4, it can be concluded that the results of the analysis show from the Paired Samples Test test with $A = <0.05$ obtained the value of the sig. (2- tailed) = 0,000, then H_0 is rejected, and H_a is accepted, meaning that there is a relationship between the influence of health education (PRE and POST TEST) on the level of knowledge of anemia in young women on 17 August 1945, Genteng Banyuwangi.

DISCUSSION

Student's Knowledge About Anemia Before Health Education was Conducted

The level of knowledge of students before being given health education, namely 8 students (16%) had good knowledge, 17 students (34%) had sufficient knowledge and 25 students (50%) had less knowledge about anemia. Based on these data, most of the students are in the category of low level of knowledge. Knowledge is the result of "knowing" from someone after sensing an object, this sensing can occur in the five human senses. Human knowledge can be obtained from the senses of the eyes and ears. Education is an activity or learning process to develop and improve information for educational targets ⁽¹³⁾.

There are several factors that influence knowledge, namely education, occupation, age, interests, experience, culture, environment and information. Age affects knowledge, with increasing age a person will experience changes in physical and psychological (mental) aspects. Broadly speaking, physical changes consist of four categories, namely changes in size, changes in proportions, loss of old characteristics and the emergence of new characteristics. These changes occur due to the maturation of organ function. In the psychological or mental aspect, a person's level of thinking becomes more mature and mature ⁽⁶⁾. Some studies say that someone who often gets information from formal and non-formal education will get knowledge faster. After a person gets a stimulus, he will have something to remember and understand as well as health education which will make it easier to increase one's knowledge. Information obtained from formal and non-formal education can have a short-term effect, resulting in changes or increases in knowledge ⁽¹⁰⁾.

Based on the results of research analysis, that the age of the respondent is still too young so that the level of thinking about things that have never been experienced is still immature supported by insufficient information. So respondents are more at risk of anemia due to lack of understanding and understanding how to prevent anemia during menstruation.

Student's Knowledge About Anemia After Health Education Was Conducted

Based on the results of the study that the level of knowledge of respondents after being given health education, namely X1 (control group) as many as 47 students (94%) had good knowledge and there were 3 students (6%) had sufficient knowledge about anemia. While X2 (treatment group) there are 48 students (96%) have good knowledge and there are 2 students (4%) have sufficient knowledge about anemia.

The increase in the knowledge and understanding of the students was caused because the students had received lessons in the form of counseling so that there was a learning process where something that did not know turned into knowing and from not understanding to understanding. This is in line with Anifah's theory ⁽¹⁴⁾ which says that learning is an attempt to acquire new things in behavior including knowledge, skills, skills, and values with mental activity itself. Based on this statement, it is clear that the characteristic of the learning process is to acquire something new, which previously did not exist, now exists, what was previously unknown, is now known, what was previously not understood, is now understood. This knowledge is finally expected to affect a person's level of knowledge ⁽¹⁵⁾.

Knowledge is the result of knowing, this occurs after people have sensed a certain object. Extension or education is an activity or learning process to develop or improve certain abilities through increasing information so that educational goals can stand alone. Information will have an influence on a person's knowledge even though the person has a low education but if the person gets the right information then it will increase knowledge ⁽¹³⁾.

Based on the results of research analysis, that with health education carried out it will change one's knowledge so that respondents who have low knowledge will turn into respondents who have good knowledge so that they can apply how to prevent and overcome if they have anemia.

The Effect of Health Education on the Level of Knowledge About Anemia in Adolescent

Based on the results of the study showed that there was an influence on the level of knowledge of young women about anemia after being given health education. Health education is a dynamic process of behavior change with the aim of changing or influencing human behavior which includes components of knowledge, attitudes, or practices related to healthy living goals both individually, in groups and in society, and is a component of health programs ⁽¹⁵⁾. And the results of Anifah's research ⁽¹⁴⁾ that there is a significant effect of health education on increasing knowledge. Health education aims to change the understanding of individuals, groups, and communities in the health sector so that health becomes something that is useful, valuable, independent in achieving the goals of healthy living, and can use existing health service facilities appropriately and appropriately.

This study is supported by previous research conducted by Rokhmawati ⁽¹⁶⁾ that there are differences in the level of knowledge about anemia in adolescents before and after being given nutrition counseling with leaflet media at Christian Junior High School 1 Surakarta, p-value 0.0001. Health education is essentially an activity or effort to convey health messages to the public, groups and individuals. With this message, it is hoped that the community, group or individual can gain knowledge about good health so that they are able to change a person's behavior for the better.

CONCLUSION

1. The level of knowledge of respondents before being given health education about anemia the majority had less knowledge.
2. The level of knowledge of students after being given health education about anemia, namely in X1 (control group) or X2 (treatment group) almost having good knowledge.
3. The effect of health education on the level of knowledge of young women about anemia shows the results that there is an effect of health education (pre and post test) on the level of knowledge about anemia in adolescent girls at SMK Negeri 17 August 1945 Genteng Banyuwangi.

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