

The Influence of Health Education about Anemia Using Audiovisual Media on Knowledge and Attitude Adolescent Girls in MTS Sabilarrasyad Samarinda

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ABSTRACT

Adolescent girls are susceptible to anaemia due to blood loss during menstruation. The purpose of this study was to identify the influence of health education regarding anaemia, utilising audiovisual media, on the knowledge and attitudes of adolescent girls in MTS. Sabilarrasyad Samarinda. This study employed a quantitative methodology utilising a pre-experimental design, specifically a one-group pre-test and post-test framework. The number of students with increased knowledge rose from 34 (66.7%) to 51 (100%). It is known that 49 out of 50 pupils (98%) with average knowledge demonstrated improvement. For the attitude category score, 45 pupils (88.2%) exhibited an average attitude. The Wilcoxon test reveals a P-Value of 0.000 for the knowledge variable and a P-Value of 0.000 for the attitude variable. The impact of health education regarding anaemia, utilising audiovisual means, on the knowledge and attitudes of adolescent girls.

INTRODUCTION

Adolescent females (Rematri) represent a transitional phase from childhood to maturity characterised by physical and psychological transformations. The physiological alterations are defined by the operation of the reproductive organs, exemplified by menstruation, occurring between the ages of 10 and 19 years. Adolescent girls are susceptible to anaemia due to monthly blood loss during menstruation. Adolescent females with anaemia are at risk of developing anaemia during pregnancy (Kemenkes, 2018).

The World Health Organisation (WHO) reports that the prevalence of anaemia among adolescent females remains significantly high, ranging from 40% to 88% globally. The World Health Organisation reports that the prevalence of anaemia among adolescent girls in underdeveloped nations is approximately 53.7%. Anaemia frequently affects adolescent girls owing to menstruation issues, stress, or delayed meals. (WHO, 2013) in Rinjani et al. (2022).

According to the 2018 Basic Health Research (Riskesdas), the prevalence of anaemia in Indonesia was documented at 23.7%. The frequency among teenage girls aged 5-14 years is 26.8%, whereas for those aged 15-24 years, it is 32%. The prevalence of females is 27%, whereas that of males is 20.3%. Consequently, anaemia is a symptom that necessitates investigation into its origins and appropriate interventions based on those reasons. (Riskesdas, 2018)

Data from the Samarinda City Health Office in 2021 indicates that 107 individuals are afflicted with anaemia. Furthermore, the data was derived from the outcomes of the health screening recapitulation for junior high school/MTS students in Samarinda City (Samarinda City Health Office, 2021).

Data from the Lok Bahu Samarinda Health Centre indicates that among several schools doing haemoglobin (HB) assessments within its jurisdiction, 41 individuals are diagnosed with anaemia.. Madrasah Tsanawiyah Sabilarrasyad is one of the Islamic boarding schools that is included in the working ara of the Lok Bahu Health Center with a relatively dense learning time, this is a factor that allows many students (adolescent girls) to experience the risk of developing anemia due to dense school activities. (Lok Bahu Health Center, 2021).

The results of a preliminary study on Octobe 20, 22 at Madrasah Tsanawiyah Sabilarrasyad from grades 7 and 8 showed that there were 7 adolescent girls who experienced anemia, out of 10 adolescent women inteviwed. In addition, 6 people in grade 7 & grade 8 have never received any information about anemia which results in lack of exposure to health information, especially for adolescent girls, 4 other people in grade 8 have received information about anemia. And the level of knowledge in grade 7 there are 4 people who have less knowledge, especially about anemia, while 1 person in grade 8 has moderate knowledge. In addition, in grade 8 there is 1 person who has less knowledge and 4 other people have moderate knowledge about anemia. Several othe questions the young women answered that some people during the ceremony had fainted and experienced dizziness.

Based on information from one of the UKS officers, it is explained that health counseling is rarely carried out. Making health a valueable thing in society and one of the factors that affect health education is health promotion in the

predisposing factor in the sense that it aims to upload public awareness, especially adolescent girls do not know exactly and in detail about anemia knowledge and anemia attitudes so that the risk of anemia does not continue to severe anemia.

Given the aforementioned context, adolescent girls exhibit insufficient exposure to information regarding anaemia health; hence, researchers aim to investigate the impact of health education on anaemia utilising audiovisual media on the knowledge and attitudes of adolescent girls. Madrasah Tsanawiyah Sabilarrasyad Samarinda.

THEORETICAL REVIEW

Anemia

Anaemia is a disorder characterised by a deficiency in the quantity of red blood cells or a reduced concentration of haemoglobin. Haemoglobin is essential for oxygen transport; insufficient or defective red blood cells, or inadequate haemoglobin levels, result in diminished oxygen-carrying capacity of the blood to the body's tissues. (WHO, 2019).

Most of the causes of anemia in Indonesia are the lack of iron needed for the formation of Hemoglobin (HB) in the body due to the consumption of less iron source foods, especially those of animal origin, suffering from infectious diseases that can result in reduced iron absorbed by the body (worms) or hemolysis of red blood cells (malaria), excessive iron loss in bleeding including excessive menstruation and frequent childbirth, Consumption of foods low in iron sources is not enough with the consumption of blood-boosting tablets (TTD) as recommended. (Ministry Of Health, 2015).

Physical characteristics or signs and symptoms that appear in a person with anemia are related to the speed of the decrease in hemoglobin levels, because the decrease in the level affects the capacity to carry oxygen, it will cause symptoms of fatigue and drowsiness, and there are signs of hypodynamic conditions such as a strong pulse and heart palpitations in mild activity, and concentration begins to decrease. (Dieny et al., 2021)

The impact of anemia seen in adolescents is decreased concentration, anemia sufferers cause hemoglobin to not function properly. Hemoglobin cannot carry oxygen to the brain. As a result, they will experience symptoms of dizziness and drowsiness, and the patient's concentration will decrease. In addition, sufferers become unproductive due to the symptoms caused by anemia. This causes antibodies to decrease in people with anemia. In addition, anemia can affect the function of the daughter's blood cells to that it lowers the invading organism. (Utami et al., 2021)

Adolescent

Adolescence is a period in which individuals experience development when the first time an individual shows signs of secondary sexual maturity until the time the individual reaches sexual maturity. The definition of WHO is the population with an age period of 10-19 years. The Ministry of Health categorises

the adolescent phase into three segments: early adolescence (10-13 years), middle adolescence (14-16 years), and late adolescence (17-19 years). Meitria et al. (2020).

Adolescents are particularly susceptible to anaemia, notably iron deficiency, due to their rapid growth during this developmental stage. During growth, the body requires a substantial quantity of nutrients, including iron. Anaemia develops when the iron required for growth is insufficient compared to the body's production.. It even has a detrimental impact on children's health in the form of growth and development disorders, decreased learning ability, thereby decreasing school learning achievement. Anemia is not contagious but still dangerous. (Citrikesumasari, 2012).

Health Education

Health education constitutes a component of comprehensive health initiatives (promotive, preventive, curative, and rehabilitative) aimed at enhancing healthy lifestyle practices. Health education is fundamentally an initiative aimed at encouraging individuals, groups, and communities to adopt healthy behaviours. Operationally, health education encompasses all actions aimed at enhancing the knowledge, attitudes, and behaviours of the community about the maintenance and improvement of their health. Notoatmojo, 2003 inside (Martina Pakpahan et al., 2021)

Media Audiovisual

Audiovisual media is an intermediate media whose absorption through sight and hearing in the form of sound (audio) and images (visual) is able to build conditions that can make students, young women, and others to acquire knowledge, skills, or attitudes that are used to help achieve learning goals. Health promotion media is a useful suggestion to display the message or information that you want to convey to the communicator. Health promotion media aims to provide the target with knowledge that can then change the target's behavior to be more positive while improving the quality of life. (Notoatmodjo, 2005) in (Jatmika et al., 2019)

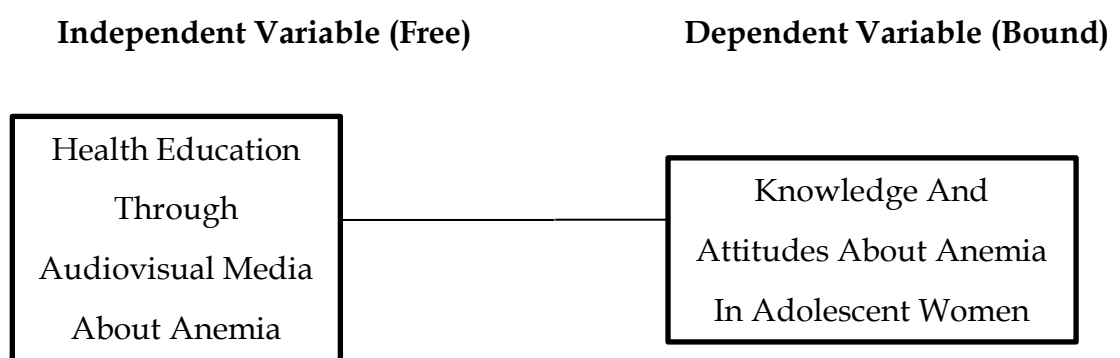


Figure 1. Conceptual Framework

METHODOLOGY

This study employs a quantitative research methodology utilising a Pre-Experimental design, namely the One Group Pre-Test and Post-Test Design

methods. This investigation was conducted at MTS Sabilarrasyad Samarinda during the course of one day in June 2023. This study comprises a population of 117 students. This study employs a Simple Random Sampling approach.

The quantity of research samples was calculated using the Slovin formula, applying a margin of error of 5%, subsequent to the withdrawal of the sample. Criteria for inclusion: Seventh-grade adolescent girls at MTS Sabilarrasyad Samarinda who are active participants are willing to engage in the entire research series, in contrast to those respondents who were absent throughout the study and did not finish the questionnaire.

The examined variables include independent variables, specifically health education via audiovisual media about anemia, and dependent variables, namely knowledge and attitudes of adolescent girls. Data collection is conducted with primary data. Primary data gathered by surveys that have undergone comprehensive validation and reliability testing. This study employs research instruments to assess knowledge and attitudes among adolescent girls.

This study was conducted following the acquisition of an Ethical Clearance Certificate from the Research Ethics Committee (KEPK) of the Ministry of Health of East Kalimantan, ensuring protection for institutions, research subjects, and the research outcomes. Prior to initiating data collection, all potential respondents selected for the research will be provided with a signed consent form (Informed Consent) to indicate their willingness to participate. This study employed the Wilcoxon test for data analysis, yielding a p-value of <0.05 , which indicates a significant impact of health education utilising audiovisual media on the knowledge and attitudes regarding anaemia among adolescent girls at MTS Sabilarrasyad Samarinda. The analysis yielded a p-value greater than 0.05, indicating no impact of health education utilising audiovisual medium on the knowledge and attitudes of teenage females at MTS Sabilarrasyad Samarinda about anemia.

RESEARCH RESULTS

Univariate Analysis

Characteristics Respondent

Table 1. Frequency Distribution Of Respondent Characteristics

No.	Variable	F	%
1.	12 Years	8	15,7%
2.	13 Years	39	76,5%
3.	14 Years	4	7,8%
Sum		51	100%

Table 1. showed that with a total of 51 respondents based on age, most of the 8 respondents (15.7%) were 12 years old, most of the 39 respondents (76.5%) were 13 years old, and 4 respondents (7.8%) were 14 years old.

Identifying Knowledge in Young Women When Pre-Test and Post-Test

Table 2. Knowledge of Students During *Pre-Test* and *Post-Test*

Knowledge Test	Sum (n)		
	Less (1)	Enough (2)	Good (3)
Pre-Test	34 (66,7%)	16 (31,4%)	1 (2,0%)
Post-Test	-	-	51 (100%)
Average			50 (98%)

Table 2. shows that most of the respondents who had knowledge before the *Pre-Test*, namely 34 female respondents (66.7%), lacked knowledge, while 16 female students (31.4%) had sufficient knowledge, and only 1 (2.0%) had good knowledge. In addition, it is known that most of the respondents who have good knowledge at the time of the *Post-Test*, namely 51 students (100%). It is known that there are as many as 50 students (98%) with an average level of knowledge that has increased.

Identification of Attitudes in Adolescent Women During Pre-Test and Post-Test

Table 3. Attitude of Students During *Pre-Test* and *Post-Test*

Attitude Test	Sum (n)	
	Negative (1)	Positive (2)
Pre-Test	45 (88,2%)	6 (11,8%)
Post-Test	-	51 (100%)
Average		45 (88,2%)

Table 3. shows that most of the students who had an attitude before the *Pre-Test* were 45 students (88.2%), which was the negative category, while the positive category at the time of the *Pre-Test* was 6 female respondents (11.8%). At the time of the *Post-Test*, there were 51 female respondents (100%). Which shows that there are 45 female students (88.2%) with an average attitude with a positive category.

Bivariate Analysis *Knowledge Analysis*

Table 4. The Effect of Health Literacy on Anemia With Audiovisual Media On Knowledge in Adolescent Women.

Knowledge Test	Sum (n)			P-Value
	Less (1)	Enough (2)	Good (3)	

Pre-Test	34 (66,7%)	16 (31,4%)	1 (2,0%)	0.000
Post-Test	-	-	51 (100%)	0.000
Average			50 (98%)	

Table 4. shows that there is an increase in knowledge with scores before the *pre-test* in the poor category of 34 students (66.7%), 16 students in the sufficient category (31.4%), and 1 student in the good category (2.0%). Meanwhile, after the *Post-Test*, there was an increase in knowledge to be good by 51 students (100%). This shows that the level of knowledge is good, which is 50 students (98%). It is known that the results of the analysis with the *Wilcoxon* test show a *P-Value* of 0.000 ($p < 0.05$).

Attitude Analysis

Table 5. The Effect of Health Education on Anemia With Audiovisual Media on Attitudes in Adolescent Women

Attitude Test	Sum (n)		P-Value
	Negative (1)	Positive (2)	
Pre-Test	45 (88.2%)	6 (11.8%)	0.000
Post-Test	-	51 (100%)	0.000
Average		45 (88,2%)	

Table 5. It shows that there is an increase in attitudes with scores before the *Pre-Test* with a negative category of 45 students (88.2%) and a positive category of 6 students (11.8%). Meanwhile, after the *Post-Test*, there was an increase in attitudes with a positive category, namely 51 female students (100%). This shows that the average attitude is 45 female students (88.2%) in the positive category. It is known that the results of the analysis with the *Wilcoxon* test show that the *p-value* is 0.000 ($p < 0.05$).

DISCUSSION

Characteristics Respondent

The survey indicates that the majority of the 51 respondents are aged 13 years. The demographic profile of the respondents indicated that 15.7% were 12 years old, 76.5% were 13 years old, and 7.8% were 14 years old, comprising a total of 51 respondents.

This research aligns with Aulia Meidina Sulistyowati's findings, which indicated that 19.4% of students aged 12 to 13 years, equating to 7 individuals,

were seen. Age in an individual can induce alterations in different dimensions, including physical and psychological characteristics. (Sulistyowati et al., 2019).

Early adolescence is the period during which a child transitions towards adulthood, a stage that cannot be precisely defined. Early adolescence occurs between the ages of 12 and 15 years. During this period, adolescents develop the ability to acquire and utilise knowledge effectively as cerebral development reaches its zenith. The neural system responsible for information processing develops swiftly. (Sary Yessy Nur Indah, 2017).

Results of Analysis of The Influence of Health Education on Anemia With Audiovisual Media on Knowledge in Adolescent Girls Between Pre-Test and Post-Test

Based on the assessment of students' knowledge prior to and following the intervention. It is acknowledged that only 1 responder (2.0%) demonstrated proficient understanding during the Pre-Test. Furthermore, it is acknowledged that all 51 responders with proficient knowledge at the Post-Test stage are female students (100%). It may be inferred that the number of respondents with proficient knowledge improved by 50 female students following health education on anaemia delivered through audiovisual medium. According to Table 1. The analytical results indicate a P-Value of 0.000 ($P < 0.05$).

This indicates that health education delivered through audiovisual medium affects respondents' understanding both prior to and during the intervention. The statistical analysis indicated that health education utilising audiovisual media significantly impacted the knowledge of anaemia among adolescent females at MTS Sabilarrasyad Samarinda.

Health education is a mode of socialisation typically conducted through lectures and presentation media, which are seen as inefficient. Particularly within the youth cohort. Consequently, the utilisation of audiovisual medium will captivate interest and concentrate the target audience. Audiovisual media is frequently utilised as an innovative tool in health teaching. (Hazanah Sri, Nino Adib C., 2021)

This research aligns with Rindasari Munir's findings, which indicate that prior to receiving health education, 22 adolescent girls, or 59.5%, possessed inadequate knowledge about anaemia. Following the health education intervention, the results revealed that 25 adolescents, or 67.6%, demonstrated adequate knowledge. Consequently, it is administered from a young age to avert anaemia. (Munir et al., 2022)

Results of Analysis of The Influence of Health Education on Anemia With Audiovisual Media on Attitudes in Adolescent Girls Between Pre-Test and Post-Test.

Based on the identification of student attitudes before and after the intervention, it was known that most of the respondents who had an attitude with a positive category during the *pre-test* were as many as 6 female respondents (11.8%). In addition, it is known that most of the respondents who have an attitude with a positive category at the time of the *post-test* are 51 female students (100%). From this, it can be concluded that the number of respondents who have attitudes

with positive categories increased by 46 students after being given health education about anemia with audiovisual media.

Referencing Table 2. The analytical results indicate a p-value of 0.000 ($p < 0.05$) from the statistical tests. This indicates that health education delivered through audiovisual medium affects respondents' attitudes both prior to and during the intervention..

This research is in line with Nur Asmawati, adolescent girls have 75% positive attitudes towards anemia before counseling and adolescent girls have 25% negative attitudes before counseling. Meanwhile, after being given counseling, the positive attitude of adolescent girls was 100%. (Asmawati et al., 2020).

Health education must be provided to communities, groups, and individuals, through health workers and cadres who are able to help a group of people around their environment. The existence of health promotion media is one of the means or efforts that can be used to display health or information that wants to be conveyed to the public in order to increase knowledge and attitudes which are ultimately expected to bring change in a positive direction. (Hazanah Sri & Noorma, 2023).

Increased knowledge can have a beneficial effect on attitudes. The provision of health promotion accompanied by motivation from community leaders plays a very important role in changing attitudes to provide encouragement to the community and increase knowledge and attitudes and be able to improve their health status. Personal experiences, the influence of others, the use or practice of culture, exposure to mass media, educational and religious institutions and emotional factors can all play a role in changing attitudes. (Bernadetha et al., 2020)

CONCLUSIONS AND RECOMMENDATIONS

Based on the results of the study, it can be concluded that:

1. There an effect of health education about anemia with audiovisual media on knowledge and attitudes in adolescent female respondents which showed that the *P-Value* was 0.000 ($p < 0.05$). This shows that the results of the study have a significant influence.
2. There was an effect before the *pre-test* of the poor category as many as 34 students (66.7%) and after the *post-test* there was an increase in the level of knowledge to the good category of 51 students (100%). It is known that as many as 50 students (98%) with an average level of knowledge increased. After being given health education about with audiovisual media.
3. There was an influence before the *pre-test* as many as 45 students (88.2%) and after the *post-test* there was an increase in attitudes after the *post-test* as many as 51 students (100%). Which shows that the average level of attitude is 45 female students (88.2%) with a positive category.

Based on the results of the study, it is known that there is an influence of health education about anemia with audiovisual media on knowledge and

attitudes in adolescent girls at MTS Sabilarrasyad Samarinda. Therefore, it is hoped that adolescent girls will be able to increase iron intake from food, regularly consume blood-boosting tablets (TTD), increase the consumption of fruits and vegetables as a source of vitamin C, and increase the understanding of anemia further.

FURTHER STUDY

The author suggests that this research may serve as a reference in scientific advancement and contribute as an extra topic in the field of health. It is anticipated that this can serve as a reference and consideration for future study, particularly with anaemia in adolescent females, and that subsequent studies may expand the research variables beyond those currently established.

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