

Original Article



Behavioral Education Strategy for Consuming Iron Supplements for Young Women in Palu City

Ketut Suarayasa*, Elliyane Bangkele*, Miranti*

*Department of Public Health Sciences and Community Medicine, Tadulako, University School of Medicine

Corresponding Author: Ketut Suarayasa

Abstract:

One of the health problems in Indonesia is anemia due to iron deficiency (Iron Nutrient Anemia), especially in adolescents who have not been resolved. One of the factors causing nutritional anemia due to lack of iron intake in food consumed every day which is characterized by hemoglobin (Hb) levels below normal. This study aims to determine the effect of video education on the behavior (knowledge, attitudes, subjective norms, and intentions) of consuming blood-added tablets in adolescent girls at public vocational secondary schools (SMKN) 6 Palu.

This study is a quasi-experimental design with One-group pretest-posttest design aims to assess the effect of certain treatments on a variable without a control group. Researchers also approach the approach through interviews to aspects of the intention (intention) of the important variables that cause behavior.

The results showed that there were variations in the knowledge of young women about iron supplements, which were influenced by background and opportunities to access information. There is an increase in knowledge, attitudes, subjective norms and intentions of young women based on the results of the pre-test and post-test.

Conclusion : there is an effect of education through video on the behavior of consuming iron supplements in adolescent girls at public vocational secondary schools (SMKN) 6 Palu.

Keywords: Educational Video, Iron Supplements, Young Women

Background

One of the health problems in Indonesia is anemia due to iron deficiency (Iron Nutrient Anemia), especially in adolescents who have not been resolved [1]. One of the factors causing nutritional anemia due to lack of iron intake in food consumed every day which is characterized by hemoglobin (Hb) levels below normal [2]. Based on RISKESDAS data in 2018, the prevalence of anemia in adolescent girls is 25% and 17% in WUS [3]. This problem occurs because of the tendency of adolescents to have regular menstrual

cycles every month, and this will be exacerbated if the iron content of daily food is low.

WHO made a recommendation at the 65th World Health Assembly (WHA) which agreed on a comprehensive action plan and target for improving maternal, infant and child nutrition, with a commitment to reduce the anemia rate to fifty percent (50%) of the anemia prevalence rate in Indonesia. WUS in 2025 [4]. Following up on the recommendation from the WHO, the Indonesian government has carried out the prevention of anemia in adolescent girls and WUS

by prioritizing the provision of iron supplements through educational institutions [8].

One of the efforts used in reducing anemia is by consuming iron supplements as stated in the Circular Letter of the Ministry of Health Number Hk. 03.03/V/0595/2016 concerning Administration of iron supplements to Adolescent Girls and Women of Childbearing Age where the method of administration is one (1) tablet dose per week throughout the year [12]

The results of the RISKESDAS data in 2018, it was found that the coverage of consumption of iron supplements in adolescent girls was 76.2%, of the 76.2%, of which 80.9% received iron tablets at school (school children). From the figure of 80.9%, the consumption of iron tablets in adolescent girls 52 items only reached 1.4%, while <52 items reached 98.6%. This shows that young women's awareness is still low on taking iron supplements as an effort to prevent anemia [3].

In Central Sulawesi itself, according to Riskesdas data in 2018, the proportion of teenage girls aged 10 -19 years who received iron supplements was 79.5%. The young women who received the iron supplements got 76.2% of iron supplements at school. The proportion that was obtained and taken was less than 52 tablets as much as 99.3% [13]. That means that only 0.7% of students who get iron supplements spend according to the recommendation, which is 52 items for 1 year.

The purpose of this study was to determine the effect of education with iron supplements videos on the behavior (knowledge, attitudes, subjective norms, and intentions) of adolescent girls in consuming iron supplements at public vocational secondary schools (SMKN) 6 Palu City in 2022.

Method

This study is a quasi-experimental design with One-group pretest-posttest design aims to assess the effect of a particular treatment on a variable without a control group. The number of samples is 100 people, taken by Stratified Random Sampling, namely the selection of samples by taking samples by taking into account the strata (levels) in the population.

The sample in this study were young women at public vocational secondary schools (SMKN) 6 Palu (grades 1,2 and 3. Researchers also carried out a qualitative approach through in-depth interviews on the aspect of intention as an important variable that causes behavior. There were 6 informants, 4 from young women, 1 the person in charge of nutrition at the primary health centre and 1 mentor teacher at SMKN 6 Palu.

Results and Discussion

1. Characteristics of Respondents

The characteristics of respondents are as follows :

Table 1. Frequency Distribution of Respondents Based on Age and Major at SMKN 6 Palu

Characteristics	n	%
Age		
15 year	35	35,0
16 year	47	47,0
17 year	16	16,0
18 year	2	2,0
Ethnic Group		
Kaili	85	85,0
Bugis	7	7,0
Jawa	3	3,0
Etc	5	5,0
Jurusan		
Seaweed Agribusiness	13	13,0
Motorcycle Engineering	3	3,0

Welding Technique	2	2,0
Fishing Vessel Nautics	2	2,0
Computer network Engineering	47	47,0
Hospitality	33	33,0

Source : primary data, 2022

Table 1 above shows that most of the young women aged 16 years (47%), from the Kaili tribe which is the largest ethnic group in Palu (85%) and from the Department of Computer Network Engineering (47%).

2. Research Results

2.1. Pre-Test and Post-Test Results

Before the researcher gave education through video, a pre-test was first conducted to obtain

information about the knowledge, attitudes, subjective norms and intentions of young women towards giving iron supplements. After that, the researchers conducted education through the provision of videos on the consumption of blood-added tablets that were sent to all respondents' cellphones. Young women are given 3 weeks to watch the program, then post-test is done. The results are as follows:

Table 2. Results of Pre-Test and Post-Test Knowledge, Attitudes, Subjective Norms and Intentions towards Consume Iron Supplements in Young Women at SMKN 6 Palu

Variable	N	Pre-test				
		Min	Mean	Max	SD	Median
Knowledge (score = 10)	100	1	6,53	10	1,63	7,0
Attitude (score = 40)	100	19	31,08	37	3,18	31,0
Subjektive Norm (score = 40)	100	19	28,11	37	3,32	28,5
Intention (score = 10)	100	1	7,5	10	2,10	8,0
Variable	N	Post-test				
		Min	Mean	Max	SD	Median
Knowledge (score = 10)	100	6	8,95	10	0,89	9,0
Attitude (score = 40)	100	34	38,57	40	1,52	38,5
Subjektive Norm (score = 40)	100	32	38,03	40	1,72	38,0
Intention (score = 10)	100	6	8,79	10	1,06	9,0

Source : primary data, 2022

Table 2 above shows that the level of knowledge, attitudes, subjective norms and intentions of young women at SMKN 6 Palu regarding the administration of iron supplements is quite varied. This shows that the young women of SMKN 6 have varying levels of knowledge, depending on their access to information and their concern for health. The desire to access this information is also influenced by the intention variable.

This is in accordance with the results of an in-depth interview with one of the informants who

received a lot of information about blood-added tablets from his mother who works as a midwife at the primary health centre. Another informant stated that a lot of information was obtained from social media such as YouTube, from teachers at school and from socialization at school when he was in junior high school.

There is an increase in knowledge, attitudes, subjective norms and intentions from pre-test to post-test. It is recommended that the educational video be watched regularly (once a day) to

increase knowledge and awareness of taking iron supplements regularly once a week.

2.2. The Effect of Education on Behavior Change

To determine the effect of education on giving iron supplements videos to young women at

SMKN 6 Palu, a statistical test was conducted. The test used is the Wilcoxon Signed Ranks test. This test option was chosen after the data normality test was carried out, where the results showed that the data were not normally distributed. The results are as follows:

Table 3. The Effect of Education through Video on Knowledge, Attitudes, Subjective Norms, and Intentions on Consume Iron Supplements in Young Women at SMKN 6 Palu

Variable		Test Result	
		Mean Score \pm SD	<i>p</i> *
Knowledge			
	<i>Pretest</i>	6.53 \pm 1.6	0,000
	<i>posttest</i>	58,95 \pm 0.9	
Attitude			
	<i>Pretest</i>	31.08 \pm 3.2	0,000
	<i>posttest</i>	38.57 \pm 1.5	
Subjektive Norm			
	<i>Pretest</i>	28.11 \pm 3.3	0,000
	<i>posttest</i>	38.03 \pm 1.7	
Intention			
	<i>Pretest</i>	7.5 \pm 2.1	0,000
	<i>posttest</i>	8.79 \pm 1.1	

Source : primary data, 2022

* Wilcoxon Test

The results of the Wilcoxon test showed that education through video iron supplements had an effect on all behavioral variables in this study (knowledge, attitudes, subjective norms and intentions) with a *p* value of <0.05.

The results of the interview with the supervisor of SMKN 6 said that it was easier for students to capture information through live shows (videos, pictures, etc.). This was confirmed by the person in charge of nutrition at the Mamboro Public Health Center. So that one of the health promotion strategies carried out by the puskesmas is to use tools such as flipchart sheets or short video shows such as educational media made by researchers.

Education through video is more easily accepted by the senses so that increased knowledge of young women who are respondents can be well received. A person's knowledge of objects has different intensities or levels (Notoatmodjo, 2010). Attitudes are in line with knowledge,

where knowledge changes, attitudes will also change. Attitude is a readiness to react to objects in a certain environment as an appreciation of the object.

Subjective norms are beliefs about the opinions of others regarding agreeing or disagreeing with the actions to be taken (Prihastuti, 2019). Meanwhile, intention is the final variable that is measured in this study and is an important factor that influences the occurrence of an action.

The theory put forward by Fishbein & Ajzen, 1975 (Theory of Reasoned Action) provides an illustration that the behavioral components are in operational items. Behavior is observed directly and is under one's control, where the target behavior must be clearly selected and identified. By paying attention to differences in the variables of knowledge, attitudes, subjective norms and target intentions, it can be estimated whether there is a change in behavior.

Conclusions and recommendations

There is an effect of education through video on behavioral changes (knowledge, attitudes, subjective norms and intentions) of consuming iron supplements in adolescent girls at public vocational secondary schools (SMKN) 6 Palu.

Suggestion

In order to maintain the behavior of consuming iron supplements for young women at public vocational secondary schools (SMKN) 6 Palu, it is necessary to have support from teachers at public vocational secondary schools (SMKN) 6 and the Mamboro Health Center.

Reference

1. WHO (World Health Organization), "WHO | Millennium Development Goals (MDGs)," *Who*, 2016.
2. Permenkes RI, "Peraturan Menteri Kesehatan Republik Indonesia Nomor 88 Tahun 2014 Tentang Standar Tablet Tambah Darah Bagi Wanita Usia Subur Dan Ibu Hamil," *Lincolin Arsyad*, 2014.
3. Kementrian Kesehatan RI, "Riset Kesehatan Dasar Indonesia," *Badan Penelitian dan Pengembangan Kesehatan*. 2018.
4. Kemenkes RI, *Kemenkes RI. Profil Kesehatan Indonesia 2017. Data dan Informasi. Kementerian Kesehatan RI; 2018*. 2018.
5. A. Widiastuti and R. Rusmini, "KEPATUHAN KONSUMSI TABLET TAMBAH DARAH PADA REMAJA PUTRI," *J. Sains Kebidanan*, vol. 1, no. 1, 2019, doi: 10.31983/jsk.v1i1.5438.
6. Kemenkes RI, "Rencana Strategis Kementerian Kesehatan Republik Indonesia 2015-2019," *Kementeri. Kesehat. RI*, 2015.
7. Kemenkes RI, "Permenkes RI No 88 Tahun 2014 tentang Standar Tablet Tambah Darah Bagi Wanita Usia Subur dan Ibu Hamil," *Implement. Sci.*, 2014.
8. BKKBN, "Survei Demografi Dan Kesehatan : Kesehatan Reproduksi Remaja 2017," *Badan Kependud. dan Kel. Berencana Nas.*, 2017.
9. "The Effect of Reproductive Health Gymnastics on Hemoglobin Levels of Female Adolescents," *Medico-Legal Updat.*, 2020, doi:10.37506/mlu.v20i4.2159.
10. K. K. Ri, "Surat Edaran Nomor HK.03.03/V/0595/2016 tentang Pemberian tablet tambah darah pada remaja putri dan wanita usia subur," *Kementarian Kesehatan RI*. 2016.
11. Dinas Kesehatan Provinsi Sulawesi Tengah, "Profil Kesehatan Provinsi Sulawesi Tengah Tahun 2018," *Profil Kesehat. Provinsi Sulawesi Teng. Tahun 2018*, 2018.
12. Dinas Kesehatan Kota Palu, "Profil Kesehatan Kota Palu 2018," 2018.
13. C. M. Chaparro and P. S. Suchdev, "Anemia epidemiology, pathophysiology, and etiology in low- and middle-income countries," *Annals of the New York Academy of Sciences*, vol. 1450, no. 1. 2019, doi: 10.1111/nyas.14092.
14. S. Notoatmodjo, *Promosi Kesehatan dan Perilaku Kesehatan*. 2012.
15. S. Notoatmodjo, *Kesehatan Masyarakat Ilmu & Seni*. 2011.
16. K. Y. N. Ng, "The moderating role of trust and the theory of reasoned action," *J. Knowl. Manag.*, vol. 24, no. 6, 2020, doi: 10.1108/JKM-01-2020-0071.