

The Effect of Leaflet Intervention on the Level Knowledge Adolescents Girl with the Incidence Anemia in Junior High School Jepara

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Abstract. Background. Anemia is still a major public health problem in the world. Indonesia become one of the countries experiencing a triple burden of malnutrition and one of them is anemia. The results of the 2019 WHO for Indonesia show that the proportion of anemia in adolescents is 31.2 %. The incidence of anemia in women is higher (23.9%) compared to men (18.4%) Education, especially about anemia problem in adolescents, play an important role in the emergency response for the health reproduction of adolescents. **Objective.** To determine the effect of nutrition education using a leaflet on the improvement of anemia knowledge in adolescents girl in junior high school Jepara . **Method.** This research used the quick experimental method. Designs: Pre-post test group design involving 60 adolescents students. **Results.** The results showed a strong correlation between respondents knowledge and nutrition education using leaflet media ($p=0,02$) with alpha 0,05 ($p=0,02<0,05$). **Conclusion.** There is an effect of education using on leaflet anemia knowledge adolescents girl in Junior high school Jepara.

Key Words. Knowledge level, Anemia, Leaflet

INTRODUCTION

Anemia is still a major health problem worldwide and one of the causes is iron deficiency. (1) The results of the 2019 WHO for Indonesia show that the proportion of anemia in adolescents is 31.2 %. (1) The incidence of anemia in women is higher (23.9%) compared to men (18.4%) (Health Research and Development Agency, 2013). The Indonesian government then attempted to prevent anemia by issuing Circular Letter number HK 03.03/V/ 0595/2016 regarding the provision of blood-added tablets to adolescent girls with a target of 58% by 2024. (3) Furthermore, based on reports on the results of basic health research (Riskesdas 2018) there are still 23.8% of adolescents who do not get Blood Add Tablets. (4) So there is a need for maximum action from the government, the community, and especially health workers.

Lawrence Green's theory states that one of the predisposing factors in changing health behavior is the level of knowledge. Lack of knowledge about anemia prevention in adolescent girls will affect the level of adherence to consuming blood-added tablets. This underlies the need to make efforts to increase the knowledge of adolescents about anemia such as by providing counseling. Counseling is not only done with the lecture method but can be combined with various media such as leaflets. (5)

Such control efforts will certainly have a negative impact, including the crisis of child poverty, learning, security and child care, and nutrition. The nutritional crisis experienced by Indonesia is known as the triple burden of malnutrition, including undernutrition, overnutrition, and the incidence of anemia. The Directorate General of Public Health stated that education for adolescents, especially related to anemia, is very important in preparation for becoming women of childbearing age, getting married, and becoming healthy pregnant women. (6)

Mousa et al in mentioning that iron deficiency are associated with low achievement in school, even this achievement will be much lower if iron deficiency anemia is experienced by children. Other studies have shown that iron deficiency anemia has an impact on cognitive function disorders such as being easily tired, less than optimal memory, decreased concentration, low academic achievement, and or decreased ability to solve problems. In addition, considering that adolescents will become mothers later, anemia that occurs will increase the risk of death of pregnant women, high incidence of low birth weight (LBW), and high incidence of perinatal mortality. (7)

One of the reasons for the high iron needs of adolescent girls is iron loss due to bleeding during menstruation. The high risk of anemia in adolescent girls is influenced by changes in bad eating habits that lead to inadequate iron intake and a high intake of nutrients that can inhibit iron absorption. (8) This is also in line with the results of research which states that generally adolescents often go on a weight loss diet to appear slimmer so they tend to limit their daily food intake and cause changes in eating habits and have an impact on inadequate daily iron intake. (9)

Lack of iron intake in adolescents can be caused by a lack of knowledge of adolescents about food sources of iron and the role of these substances for adolescents. Previous research has stated that the increasing incidence of anemia in adolescents due to poor eating habits is influenced by low knowledge regarding anemia and nutrition education can make adolescents' behavior better in adjusting iron intake to their needs through increasing knowledge about anaemia. Previous studies have shown that knowledge, attitudes, and practices in adolescent girls with anemia have improved through nutrition education interventions. (10)

Knowledge of nutrition is of essential importance for a person in choosing a healthy lifestyle free from disease. Efforts to deliver educational materials will be easier to accept by using interesting educational media. (11)

One of the educational media using leaflets has been widely developed as an effort to increase one's motivation in receiving information. The principle in the development of educational media, namely one can receive knowledge through the five senses. Experts state that the transmission of knowledge to the brain is mostly through the sense of sight (about 75–87%) compared to other senses (13–25%). (10) The use of media in the process of delivering material is very diverse, such as through sound media (audio), electronic media, and print media. Print media such as posters, leaflets, and pocketbooks are considered more effective in presenting information and nutrition education because static media, in the form of a visual message, consists of a number of words and pictures with color arrangements. Print media that can be used and considered effective in nutrition education include comics and leaflets. (5)

Leaflets are media in the form of folded sheets for the delivery of health information or messages. Increased knowledge of elementary school students related to the dangers of smoking. The results of other studies show that there is an influence on the knowledge, attitudes, and practices of mothers in providing vegetables and fruit for families after being given nutrition education through leaflets. (9)

Based on the report on the achievement of the Nutrition Program at the Mlonggo Health Center, it was found that the prevalence of the percentage of adolescents who received iron tablets had not reached the target of 5% coverage. (12) The results of the initial survey of researchers found that 10% of the 60 students at Junior High School Jepara experienced several problems. signs of anemia-like symptoms such as weakness, fatigue, dizziness, and difficulty concentrating at school. Based on in-depth interviews, students have never received socialization related to the dangers and prevention of anemia. The lack of knowledge and the lack of information obtained regarding anemia will have an impact on decreasing learning achievement and in the long term can reduce the quality of junior high school Jepara.

This study aims to determine the effect of leaflet intervention on increasing knowledge of anemia in adolescent girls at junior high school Jepara. Therefore, researchers are interested in analyzing the level of knowledge about anemia by using leaflets on anemia in adolescent girls at junior high school Jepara.

METHODS

This research is an analytical quantitative type with a quasi-experimental design with a pre-post test group design and a paired T-Test. The study was conducted by conducting a pretest before the intervention and then a posttest after the intervention.

The population in this study, namely all students of junior high school Jepara totaled 100 students. Sampling was done by accidental sampling technique. The research inclusion criteria included 1) Anemia adolescents girl students; 2) Willing to be a respondent by filling out an informed consent; and 3) Willing to fill out a questionnaire. Exclusion criteria included 1) Darun Najah Junior High School students, Srobyong Village, Mlonggo District, Jepara Regency class VII, VIII, and IX who were not present when the study was conducted; 2) Resigned at the time of the study. The sample size in this study was 60 respondents and respondents who participated in data collection activities to the final stage.

Analysis of the data used, namely univariate and bivariate analysis. Univariate analysis was conducted to describe the characteristics, namely the age and class of respondents. Bivariate analysis was conducted to determine the effect of the independent variable, namely the material about anemia through the media provided, namely leaflets, on the dependent variable, namely the level of knowledge about anemia in adolescent girls.

The research was carried out in August 2022 which was carried out directly. The place of research was carried out at Darun Najah Middle School, Srobyong Village, Mlonggo District, Jepara Regency.

RESULTS

1. Characteristics of Respondents

The ages of the respondents involved in this study ranged from 13-15 years. 50% is dominated by the age of 14 years. The average age of the respondents is 13 and 15 years. The characteristics of the respondents involved in this study were based on class, namely 10 student from class VI, 30 students from class VIII, and 20 students from class IX (Table 1).

Table 1. Characteristics of Respondents

Characteristics	Frequency	Percentage
Ages		
13 years old	20	33,33%
14 years old	30	50%
15 years old	10	16,67%
Class		
VII	10	16,67%
VIII	30	50%
IX	20	33,33%

2. Knowledge Distribution of Anemia

Questions given through a questionnaire related to knowledge of anemia are then given a score (score 1 if the answer is correct and score 0 if the answer is incorrect) and the value is determined. After that, the scores obtained will be divided into three categories including poor, sufficient, and good knowledge (less <40, enough 50-70, good >80). The distribution of the respondents' knowledge of anemia category data can be seen in table

2. In addition, the distribution of anemia knowledge data on respondents based on the average value before and after the intervention can be seen in table 2.

The respondents' knowledge of anemia based on pretest data was mostly in the poor category, which was 83.33% (table 2). After the intervention was given, it was found that there was an increase in the knowledge of anemia in the respondents into a good category, namely 77.3% based on the post-test results. The results of the Wilcoxon test showed that there was a significant difference in the proportion of anemia knowledge categories before and after the leaflet-giving intervention, namely $p=0.02$; $p<0.05$.

Knowledge of Anemia	Material Via Leaflet			
	Pre		Post	
	n	%	n	%
Less	50	83,33	0	0
Enough	10	16,67	10	16,67
Good	0	0	50	83,33
Total	60	100	60	100

Table 2 shows that the average value of respondents' knowledge before the intervention has increased. The average value before being given leaflet material was originally only 33.33%, increasing to 83.33% with a standard deviation of 4.08 at the pretest and 10.9 at the posttest. The lowest score at the pretest, 50 people increased to 0 or no one else had the lowest score at the posttest.

This is in line with the results of Lihayati and Mardiana's research (2019), which shows that there is an increase in the lowest and highest values before (values 40 and 70) and after the intervention (values 70 and 100). (14) In addition, the results of Anggraeni and Fransiske's research (2018) show that there is an increase in the average value before and after the intervention which was originally 50.3 to 85.9. (15)

3. Differences in Knowledge Levels Before and After Intervention

The results of the normality test showed that the pretest and posttest leaflet data were not normally distributed. Therefore, the test used in this study was the Wilcoxon test to determine the difference in the mean value of pre and post-knowledge in adolescent girls. The results of the Wilcoxon test (table 3) showed that there was a significant difference in the value of knowledge before and after the leaflet was given ($p < 0.02$). The results of the analysis showed that there was a significant difference in the pre and post-test scores ($p < 0.02$).

Notoatmodjo (2007) in Fitrianti (2019) states that someone who understands is aware of the perceived stimulus, and is interested in the stimulus so there is an increase in cognitive abilities in the individual. (9)

Table 3 Differences in Respondents' Knowledge Levels Before and After Intervention

Knowledge	min-maks	Median	SD	p
Pretest	30-50	40	4,08	0,02
Posttest	80-100	90	10,9	

The stimulus given in this study was a knowledge intervention using leaflet media. This is in line with the results of this study which showed that the provision of leaflet media had an effect on increasing knowledge of anemia in respondents.

This study is in line with research by Sugiarti and Lindayani (2019), namely, there is a significant difference between knowledge scores before and after being given material about anemia through leaflet media. (5) Other research shows that there is an influence of material through leaflets on the knowledge of SMA Negeri 14 students. Jakarta, which is statistically proven, with a p-value of $0.00 < 0.05$, which means that there is a significant increase after providing education through comics (Hannati et al. 2021).

The increase in knowledge scores is thought to be due to nutritional information received through nutrition education so that children go from not knowing to know. (16)

This is in line with Notoatmodjo, with a statement that knowledge is the result of human sensing or the result of someone's knowledge of objects obtained through the senses possessed such as the senses of sight and hearing. The results of the study in the leaflet group showed that there was a significant difference in knowledge

before and after the media was given. This is in line with the results of previous studies which showed that from the results of the paired t-test on the data before and after the leaflet group intervention, namely 0.000 which indicates there is a difference in knowledge before and after the intervention significantly related to education for students of SMA N 1 Semarang regarding the benefits of counseling with leaflet media for adolescents about anemia. (5) Other studies also showed that based on the results of the paired t-test, there was a significant difference in the knowledge scores of adolescents before and after receiving leaflets. ($p=0.000$) related to knowledge about anemia in SMK 4 Sukoharjo. (17)

CONCLUSION

Based on the results and discussion in this study, the following conclusions can be drawn, in this study, the respondents' age was 13-15 years. There are 20 student's with 13 years old (33.33%), 30 student's with 14 years old (50%), and 10 student's with 15 years old (16.67%).

Respondents consisted of class VII as many as 10 student's (16.67%), class VIII as many as 30 student's (50%), and class IX as many as 20 student's (33.33%). As for the students who have or have never received material via leaflets, namely 0 people (0%) who have received and as many as 60 people (100%) who have never received material via leaflets, this concludes that the school has never delivered material via leaflets, about anemia in adolescent girls.

In this study, there are differences in the value of the level of knowledge, namely the results of the pretest with less knowledge of as many as 50 people (83.33%), enough knowledge 10 person (16.67%) and good knowledge, namely 0 people (0%) while for the results posttest lack of knowledge as much as 0 people (0%), enough knowledge 10 person (16.67%) and good knowledge that is 50 people (83.33%). Significantly after giving material about anemia through leaflets to class VII, VIII, and IX students at junior high school Jepara with a p-value of $0.02 < 0.05$, it shows that there is a difference in the level of knowledge in adolescent girls after being given material about anemia through leaflet media.

DISCUSSION

The role of leaflet media as a traditional health promotion media is still effectively used even in the current digital era. Health information leaflets in the form of folded sheets that contain information in the form of sentences, pictures, or both in simple and easy-to-understand language, attractive titles, and text and pictures that are tailored to the target audience. (18)

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