

PENGARUH PROMOSI KESEHATAN DENGAN VIDEO EMO DEMO TERHADAP PEMILIHAN BAHAN MAKANAN YANG MENGANDUNG ZAT BESI PADA SANTRIWATI MA DI YOGYAKARTA

The Effect of Health Promotion Using Emo Demo Video on the Selection of Food Contains Iron for Anemia Prevention in Adolescents: Study at Islamic Senior High School in Yogyakarta

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ABSTRACT

Background. Emotional Demonstration (Emo Demo) is a technique to educate the public through the latest approach from the theory of Behavior Center Design as a reference. This strategy can be an alternative to help young women in choosing food ingredients to prevent anemia. Given the adverse effects of anemia, it is necessary to overcome them. **Objective.** This study aims to assess the effect of health promotion through Emo Demo video media on the selection of foods containing iron for the prevention of anemia in adolescent girls. **Method.** The research design was a pre-post test with a control group design, and quasi-experimental design. The research design used in this research is "Control Group Design". In this study, there were 2 groups, namely the intervention group using the Emo Demo video method and the control group using e-leaflets. **Results.** Emo Demo video promotion has a positive effect on knowledge (p value 0.000), attitudes (p value 0.000), and behavior (p value 0.000) in adolescent girls to prevent anemia compared to e-leaflets. **Conclusion.** Emo Demo video as a learning media is more effective in increasing knowledge, attitudes, and behavior in choosing foods high in iron in adolescent girls than in the group using e-leaflets. It is important to provide continuous Emo Demo videos and do the monitoring of adolescent girls to prevent anemia.

Keywords: adolescent girls, anemia, attitude, behavior, emo demo, knowledge

ABSTRAK

Latar Belakang. Emotional Demonstration (Emo Demo) merupakan suatu teknik untuk mengedukasi publik lewat pendekatan terbaru dengan acuan teoritis dari *Behavior Center Design*. Strategi ini dapat menjadi alternatif untuk membantu remaja putri dalam memilih bahan makanan untuk mencegah anemia. Mengingat adanya dampak yang merugikan dari anemia, maka perlu upaya untuk menanggulangnya. **Tujuan.** Penelitian ini bertujuan menilai pengaruh promosi kesehatan melalui media video Emo Demo terhadap pemilihan makanan mengandung zat besi untuk pencegahan anemia pada remaja putri. **Metode.** Desain penelitian adalah *pre-post test with control group design* dengan rancangan kuasi-eksperimental. Desain penelitian yang digunakan dalam penelitian ini adalah "*Control Group Design*". Pada penelitian ini terdapat dua kelompok,

yaitu kelompok intervensi dengan metode video Emo Demo dan kelompok kontrol menggunakan *e-leaflet*. **Hasil.** Promosi video Emo Demo berpengaruh positif terhadap pengetahuan (p value 0,000), sikap (p value 0,000), dan perilaku (p value 0,000) remaja putri dalam mencegah anemia dibanding dengan *e-leaflet*. **Kesimpulan.** Video Emo Demo sebagai media pembelajaran lebih efektif meningkatkan pengetahuan, sikap, dan perilaku pemilihan bahan makanan tinggi zat besi pada remaja putri dibandingkan dengan kelompok yang menggunakan *e-leaflet*. Pemberian penyuluhan multimedia berkelanjutan dan monitoring remaja putri diperlukan untuk mencegah anemia.

Kata kunci: remaja putri, anemia, sikap, perilaku, emo demo, pengetahuan

INTRODUCTION

Adolescent girls have a higher risk of anemia than young men. The first reason is that every month young women experience menstruation. The volume of blood lost during menstruation ranges from 25-30 cc per month. This amount reflects an iron loss of 12.5-15 mg per month or 0.4-0.5 mg per day for 28 days. The second reason is that young women often take care of their appearance, they want to stay slim or thin, so they end up on a diet and reduce food portions. A diet not balanced with the body's nutritional needs will cause a lack of essential nutrients, such as iron.¹ Lack of behavior in preventing anemia is protecting against risks, including the consumption of Fe tablets and how to take vitamin C in addition to supplementation along with Fe tablets.

Anemia in adolescent girls has an impact on growth and development, resistance to infectious diseases, activity, concentration, and intelligence as well as capture power. As a mother-to-be, adolescent girls need more iron so that deficiency does not occur before pregnancy. If these needs are not met, it will have an impact on the birth of the baby, including premature birth, abnormal birth, low birth weight, and even maternal mortality.² Therefore, the problem of anemia must be prevented and overcome since teenagers because they will become pregnant women later.³

The prevalence of anemia in Special Region of Yogyakarta Province with a target of 1500 young women in 5 regencies and city

showed that 19.3 percent of young women have anemia (Haemoglobin level below 12 g/dl). They are at risk of chronic energy deficiency (CED) with mid upper arm circumference (MUAC) values in Indonesia under 23.5 cm as much as 46 percent.⁴ Based on the Decree of the Minister of Health of the Republic of Indonesia (PERMENKES) in 2010 the roles of professional midwives include providing services for adolescents, namely providing counseling and informing about reproductive health. This activity was carried out with the aim of adding insight along with education in the health sector as well as counseling about anemia experienced by adolescents.

Extension media have various types, where in the determination, adjustments should be made to the audience criteria so that the things that will be conveyed can be obtained with full effectiveness.⁵ Research and counseling in improving knowledge, attitudes, and behavior have been carried out. Emotional Demonstration (Emo Demo) is a technique to educate the public through the latest approach with reference to the theory of Behavior Center Design (BCD). The theory has the principle that behavior can only be changed into a response to something new, challenging, surprising or there is interest in it. This method uses various methods that are provocative and imaginative in order to achieve changing behavior in terms of public health.⁶ In addition, e-leaflet media is used as a medium for health education because it is good for the community, especially students, who almost all

of them use technology. The goal is that the media is adjusted and learned independently by the user, they can find out the contents while relaxing, the information can be shared with friends and family, provide more detailed information that cannot be given verbally or minimize the need for recording.⁷

Research conducted by Anifah⁸ on the Effect of Health Education through Video Media on Knowledge about Anemia in Young Women found that there was an increase in knowledge from 7 to 17 respondents after being given health education through videos. There is a statistical difference in the average level of knowledge of respondents before and after being given health education through video. In addition, another study results showed⁹ that there was an increase in the average score of knowledge and attitudes of adolescents about anemia before counseling with video media and without media.

This strategy aims to provide health promotion related to anemia prevention with the Emo Demo video media to provide knowledge and change the behavior and attitudes of teenagers. This health promotion is expected to be an effective method for teenagers so it can improve the teenagers' health status.

METHODS

The research design was a pre-post test with a control group design and a quasi-experimental design. The variables in this study were Emo Demo video media and e-leaflet media as independent variables, and knowledge, attitude, behavior as dependent variable. In this study, there were two groups, namely the intervention group with the Emo Demo video method and the control group using e-leaflet. These two groups lived in different dormitories so there was very little possibility of interaction. The study began with an initial test (pre-test) regarding attitudes, behavior, and knowledge of anemia which was given to two groups, before being given

treatment for one month. After the treatment, the two groups were given a final test (post-test) regarding attitudes, behavior, and knowledge of anemia.

The study was conducted at Madrasah Aliyah Ali Maksum as an intervention group and SMA Ali Maksum as a control group which was carried out from August–November 2021. The choice of research location was supported by previous research which stated that 65 percent of the female students of House's Q Pondok Pesantren Ali Maksum Al Munawir Krapyak were anemic. In the preliminary study, it was found that two female students already knew about anemia, while 8 of them did not have knowledge about anemia.¹⁰ The population of this study was all female students at Madrasah Aliyah Ali Maksum. A total of 90 students participated in this study, divided into 45 students in the intervention group and 45 students in the control group. The sample was selected using purposive sampling. Inclusion criteria are students of class XI MA and SMA Ali Maksum who are willing to be respondents, get permission from parents or guardians, and students watch the Emo Demo video for 5–7 minutes duration until it's finished. Exclusion criteria are the respondent withdrew and they do not watch the Emo Demo video or do not read e-leaflet about choosing the right food ingredients for anemia prevention. The students who are sick or absent will automatically be disqualified from this study.

This research has received ethical approval from the Ethics Commission of the Faculty of Medicine, Public Health, and Nursing Universitas of Gadjah Mada with the number: KE/FK/1001/EC. Each respondent and their guardian were asked to sign an informed consent as an agreement to follow the research procedure. The age category of adolescents studied in this study was 15–18 years old. The age difference for the students of Madrasah Ali Maksum class XI is because at the time of admission, they

accept students of various ages. Opportunities to take education at this school are more open, as long as students can follow the lessons. The average age that can be accepted by Madrasah Ali Maksum is 13–14 years old for class X.

Before the intervention, the two groups were asked to fill out a questionnaire containing knowledge, attitudes, and behavior. After that, on the same day the intervention group was asked to watch an Emo Demo video which lasted 5–6 minutes. The Emo Demo video is based on the Emo Demo module and the anemia prevention material was adopted from the material compiled by the Indonesian Ministry of Health regarding adolescent anemia. This health education method uses two-way communication in the form of simulations or games that can invite respondents to be able to participate and interact in the process.

The Emo Demo method is given in direct or face-to-face form so in this study, it was modified by using video media as a medium for delivering health promotion. Videos related to choosing food ingredients to prevent adolescent anemia as much as 1 video with a duration of about 5-6 minutes. The video was made by female student cadres who have been selected by caregivers, who are students of Madrasah Aliyah Ali Maksum Krapyak regarding adolescent anemia and e-leaflet that can be accessed via a link that will be sent to the class group. The attitude, behavior, and knowledge of adolescent anemia questionnaires have been validated with a value of r greater than r table of 0.312 for the three questionnaires. The reliability value using a computer program of knowledge questionnaires about anemia is known to have a classical estimation value with the Cronbach alpha equation of 0.74, the reliability of the attitude instrument about anemia in high criteria.¹¹ After the first video screening, the sample in the intervention group was given a video file for independent playback. A month from the

screening of the first video, an assessment of knowledge, attitudes, and behavior was held.

For the operational definition of knowledge using an interval scale, the value obtained by students in answering questions about knowledge of anemia, diet, and risk of anemia with the measurement results of the correct answer getting a value of 1 and the wrong answer getting a value of 0. In the operational definition of attitudes and behavior using an ordinal scale, namely statements of feelings, assumptions, beliefs of students about the image of body weight, diet, risk of anemia and student actions to consume animal sources of iron, sources of vegetable protein, sources of vitamin C. The measurement results are measured using a 5-point Likert scale, namely strongly agree, agree, doubt, disagree, and strongly disagree. Unlike the intervention group, the control group was only asked to read the e-leaflet and a month later an assessment of knowledge, attitudes, and behavior was carried out.

Knowledge, attitude, and behavior data before and one month after video playback was calculated based on the score. The data were then analyzed using IBM Statistical Package for the Social Science Software (SPSS) version 25 was used for statistical analysis. Data analysis was tested using the Wilcoxon and Mann-Whitney tests because the data were not normally distributed.

RESULT

The activity begins with a pre-test for Madrasah students at Islamic Boarding Schools. Students are trained related to anemia prevention material. Then after the counseling, they do the post-test. The result is as Table 1 below:

Characteristics of Respondents

Characteristics of respondents include age and sources of information that have been obtained by respondents outside this study. The

age of respondents is 15-18 years old and 93.35 percent total of respondents from intervention and control group have received information

related to health. The sources of information that respondents often get are friends, print media, television, or radio.

Table 1. Characteristics of Respondents and Media Education

	Intervention Group		Control Group		n
	n	%	n	%	
Age					
15 years	0	0	5	11.1	
16 years	23	51.1	30	66.7	90
17 years	18	40	10	22.2	
18 years	4	8.9	0	0	
Media education (Media TV, Radio, Newspaper)					
Yes	41	91.1	43	95.6	90
No	4	8.9	2	4.4	

The Effect of Emo Demo Video on Knowledge Improvement

The results of statistical analysis showed a significant difference in the intervention group, namely an increase in the knowledge score of

the respondents indicated by a p-value of 0.000 ($p < 0.05$). The results of the analysis in the control group showed a p-value of 0.003 ($p < 0.05$) so there was a difference between the pre-test and post-test scores in the control group.

Table 2. Comparison of Knowledge Scores of Intra Group and Between Group

	Intervention Group				Control Group				p-value intra group*		p-value between group**
	n=45				n=45						
	Min	Max	Mean	SD	Min	Max	Mean	SD	I	K	
Pre-test	63	94	81.64	8.09	63	94	81.93	8.56	0.000	0.003	0.103
Post-test	81	100	92.62	7.36	63	100	83.13	9.14			0.000

* Uji Wilcoxon, significance value < 0.05
 ** Uji Mann-Whitney, significance value < 0.05

The results of the statistical analysis of the comparison of the pre-test knowledge values of the two groups before treatment showed a p-value of 0.103 ($p > 0.05$) so there was no difference between the two groups before treatment. The p-value of the two groups for the post-test $p < 0.001$ ($p < 0.05$), and the results of statistical tests on the comparison

knowledge of the control group and the intervention group are worth -4.719 (Z score), there was a significant difference so that it could be concluded that health promotion with Emo Demo video media was effective in increasing respondents' knowledge. The results of the analysis can be seen from Table 2.

The Effect of Emo Demo Video on Attitudes Before and After Intervention

The results of the statistical analysis of the Wilcoxon test showed that the p-value of the intervention group was $p < 0.001$ ($p < 0.05$) while for the control group it was 0.000 ($p < 0.05$) which indicated an increase in the attitude value in both groups. The results of the statistical analysis of the comparison of the pre-test values of the attitudes of the two groups before treatment showed a p-value of 0.496 ($p > 0.05$) so it could be concluded that there was no significant difference between the two groups. This shows that the attitude values of respondents before treatment in the intervention and control groups are relatively the same.

The results of the statistical analysis comparison of the two groups after intervention showed a $p < 0.001$ ($p < 0.05$) so it can be concluded that there was a significant difference with an increase in attitude scores. The results of statistical tests on the comparison attitudes of the control group and the intervention group are worth -5.230 (Z score), this shows that the Emo Demo video can improve the attitude of the respondents to choose foods that are high in iron to prevent anemia. When compared to the difference in attitude, values in the intervention group were 8.46 while for the control group were 3.78. So it can be concluded that increasing attitudes with Emo Demo video increased the attitude value higher than the provision of e-leaflet alone. The results of the analysis can be seen from Table 3.

Table 3. Comparison of Attitudes Scores of Intra Group and Between Group

	Intervention Group				Control Group				p-value intra group*		p-value between group**
	n : 45				n : 45				I	K	
	Min	Max	Mean	SD	Min	Max	Mean	SD			
Pre-test	48	67	56.76	4.04	48	66	57.29	4.43	0.000	0.000	0.496
Post-test	60	73	65.22	2.97	51	67	61.07	3.50			0.000

* Uji Wilcoxon, significance value < 0.05

** Uji Mann-Whitney, significance value < 0.05

The Effect of Emo Demo Video on Behavior Improvement

The results of the statistical analysis can be seen in Table 4. The Wilcoxon test showed the p-value of the intervention group was 0.000 ($p < 0.05$) while the control group was 0.000 ($p < 0.05$). This shows that in the intervention group and the control group there is a statistically significant increase in behavior in the selection of foods that are high in iron for consumption.

The results of statistical analysis between the two groups before intervention showed a p-value of 0.106 ($p > 0.05$), which means that there was no difference in the pre-test value in

the two groups. After the intervention was carried out on the respondents and the post-test scores of the two groups showed that the p-value was 0.000 ($p < 0.05$). The results of statistical tests on the comparison behavior of the control group and the intervention group are worth -3.739 (Z score), this shows that there is a significant difference in the post-test scores between the two groups so it can be concluded that health promotion with Emo Demo video is better than e-leaflet alone in improving respondent behavior in a better direction towards healthier behavior. In this case the selection of foods that are high in iron to prevent anemia.

Table 4. Comparison of Behaviors Scores of Intra Group and Between Group

	Intervention Group				Control Group				p-value intra group*		p-value between group**
	n=45				n=45						
	Min	Max	Mean	SD	Min	Max	Mean	SD	I	K	
Pre-test	42	69	55.96	6.82	34	68	53.33	7.49	0.000	0.000	0.106
Post-test	54	71	62.38	4.47	46	70	57.93	5.81			0.000

* Uji Wilcoxon, significance value < 0.05

** Uji Mann-Whitney, significance value < 0.05

DISCUSSION

The Effect of Emo Demo Video on Knowledge Improvement

Health education is a planned effort to influence and provide learning experiences for individuals, families, and communities to apply healthy ways of living as expected by education or health promotion actors.¹² Knowledge is the most important factor for someone to take action or behavior. The more people know and understand about health knowledge, it is expected that behavior or actions will lead to positive things. This is what the researchers applied in research on the effect of health promotion through Emo Demo video on the selection of foods containing iron for the prevention of anemia in adolescent girls.

Most of the young women have inadequate knowledge about anemia, the causes of anemia, prevention, and how to overcome it. Low knowledge about adolescent anemia results in adolescent girls experiencing anemia.¹³ A study conducted in Ethiopia said that adolescents who did not know about anemia had a 60 percent higher risk of suffering from anemia compared to adolescents who were aware of anemia.¹⁴ In the pre-test score assessor, it is known that the average value obtained in both groups is 81. Even though the assessment has been categorized as a good value, but the score is not evenly distributed. Some of the other children still get a lower score of knowledge about adolescent anemia. The study explains that the

lack of knowledge of female students about iron deficiency anemia makes them at risk of three times greater incidence of anemia.¹⁵

The results of the value of knowledge in pre-post knowledge increased both in the intervention group and the control group after being given health promotion with modified Emo Demo video about anemia prevention. The results of this study confirm that health promotion education through Emo Demo video on the selection of foods containing iron for the prevention of anemia in adolescent girls can provide information that is much better understood by adolescents than just e-leaflet. From the results of the mean rank between the intervention group and the control group, it is known that the mean values are 58.17 and 32.83. So that the value before and after being given education increased. Research conducted by Muthia¹⁶ stated that conducting counseling with an Emo Demo video about tuberculosis was more effective than e-leaflet. In line with the research conducted by Syakir¹⁷ which explains that the use of Emo Demo video is very effective in educating adolescents who do not understand anemia. The use of Emo Demo video in the study was proven to be more effective than e-leaflet in increasing respondents' knowledge.

The results of the post-test knowledge that were carried out after the intervention increased. The knowledge post-test value of the intervention group was higher than the control group. Health education is an effort to influence

and provide learning experiences for individuals to apply a healthy way of life as expected by health educators or health promotion.¹² High curiosity due to exposure to signs and symptoms of disease causes high curiosity about what happened to her and what the consequences for her future. It is proven in Table 2 that the mean post-test value of the intervention group is higher than that of the control group. It can be concluded that health promotion with Emo Demo video is effective in increasing respondents' knowledge.

Health education using audio visuals can significantly increase knowledge even though the target respondents are the elderly.¹⁸ Audiovisual or video aids are health education tools that have a long-term effect or impression on the target population. The visualization contained in the video becomes a practical teaching tool in educating small group targets. Research also shows that videos are more effective than face-to-face education. In addition, video has also proven to be an effective educational tool with live demonstration education. This is in accordance with the purpose of the modified Emo Demo video which is used as a substitute in direct demonstration of the Emo Demo video during this pandemic.¹⁹ The components of attitude formation are divided into three, namely cognitive, affective, and conative. Cognitive is belief, affective is emotional involvement, and conative is a person's tendency to behave. Cognitive or belief aspects sometimes arise in the absence of precise information about an object.²⁰

The risk of anemia that occurs in the long term will have a bad impact on the lives of adolescents in the future. It is described in a study conducted by Ababa²¹ and Nair²² that a history of anemia greatly influences the mortality and morbidity of women and the survival of their generation. The consequences of anemia that

are not treated immediately include miscarriage, bleeding during pregnancy and childbirth, low birth weight, and mortality.

Therefore, the education department and the public health department are expected to work together in promoting health, especially adolescent health. The lack of unsustainable health promotion regarding adolescent reproductive health, especially regarding the future impact of anemia on adolescent girls should be increased. In addition, a specific focus must be given to the success of the program or intervention provide.¹⁵

The Effect of Emo Demo Video on Attitudes

Attitude is a reaction or response that is still closed from a person to a stimulus or individual awareness in determining steps and real behavior and behaviors that may occur, or readiness to respond that is positive or negative.²³ The mean value of attitudes in the intervention group and control group increased. It can be seen in Table 2 that there is an increase in the mean value of attitudes between the intervention and control groups. People can determine the attitude if he feels in accordance with him. According to research, what determines the formation of attitudes is the perceptual component, namely trust with what is seen, felt, known, and information from other people.²³

The results of this study in line with research conducted by researchers on iron deficiency anemia counseling.²⁴ This study explains that counseling can affect the attitudes taken by individuals who are carried out by counseling in preventing anemia. According to research, there is a positive response to changes in adolescent attitudes in preventing iron deficiency anemia in high school students.²⁴ The study explained that there was a positive attitude change after counseling on health education about anemia using the lecture method.¹³

The use of Emo Demo video in conveying messages so that respondents are interested in changing attitudes to become more positive, in accordance with research conducted by Syakir.¹⁷ The use of Emo Demo video has a positive impact on changing behavior. These results prove that the Emo Demo video used by researchers is more effective in changing respondents' attitudes.

Experience must leave a strong impression to be the basis for forming attitudes. Attitude is easily formed if it involves emotional factors because it will get more appreciation. The experience of the subjects in this study who had never been checked for hemoglobin levels and education about anemia caused them to have a strong impression as the basis for forming attitudes.

Based on the questionnaire grid, attitude items that still have low scores are the same as knowledge, namely about the risk of anemia that can interfere with the learning process and the risk of anemia in the future. In accordance with research conducted by Mintarsih²⁵ in his research stated that individual attitudes will reflect the knowledge that obtained by the individual. Therefore, the provision of continuous education and monitoring is necessary in forming a more positive attitude and it is proven that research conducted by researchers related to media and monitoring is more effective in changing adolescent attitudes in preventing anemia.

The Effect of Emo Demo Video on Behavior Improvement

There is an increase in the mean value of behavior. The mean value of the behavior of the intervention group was higher than that of the control group. Health promotion with emo demo video is effective in increasing respondent behavior compared to only e-leaflets. Research reveals that there is a weak correlation between

knowledge and behavior.²⁶ That study revealed that there is a low positive correlation between knowledge and behavior. This is understandable because behavior change cannot be done in a short time, it takes 18-66 days to make changes in behavior.²⁷ The more often the behavior is repeated, the faster the behavior change will occur. However, strong knowledge will direct better behavior in preventing nutritional deficiency anemia.¹³ Behavior that is lacking in preventing anemia is seen in the questionnaire, namely behavior in protecting against risk, namely the consumption of Fe tablets and how to take vitamin C in addition to supplementation with Fe tablets. Inadequate behavior is due to poor knowledge, attitude, and evaluation of supervision from related parts. The provision of nutrition education was significant in increasing knowledge but not on behavior even though 38 hours of nutrition education had been given.²⁸ This shows that to meet the goal of changing behavior, it is advisable to nutrition education consistently and in the long term. Planned and sustainable nutrition education at the secondary and higher education levels. In addition, the involvement of parents or guardians of students plays an important role in the knowledge, attitudes, and behavior of adolescents. Parenting patterns and access to healthy food that is provided play a big role. Rules and invitations to consume healthy food that are applied to families or schools indirectly become early education related to food in adolescents will automatically affect the eating patterns of adolescents.²⁹

This research contains an update on the Emo Demo video. Previously, the Emo Demo video was carried out directly to the target, but this study tried to carry out the Emo Demo video through video packaging so that it is more friendly for teenagers. In practice, researchers are faced with several technical problems such as the lack of access for students to be able

to access videos independently. Students are not allowed to bring electronic devices such as cellphones, laptops, and so on so that access to videos independently uses the shared television provided in the dormitory but can only be accessed every holiday so students cannot access it optimally. In addition, the purpose of the Emo Demo video is to increase knowledge, attitudes, and behavior in choosing foods high in iron in adolescent girls to prevent anemia. However, there needs to be regular monitoring from the dormitory to support the prevention of anemia in adolescents in Islamic boarding schools.

CONCLUSION

The conclusion of this study is that Emo Demo video is effective as a learning media and more effective in increasing knowledge, attitudes, and behavior in choosing high iron foods in adolescent girls to prevent anemia. The use of Emo Demo video is more effective compared to e-leaflet media.

SUGGESTION

This media can be used as a reference as material for making health promotion media or counseling. Students can be consistent in consuming a balanced nutritional intake, improve the right diet, and can disseminate this information or knowledge from Emo Demo video to prevent adolescent anemia to other peers. In addition, parents or guardians of students can use multimedia educational media related to the prevention of adolescent anemia as learning for students, providing support, and monitoring students in consuming a balanced nutritional intake. So that the anemia prevalence decreases and increase the quality of parents' human resources to produce children as successors of a great nation in national development later.

REFERENCES

1. Almatsier S. *Prinsip Dasar Ilmu Gizi*. Jakarta: Gramedia Pustaka Utama; 2009.
2. Nursari D. Gambaran Kejadian Anemia pada Remaja Putri SMP Negeri 18 Kota Bogor Tahun 2009. *Skripsi*. Jakarta: Universitas Islam Negeri Syarif Hidayatullah, 2010.
3. Mirhosseini NZ, Shahar S, Ghayour-Mobarhan M, Kamaruddin NA, Banihashem A, Yusoff NAM, et al. Factors Affecting Nutritional Status among Pediatric Patients with Transfusion-dependent Beta Thalassemia. *Mediterranean Journal of Nutrition and Metabolism*. 2013; 6(1):45–51.
4. Kemenkes RI. Laporan Nasional Rischesdas 2018. *Laporan Penelitian*. Jakarta: Badan Penelitian dan Pengembangan Kesehatan Kementerian Kesehatan; 2018.
5. Notoatmodjo S. *Pendidikan dan Perilaku Kesehatan*. Jakarta: Rineka Cipta; 2003.
6. Laxminarayan R, Chow J, Shahid-Salles SA. Intervention Cost- Effectiveness: Overview of Main Messages. In: Jamison DT, Breman JG, Measham AR, et al, editors. *Disease Control Priorities in Developing Countries 2nd Edition*. New York: Oxford University Press and The World Bank; 2006. p. 35–58.
7. Rokhmawati IA. Efek Penyuluhan Gizi dengan Media Leaflet terhadap Tingkat Pengetahuan tentang Anemia pada Remaja Putri di SMP Kristen 1 Surakarta. *Skripsi*. Surakarta: Universitas Muhammadiyah Surakarta, 2015.
8. Anifah F. Pengaruh Pendidikan Kesehatan Melalui Media Vidio terhadap Pengetahuan tentang Anemia pada Remaja Putri. *Jurnal Keperawatan Muhammadiyah*. 2020;5(1): 296–300.
9. Putri PTE. Pengaruh Pemberian Penyuluhan Gizi Menggunakan Media Video dan Tanpa Media terhadap Pengetahuan dan

- Sikap Remaja tentang Anemia di SMPN 12 Padang Tahun 2018. *Skripsi*. Padang: Politeknik Kesehatan Padang, 2018.
10. Ariyani H, Ekawati. Tingkat Pengetahuan Remaja Putri tentang Anemia di Pondok Pesantren Al-Munawwir Komplek Q Krapyak Yogyakarta. *Media Ilmu Kesehatan*. 2015; 4(3):188–97.
 11. Agustiani MD. Pengaruh Penyuluhan Multimedia tentang Pencegahan Anemia terhadap Perilaku Remaja Putri dalam Mendukung Program 1000 Hari Pertama Kehidupan. *Tesis*. Yogyakarta: STIKES Guna Bangsa, 2019.
 12. Notoatmodjo S. *Promosi Kesehatan dan Perilaku Kesehatan*. Jakarta: Rineka Cipta; 2014.
 13. Chaluvraj TSI, Satyanarayana PT. Change in Knowledge, Attitude and Practice Regarding Anaemia among High School Girls in Rural Bangalore : An Health Educational Interventional Study. *National Journal of Community Medicine*. 2018;9(5):358–62.
 14. Gebreyesus SH, Endris BS, Beyene GT, Farah AM, Elias F, Bekele HN. Anaemia among Adolescent Girls in Three Districts in Ethiopia. *BMC Public Health*. 2019;19(92):1–11.
 15. Kheirouri S, Alizadeh M. Process Evaluation of a National School-based Iron Supplementation Program for Adolescent Girls in Iran. *BMC Public Health*. 2014;14(959):1–8.
 16. Muthia F, Fitriangga A, Yanti SN. Perbedaan Efektifitas Penyuluhan Kesehatan Menggunakan Metode Ceramah dan Media Audiovisual (Film) terhadap Pengetahuan Santri Madrasah Aliyah Pesantren Khulafaur Rasyidin tentang TB Paru Tahun 2015. *Jurnal Cerebellum*. 2016;2(4):646–56.
 17. Syakir S. Pengaruh Intervensi Penyuluhan Gizi dengan Media Animasi terhadap Perubahan Pengetahuan dan Sikap tentang Anemia pada Remaja Putri. *ARGIPA*. 2018; 3(1):18–25.
 18. Daryani I, Suciana F, Rummingsih E. Effect of Health Education using Audiovisual on Knowledge of Osteoporosis Prevention in Elderly. *Journal of Physics: Conference Series*. 2019;1179(1):1–5.
 19. Shah N, Mathur VP, Kathuria V, Gupta T. Effectiveness of an Educational Video in Improving Oral Health Knowledge in a Hospital Setting. *Indian J. Dent*. 2016;7(2):70–5.
 20. Zuchdi D. Pembentukan Sikap. *Cakrawala Pendidik*. 1995;3(14):51–63.
 21. Liyew EF, Yalew AW, Afework MF, Essen B. Distant and Proximate Factors Associated with Maternal Near-miss: A Nested Case-control Study in Selected Public Hospitals of Addis Ababa, Ethiopia. *BMC Women's Health*. 2018;18(28):1–9.
 22. Nair M, Churchill D, Robinson S, Nelson-Piercy C, Stanworth SJ, Knight M. Association between Maternal Haemoglobin and Stillbirth: A Cohort Study among a Multi-ethnic Population in England. *Multicenter Study*. 2017;179(5):829–37.
 23. Azwar S. *Sikap Manusia dan Pengukurannya*. Yogyakarta: Pusat Belajar Offset; 2013.
 24. Sharifirad G, Golshiri P, Shahnazi H, Shakouri S, Hassanzadeh A. PRECEDE Educational Model for Controlling Iron-deficiency Anaemia in Talesh, Iran. *J Pak Med Assoc*. 2011;61(9):862–5.
 25. Mintarsih P. Pendidikan Kesehatan Menggunakan Booklet dan Poster dalam Meningkatkan Pengetahuan dan Sikap Remaja tentang Kesehatan Reproduksi di Kabupaten Tasikmalaya. *Tesis*. Yogyakarta: Universitas Gadjah Mada, 2007.

26. Tashara IF, Achen RK, Quadras R, D'Souza MV, D'Souza PJJ, Sankar A. Knowledge and Self-reported Practices on Prevention of Iron Deficiency Anemia among Women of Reproductive Age in Rural Area. *International Journal of Advances in Scientific Research*. 2015;1(07):289–92.
27. Lally P, van Jaarsveld CHM, Potts HWW, Wardle J. How are Habits Formed: Modelling Habit Formation in the Real World. *European Journal of Social Psychology*. 2010;40(6):998–1009.
28. Kostanjevec S, Jerman J, Koch V. The Influence of Nutrition Education on the Food Consumption and Nutrition Attitude of Schoolchildren in Slovenia. *ERIC*. 2012;11:953-64.
29. Ferris KA, Babskie E, Metzger A. Associations between Food-Related Parenting Behaviors and Adolescents' Engagement in Unhealthy Eating Behaviors: The Role of Nutrition Knowledge. *The International Journal of Aging and Human Development*. 2017;84(3):231-46.