

Original Research Article Outline:

THE EFFECT OF ANIMATED VIDEO HEALTH EDUCATION ON ANEMIA PREVENTION WITH THE KNOWLEDGE OF ADOLESCENT GIRLS AT KESTARIAN 1 SEMARANG HIGH SCHOOLWidya Mariyana¹⁾, Fransisca Gloria^{2)*}¹⁾Midwifery Department, ²⁾Pharmacy Department, STIKES Telogorejo Semarang*Corresponding Author, E-mail: fransisca@stikestelogorejo.ac.id**ABSTRACT**

Introduction. Anemia is a condition of the body where the level of hemoglobin (Hb) in the blood is less than normal. In general, anemia occurs more often in young women than in men. Anemia in adolescents occurs due to nutritional deficiencies, especially iron and folic acid. This lack of intake is due to low knowledge or wrong perceptions about diet without considering the body's need for macro and micro substances. The impact of anemia on teenagers can be a decrease in academic achievement and susceptibility to disease. Health education media with animated videos can have advantages over other media because they are more interesting. After all, it is in audiovisual form, the images displayed are more interesting and easier for teenagers to accept and understand. **Method.** The method used was a nonrandomized quasi-experimental pretest-posttest one-group design. The sample in this study consisted of 60 respondents, who were taken by purposive sampling. Respondents were given education about anemia using animated video media where before and after the intervention they were given a pre-test and post-test. Bivariate analysis test using the Wilcoxon test to determine the difference in mean knowledge before and after intervention. **Result&Analysis.** There is an influence of providing education using animation media on increasing knowledge of young women about anemia at Kestrian 1 High School Semarang, shown by the significance value of p-value of 0.000, which means the p-value is <0.05. **Discussion.** Animated video media has the effect of increasing young women's knowledge about preventing and treating anemia.

Keywords: Anemia, Educational Video, Teenage Girls**INTRODUCTION**

Adolescence is a transitional period of development between childhood and adulthood. Every teenager experiences puberty where there are biological changes such as physical and hormonal changes, in addition, teenagers also experience sociological phenomena such as changes in behavior, psychology, changes in roles in society (Pratomo et al., 2022). According to WHO (World Health Organization), it is said that teenagers aged 10-19 years, teenagers are one of the

vulnerable groups in nutrition caused by accelerated growth and development, changes in lifestyle, eating habits, and physical activity. Adolescent girls are vulnerable to several health problems, including anemia (WHO, 2017).

Anemia is a condition of the body where the level of hemoglobin (Hb) in the blood is less than normal, in adolescent girls it is said to be anemia if the Hb content is <12 grams/dl, in general anemia is more common in adolescent girls than in boys. It is very unfortunate because most anemia sufferers do not know and

are not aware of it, even when they know they still consider anemia as a trivial problem (Podugge et al., 2022).

The incidence of anemia in adolescent girls in the world is still high as reported by research in several countries below. According to WHO (World Health Organization), the incidence of anemia in adolescent girls in southern India as a whole is 67.9%, moderate anemia 37.05%, mild anemia 21.42%, and severe anemia 9.4%. The incidence of anemia in Sri Lanka is 31.65%, Myanmar 26%, Maldives 57%, and India 67.9% (WHO, 2017).

If anemia is not treated during adolescence, anemia will continue into pregnancy. The impact of anemia during pregnancy is antepartum hemorrhage, postpartum hemorrhage, and increased maternal mortality. Anemia can also pose risks to babies such as premature birth, low birth weight (LBW), growth disorders, and development (Erlinawati et al., 2023).

Animated video is an audio-visual media in the form of a series of inanimate images that are sequentially on frames and projected mechanically, electronically, so that they appear alive on the screen. Learning using animated video media is presented using cartoons that contain lesson materials and can be used as learning media for schools because of its interesting and funny nature, making it suitable for school children (Julia et al., 2021).

METHOD AND ANALYSIS

This type of research is a quantitative type with a quasi-experimental design with a pre-test and post-test group design. The research location was at SMA Kesatrian 1 Semarang. The population in this study were all female students in grades VII and VIII at Kesatrian 1 Senior High School Semarang totaling 130 female students

consisting of five classes. Sampling was based on purposive sampling with 60 respondents. Data analysis was carried out using univariate and bivariate analysis. Bivariate analysis with non-parametric tests using the Wilcoxon test because the data was not normally distributed.

RESULT

Based on the data in Table 1, the characteristics of respondents in the age category are mostly in the 14-year-old category, as many as 29 respondents (50.9%). Hobby characteristics, more respondents like music or art as many as 23 respondents (40.4%). Parents' jobs are mostly in the self-employed category as many as 20 respondents (35.1%). The category of receiving information about anemia is 93% of teenage girls have never received information about anemia before. Respondent characteristics based on age, hobbies, and parents' occupation.

Table 1 Frequency distribution of respondent characteristics

Variable	N	%
Years		
12	3	1,8
13	21	36,8
14	29	50,9
15	6	10,5
Hobbies		
Sport	11	19,3
Music/Art	23	40,4
Reading/Watching	17	29,8
Cooking	3	2,5
Others	4	5,1
Parents' Occupation		
Farmers/laborers	13	21,1
Private employees	14	24,6
Civil servants/military/police	13	19,3
Self-employed	20	35,1
Information About Anemia Ever	7	7
Never	53	93
Total	60	100

Based on the data in table 2, it was found that the average knowledge value of female adolescents increased after receiving health education or education

with animated video media. The average knowledge value before health education with education through animation was 83.70 with a minimum value of 40 and a maximum value of 100. The average knowledge after health education increased to 85.79. The highest post-test knowledge value was 100 and the lowest was 48. The Wilcoxon test showed that the p value = 0.000 which means $p < \alpha$ (0.05). This means that there is a significant difference in knowledge between before health education and animated media education.

Table 2 Knowledge of adolescent girls about anemia

Group (n)	Variabel	Mean	Minimum-Maksimum	P Value
Respondent (60)	Knowledge			
	Pre-test	83,70	40-100	0,000
	Post-test	85,79	48-100	

DISCUSSION

The results of the study showed that there was an effect of providing education through animated videos on preventing anemia on increasing the knowledge of adolescent girls at SMP Negeri 1 Kalasan. The average pre-test result was 83.70 with a minimum score of 40 and a maximum score of 100. The post-test result was 85.79 with a minimum score of 48 and a maximum score of 100. The difference in the mean in the pre-test and the mean in the post-test showed that there were not too many significant changes. However, when analyzed using the Wilcoxon test, it still showed a p -value < 0.05 , which means that there was an effect of providing animated education on the knowledge of adolescent girls about anemia. Knowledge is a person's intellectual ability including understanding the material and the process of finding out from not knowing to knowing. The process of finding out includes several methods and concepts, both through formal and non-formal

education processes and training (Kurniasih, 2022). The higher the level of education that adolescent girls go through, the greater the opportunity to get broader information so that the knowledge they have will also be more unlimited.

Information is an important part of overcoming anxiety experienced by adolescent girls. The more information that adolescent girls get, the more it will strengthen their level of knowledge. This information can be obtained from various things, namely directly from person to person, the internet or mass media, newspapers, television, and so on (Zulmiyetri, 2020). Anemia is a condition in which the number of red blood cells is lower than it should be, commonly referred to as anemia. One of the causes is a lack of iron consumption so hemoglobin levels in the blood are also low. Anemia is not a disease, but a manifestation of a pathological process that describes poor nutritional and health status (Nurbaya et al., 2019). Anemic adolescent girls can continue to become pregnant women with anemia. Adolescence is a transition period from childhood to adulthood which is followed by biological, cognitive, and socio-emotional changes (Ministry of Health, 2021).

Lack of knowledge of adolescents about the importance of consuming balanced nutrition will have an impact on the attitudes and behavior of adolescents who are wrong in consuming daily food. Wrong attitudes in consuming food and not paying attention to inadequate nutritional value will have a negative impact on the health and growth of adolescents in the future (Ester, S.V., & Kurniasari, R. 2021). Adolescent girls usually want to appear slim, so they limit their food intake. Every day humans lose 0.6 mg of iron which is excreted, especially through feces, and adolescent girls experience menstruation every month, where the loss of iron is approximately 1.3 mg per day. Iron functions as energy metabolism in the

body. Iron or Fe also functions to improve academic achievement because some parts of the brain have high iron levels obtained from iron transport which is influenced by transferrin receptors. As a result of iron deficiency, fatigue, concentration, memory, and learning ability are impaired, it can also cause iron deficiency anemia, especially in adolescent girls (Sartika, W & Sila Dewi, A., 2021).

Based on the results of statistical analysis in the intervention group, a p-value of 0.000 ($P < 0.05$) was obtained, which means that there was a difference in adolescent knowledge in the intervention group after being given health education on the prevention and treatment of anemia using animation media. This is in line with research conducted by Suzana & Haris (2017) which stated that counseling with animation media can improve students' knowledge and attitudes regarding nutritious food. This illustrates that health education using animation media can improve adolescent girls' knowledge about anemia.

Educational media is one of the determining factors for the success of Health Education. The selection of the right media must be considered before conducting counseling. Previous research by Harris (2018) on the effect of counseling with animation media on knowledge and attitudes about nutritious food. Animation media is considered effective in delivering learning, especially in the millennial era. Educational media functions to mobilize as many senses as possible to an object so as to facilitate perception (Marisa & Nuryanto, 2014). The importance of animation media as an educational media is that it has the ability to explain something that is complicated or complex and difficult to explain using only pictures or words. Most knowledge is obtained through the sense of sight by 30% and the sense of hearing by 10%. Research (Ningdyah et al., 2021), at the Alfidrus Hidayatullah Sekar Tahfizh Putri Islamic Boarding School with 24

female adolescents also showed that the knowledge of female adolescents before being given health education with videos, the majority had sufficient knowledge 19 (89.2%), while after being given health education, the majority had good knowledge 24 (100%) obtained a P-Value of 0.001 (< 0.05) which can be interpreted as there is a significant relationship between knowledge before and after being given health education with animated videos about anemia in female adolescents.

Learning media that is visualized in the form of animated images will be more meaningful and interesting, easier to accept, understand and more motivating for students in receiving the information provided (Sukiyasa & Sukoco, 2013). In addition, the use of animation and special effects in a learning media will be better and more effective in attracting students' attention in learning situations both at the beginning and at the end of a series of learning activities.

The selection of animated videos as a health education medium is very effective because it can display elements of sound, moving images, and colors that attract attention so that it can increase the knowledge of adolescent girls about anemia (Hartini, 2022). This is in line with research conducted on the effect of health education with animated videos on increasing the knowledge of adolescent girls about anemia, the results obtained before being given health education, the majority had sufficient knowledge, while after being given health education, the majority had good knowledge. This study can be said to be successful because it has achieved a success indicator of more than 75% of all students who were respondents.

CONCLUSION AND SUGGESTION

There is an influence of education with the use of animated video media

about anemia on changes in knowledge of adolescent girls. The average pre-test result is 83.70 with a minimum value of 40 and a maximum value of 100. The post-test result is 85.79 with a minimum value of 48 and a maximum of 100. The average knowledge after health education increased to 85.79. The highest post-test knowledge value is 100 and the lowest is 48. The Wilcoxon test shows that the p -value = 0.000 which means $p < \alpha$ (0.05). This means that there is a significant difference in knowledge between before-health education and animated media education.

Suggestion. Young women are expected to regularly consume iron tablets provided by the health center and consume iron tablets during menstruation. When taking iron tablets, avoid taking them with coffee, milk, or tea because they can inhibit iron absorption. Young women pay more attention to the food they consume every day, for example eating foods rich in protein and iron. Avoid consuming green vegetables with tea.

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