Research Article

The Effect of Early Education Using Animation Video and Leaflets on Preparation of Complementary Feedings as Stunting Prevention

Erika[1]*, Nova Wahyuni[2], Dyah Wulan Ramadhani[3], Riamah[4], Dewi Setianingsih[5]

[1]Faculty of Nursing Universitas Riau
[2,3,4,5]School of Nursing Institute of Health Science Tengku Maharatu

ORCID
Erika: https://orcid.org/0000-0002-8821-995X

Abstract.
Stunting is a chronic malnutrition problem caused by inadequate nutritional intake for a long time. Babies need adequate nutritional intake to prevent stunting. Education on the preparation of MP-ASI can be done through animated videos and leaflets. The study aimed to determine the effect of education using animated videos and leaflets to increase knowledge of mothers who have toddlers aged 4-5 months about the preparation for giving complementary feeding to prevent stunting. The study was conducted at the Payung Sekaki Health Center. This study used a quasi-experimental with one group pre-postest design and data analysis using a paired T-test. The number of samples were 86 respondents. Education using animated videos and leaflets has an effect on increasing the knowledge of mothers who had babies aged 4-5 months to prepare complementary feeding (p-value <0.05)**.** Health education using animated videos and leaflets could increase mother's knowledge to prepare complementary feeding for babies aged 4-5 months.

Keywords: education, stunting, preparation complementary feeding, animation videos, leaflets

Corresponding Erika: Erika;
email: rika_hardi@yahoo.com

Published 10 February 2023

Publishing services provided by Knowledge E

Selection and Peer-review under the responsibility of the RINC Conference Committee.

1. INTRODUCTION

Toddler period (infants under five years) is a golden age, and it is an important period in the process of human growth and development. The development of children under 5 years is the most important period because at this time children's brain cells develop very quickly up to 80%. If toddlers are not noticed for their growth and development, various health problems will appear so that they can have an influence on life in the future. One of the health problems in toddlers which is still a global health problem is stunting [1].

Stunting is a chronic malnutrition problem caused by inadequate nutritional intake for a long time due to feeding that is not in accordance with nutritional needs. Stunting occurs since the fetus is still in the womb [2]. Stunting can occur in the first 1000 days after conception and is associated with many factors, including socio economic status, food intake, infection, maternal nutritional status, micronutrient deficiencies and the environment. Malnutrition increases susceptibility to disease and death, and if eliminated, 45% of child deaths will not occur [3]. Data from the World Health Organization (WHO) places Indonesia as the third country with the highest prevalence in the South-East Asia Region (SEAR). The results of the United Nations International Children's Fund (UNICEF) survey in 2018, almost 3 out of 10 children aged under five suffer from stunting for toddlers, while 1 in 10 is underweight for toddlers. The incidence of stunting or failure to thrive in children under five in Indonesia is still high, at 30.8% above the limit set by the World Health Organization (WHO), which is 20% [1].

Data for Basic Health Research (Riskesdas) in 2021 shows that the highest prevalence of stunting in children under five in Indonesia nationally is in Papua, which is 55.4%, followed by North Sumatra, which is 47.7%. This shows an increase in the prevalence of stunting in every year. While the results of the Riskesdas stunting in Riau showed the highest number, namely 29.7% in Rokan Hilir Regency for height based on age in 2021. This shows an increase in stunting prevalence compared to 2018 which was 25.6% in Indragiri Hilir Regency(4). Data from the Pekanbaru City Health Office shows that the highest prevalence of stunting is in Payung Sekaki Health Center 69 cases with a target number of 4,100 children with very short cases totaling 7 children, short 62 children in 2020. This shows a decrease in stunting prevalence by 15 cases with a total of 15 cases. the target is 4,735 for 0-2 years old in 2021 and where the target number of babies aged 0-6 months is 706 babies. The data was taken from the number of babies who visited the posyandu where the data for the visit of babies aged 0-6 months was the highest at the East Labuh Baru Posyandu with 200 babies aged 0-6 months [5].

The government has made efforts to reduce the incidence of stunting by launching the first 1000 days of life movement that consist of two types, namely specific interventions and sensitive interventions [6]. However, stunting prevention efforts cannot be separated from the knowledge of parents about stunting. With good knowledge, parents can raise awareness of the importance of stunting prevention. Parental awareness will shape health patterns or behaviors, especially in preventing stunting such as in fulfilling nutrition starting from pregnant women, child nutrition, maintaining good home environment and sanitation, and clean and healthy living behavior [7].

The World Health Organization (WHO) recommends only breastfeeding for the first 6 months of infants to ensure optimal growth and development and to protect infants from various diseases. However, breastfeeding after six months of age is not sufficient because of the baby's rapid growth and development[8]. An effort is needed to increase knowledge about stunting prevention accompanied by good complementary feeding strategies through a health promotion of stunting prevention and processing of supplementary feeding menus by utilizing cheap and easily available local ingredients [7].

WHO and UNICEF [9] recommend 4 (four) best eating patterns for children up to the age of 2 years: 1) Early Initiation of Breastfeeding (IMD) in the first 30 to 60 minutes after birth, 2) exclusive breastfeeding until the baby is 6 months old, 3) starting to provide complementary foods from the age of 6 months, and 4) continue breastfeeding until the child is 2 years old [10].

Complementary feeding is extra food for babies over 6 month to growth and development. Complementary feeding must be given at the right time, adequate, safe, and responsive. The provision of optimal complementary feeding could ensure optimal growth and development, prevent stunting, prevent obesity, reduce the risk of anemia, micronutrient deficiency and the risk of diarrhea in children [11].

Mothers should be increased of their knowledge about health and nutrition for baby by health education, and it will greatly affect the nutritional status of children under five years old. Good maternal nutritional behavior can have a positive impact on toddler nutrition. The mother's ability to provide appropriate food ingredients and menus supported by their knowledge of nutrition can prevent nutritional problems in toddlers [12].

A research from Dianna et al [2], showed that there was a difference in knowledge before and after being given counseling through leaflet media. Video media is more effective in increasing the knowledge of mothers under five about stunting at the Pontianak Saigon Health Center, East Pontianak District [2]. Another research also showed that the results of monitoring weight, height and intake showed an increase, so it can be concluded that integrated educational and counseling interventions have the potential to overcome nutritional problems for malnourished infants / toddlers [13].

The initial data obtained for 7 out of 10 who had baby aged 1-6 months showed that mothers do not know when is the right time to give complementary feeding and how to do it. Many of them does not recognize about stunting at all. Based on the initial survey showed that there are still many mothers do not understand the health problems of stunting which can be prevented through timely complementary feeding and according

to the needs of infants aged 6 months and over by setting a different menu, healthy and nutritious every day. days for babies aged 6 months and over.

2. MATERIALS AND METHOD

2.1. Study Design

This study used a quasi-experimental design with a one group pre-post test design. Pre-test and post-test was carried out to determine the increase in knowledge. The experimental group was divided into two media groups, one group was given counseling using animated video media, while the other group was given leaflets.

2.2. Population, Samples, and Sampling

The population of this study were mothers who had babies aged 4-5 months. The sampling technique used the Lemeshow formula. The number of respondents was 86 mothers.

2.3. Instruments

The instrument was a questionnaire about knowledge of preparation complementary feeding as well as animated videos and leaflets given to respondents who live in the working area of the Payung Sekaki Health Center Pekanbaru.

2.4. Procedure

The researcher applied for a permit to conduct research at the Public health Center to the Health Office of Pekanbaru City, then researcher give informed consent to respondents while distributed pre-test questionnaires, then provided education using videos and leaflets. and finally giving a post test again to measure the mother's knowledge about the preparation of complementary feeding for stunting prevention. Ethical approval was obtained from the ethics committee at the Payung Negeri Health Education No. 0044/STIKES PN/KEPK/VII/2022

2.5. Data Analysis

Bivariate analysis was used to see the effect of providing early education through animated video and leaflets to increase knowledge of respondents in preparation the complementary feeding as prevention of stunting after intervention. The analysis used to compare the measurement results before and after education was carried out through animated video media and leaflets using the non-parametric Wilcoxon alternative test.

3. RESULTS

TABLE 1: Characterisctic of the Respondents (n=86).

		Kelompok			
Kategori	**N**	**Animation Video**		**Leaflet**	
		F	**%**	**f**	**%**
	23-29 Years	14	32,6	9	21,0
Age	30-35 Years	22	51,2	26	60,4
	36-40 Years	7	16,2	8	18,6
	Total	43	100.0	43	100.0
	Elementary school	6	14,0	3	7,0
	Junior high school	16	37,2	19	44,2
Education	Senior High School	16	37,2	15	34,9
	Diploma	2	4,7	3	7,0
	Bachelor	3	7,0	3	7,0
	Total	43	100.0	43	100.0
	1	5	11,6	3	77,0
	2	13	30,2	10	23,3
Number of Children	3	14	32,6	17	39,5
	4	7	16,3	9	20,9
	5	4	9,3	4	9,3
	Total	43	100.0	43	100.0

Based on table 1, it can be seen that the majority of respondents are 30-35 years old (51.2% for the animation video group and 60.4% for the leaflet group), most have junior high school education and on average the most have three children.

Based on the results of the normality test, the pretest value data in the animation video group and the leaflet group had an Asymp value. Sig (2-tailed) = 0.101 <0.05 then Ha is accepted. This means that the pretest value data in the animation video group

Table 2: Normality Test (N=86).

Variabel	Intervention	Normality Test
Animation Video	Before	0.101
	After	0,000
Leaflet	Before	0.101
	After	0.000

and the leaflet group were normally distributed. Meanwhile, based on the results of the normality test, the posttest value data in the animation video group and the leaflet group had an Asymp value. Sig (2-tailed) = 0.000 <0.05 then Ha is rejected and H0 is accepted. This means that the posttest value data in the animation video group and the leaflet group were not normally distributed.

Based on table 3, it can be seen that the average score before in the animated video media group was 15.35 with a standard deviation of 2,192 and obtained a minimum score of 11 and a maximum of 19 with a score of knowledge about complementary feeding preparation in stunting prevention, the majority answered correctly 16 questions as many as 9 respondents (20, 9%). While the average value in the leaflet media group is 15.28 with a deviation of 2.229 and obtained a minimum of 10 and a maximum of 20 with a knowledge score of complementary feeding preparation in stunting prevention, the majority answered correctly 17 questions as many as 9 respondents (20.9%).

Based on table 4, it can be seen that the average value after the animation video media group is 22.79 with a standard deviation of 0.412 and obtained a minimum of 22 and a maximum of 23 with a score of knowledge about the preparation of complementary feeding in stunting prevention, the majority answered correctly 23 questions as many as 34 respondents (79.1%) . While the average value in the leaflet media group was 22.35 with a deviation of 0.973 and obtained a minimum of 19 and a maximum of 23 with a knowledge score of preparation of complementary feeding in stunting prevention, the majority answered correctly 23 questions as many as 25 respondents (58.1%).

The results of the study in table 5 are a comparison of the development of mothers who had baby 4-5 months before and after being given education through animated videos and leaflets. In the variable before being given education in the animated video group, the average value was 15.35 with a standard deviation of 2.192, after being given educational therapy through animated videos, the average value was 22.79 with a standard deviation of 0.412, while in the leaflet group, the average value was 15.28 with a standard value. deviation of 2.229, after being given educational therapy through leaflets, an average value of 22.35 was obtained with a standard deviation of 0.973,

Table 3: Knowledge about the preparation of complementary feeding before intervention (n=86).

Knowledge Score	Animation video				
	f	Category	%	Mean	Deviation standard
10	0	-	0.0	15.35	2.192
11	1	Less	2.3		
12	4	Less	9.3		
13	4	Less	9.3		
14	8	Less	18.6		
15	4	Less	9.3		
16	9	Sufficient	20.9		
17	6	Sufficient	14.0		
18	2	Sufficient	4.7		
19	5	Adequate	11.6		
20	0	Adequate	0.0		
Total	**43**		**100.0**		
Knowledge Score	**Leaflet**				
	f	**Category**	**%**	**Mean**	**Deviation standard**
10	1	Less	2.3	15.28	2.229
11	0	-	0.0		
12	4	Less	9.3		
13	7	Less	16.3		
14	3	Lesss	7.0		
15	6	Less	14.0		
16	7	sufficient	16.3		
17	9	Sufficient	20.9		
18	4	Sufficient	9.3		
19	1	Adequate	2.3		
20	1	Adequate	2.3		
Total	**43**		**100.0**		

the results of the pair T-test test, the p-value of 0.019, it can be concluded that there is an effect of providing education through animated video media and leaflets on the knowledge of mothers of toddlers 4-5 months who live in the working area of Payung Sekaki Health Center Pekanbaru City so that H0 is rejected. The results explained that the early education could increase the knowledge of respondents after intervention (p-value <0.05).

Table 4: Knowledge about the preparation of complementary feeding after intervention (n=86).

Knowledge Score		Animation Video			
	F	Category	%	Mean	Deviation Standard
22	9	Adequate	20.9		
23	34	Adequate	79.1	22.79	0.412
Total	**43**		**100.0**		
Knowledge Score			**Leaflet**		
	F	**Category**	**%**	**Mean**	**Deviation Standard**
19	1	Adequate	2.3		
20	2	Adequate	4.7		
21	3	Adequate	7.0	22.35	0.973
22	12	Adequate	27.9		
23	25	Adequate	58.1		
Total	**43**		**100.0**		

Table 5: Intervention education through animated videos and leaflets to mothers (n=86).

Variable	Intervention	Mean	Deviation standard	p-value
Animation video	Before After	15.35 22.79	2.192 0.412	0,019
Leaflet	Before After	15.28 22.35	2.229 0.973	

4. DISCUSSION

The results of the pre-test in the animated video media group were 51.2% of respondents who had sufficient knowledge about the preparation of complementary feeding for stunting prevention, and 48.8% less. After the intervention using animated video media the results were 20.9% sufficient and 79.1% of respondents are adequate. Dianna states that there is a significant difference in mother's knowledge before and after conducting education regarding the preparation of supplementaru feeding using the ppt, video and question and answer methods, because videos are easy to understand and can be repeated making it easier to understand the material [13]. Where at the time of pretest 4 and the average score of knowledge at the time of posttest was 8 with the results of statistical tests using the Wilcoxom test, the value of $p = 0.001$ ($p < 0.005$) which means that there is an effect of education about stunting on mother's knowledge. A research from Sahda's [14] explains that video media is the most effective media in increasing mother's knowledge about supplementary food. Similarly, research from

Fauziyyah explained that the use of video media in nutrition education is more effective in increasing respondents' knowledge and attitudes about complementary feeding [15].

Meanwhile, in the leaflet media group before the intervention without leaflets, there were 22 respondents (51.2%) who had sufficient knowledge level and 21 respondents (48.8%) had a low level of knowledge. After the intervention using leaflet media the results improved. 18 respondents (41.9%) had an adequate level of knowledge and 25 respondents (58.1%) had a good level of knowledge. Dianna stated that there was a significant difference in knowledge before and after being given counseling using leaflet media ($p = 0.001$) [13]. In this study, respondents were given time to read leaflets for 5 minutes. From the results of the pretest or before the intervention was given through the leaflet media, the respondents' knowledge about the understanding, causes, impacts and ways to prevent stunting was not good, and there was an increase in knowledge about the meaning and causes of stunting after the intervention was given, but on the impact material and how to prevent stunting there were still some knowledge of respondents did not increase. Leaflets are a form of delivering health information or messages through folded sheets, information can be in the form of sentences, pictures or a combination of both. Leaflets that are packaged in a short, concise and interesting way can increase the interest of the respondents to read them [16]. Approximately 75-87% of knowledge is conveyed through the sense of sight, such as the use of leaflet media that utilizes the sense of sight [16]. Increased knowledge will occur when intervention or health education is an ability that can be achieved by respondents as a result of the learning process to achieve the purpose of health education, it is easier to use learning media that is in accordance with the purpose and can increase the ease of receiving messages or information.Methods, media, and length of the extension process are several factors that influence the increase in knowledge during counseling [17].

Animated video media is more interesting because audiovisual presents a real situation from the information conveyed to create a deep impression. In addition to accelerating the learning process with the help of audiovisuals, it can increase the level of intelligence and change passive and static attitudes towards active and dynamic attitudes. In contrast to leaflets, which are limited to visual media, the respondent's attention is divided between the media as visuals and the presentation of material as the audio source that operates the media. In this study, respondents were given time to watch an animated video related to the preparation of complementary feeding to prevent stunting for 15-20 minutes, followed by a question and answer session. Meanwhile, in the leaflet media group, after the pretest, the next researcher gave a leaflet to the respondent and explained the material and asked questions with the

patient. Processing the data in this study using the T-test and obtained p-value = 0.019 (p-value <0.05), meaning that there is an effect of education on mothers of toddlers aged 4-5 months on the preparation of complementary feeding as prevention of stunting through video media. animations and leaflets. Education through animated videos and leaflets can increase mother's knowledge about the preparation of complementary feeding for stunting prevention.

Several studies have stated that video media and leaflets are and the most dynamic and realistic means of delivering information [18,19,20]. Utilization of learning resources in the form of learning media can increase new desires and interests, generate motivation and stimulate learning activities and even bring psychological influence on respondents. The use of learning media greatly helps the effectiveness of the learning process and message delivery. Besides generating motivation and interest, learning media can also help respondents improve understanding, present data in an interesting and reliable manner and condense information [6].

5. CONCLUSION

Health education using animated videos and leaflets is effective to increase mother's knowledge in preparing complementary feeding for baby aged 4-5 months. There was an increase of respondent's knowledge towards the preparation of complementary feeding after giving animation video and leaflet.

ACKNOWLEDGMENTS

Thank you to the Payung Sekaki Health Center Pekanbaru as the location of this research area. Thank you to those of you who are willing to be respondents to this study. Thank you are to the research team and research assistants who have helped and provided their support and prayers until the completion of this research.

CONFLICT OF INTEREST

This study has no conflict of interest.

References

[1] Herlina T, Rahayu S, Suryani RL, Utami T. Gambaran Tingkat Pengetahuan Ibu Tentang Stunting Pada Balita Di Desa Kedawung Kecamatan Susukan Kabupaten Banjarnegara. 2021;4(1):10–17. Available from: https://akperyarsismd.e-journal.id/BNJ

[2] Dianna, Septianingsih N, Pangestu JF. Perbedaan Pengetahuan Ibu Balita Sebelum Dan Sesudah Sesudah Diberikan Penyuluhan Tentang Stunting Melalui Media Video Dan Leaflet Di Wilayah Kerja Puskesmas Saigon Kecamatan Pontianak Timur. J Kebidanan Khatulistiwa. 2020;6(1):7.

[3] Lestari1 PP, Aulia F, Dwi K. Pemeriksaan Bayi Dan Praktik Pemberian Makanan Pendamping Asi (Mp Asi) Dalam Upaya Pencegahan. 2021;1(2):18–26. Available from: http://journal.lembagakita.org/index.php/jpmn/article/view/505

[4] Kemenkes. Profil Kesehatan Dinas Kesehatan Provinsi Riau. 2019;(0761).

[5] Dinas Kesehatan Provinsi Riau. Data COVID-19 Provinsi Riau. 2021.

[6] Wati SK, Kusyani A, Fitriyah ET. Pengaruh Faktor Ibu (Pengetahuan Ibu , Pemberian ASI- Eksklusif & MP-ASI) Terhadap Kejadian Stunting Pada Anak. J Heal Sci Community [Internet]. 2021;2(1):1–13. Available from: https://thejhsc.org/index.php/jhsc/article/view/124

[7] Maryam A, Rahmawati R, Elis A, Lismayana L, Yurniati Y. Peningkatan Gizi Anak Sebagai Upaya Pencegahan Stunting Melalui Pembuatan Mp-Asi Berbahan Ikan Mairo. J Masy Mandiri [Internet]. 2021;5(3):901–907. Available from: http://journal.ummat.ac.id/index.php/jmm

[8] Uğur H, Çatak J, Mızrak ÖF, Çebi N, Yaman M. Determination and evaluation of in vitro bioaccessibility of added vitamin C in commercially available fruit-, vegetable-, and cereal-based baby foods. Food Chem [Internet]. 2020;330:127166. Available from: https://doi.org/10.1016/j.foodchem.2020.127166

[9] WHO, UNICEF. Early child development. Soc Sci Med. 1973;7(5):395–396.

[10] Langi GKL, Djendra IM, Purba RB, Todanggene RSP. Pengetahuan Ibu Dan Pemberian Asi Eksklusif Dengan Kejadian Stunting Pada Balita 2-5 Tahun Di Puskesmas Kawangkoan Minahasa. J GIZIDO. 2019;11(01):17–22.

[11] Dewi PS, Asri WM. Pelatihan Pembuatan Kudapan Kaya Nutrisi dan Probiotik Guna Mencegah Stunting Di Mojokerto. Din J Pengabdi Kpd Masy. 2020;5(1):65–69.

[12] Siahaan SC, Yuwono N. Pendidikan Dini Prinsip Edukasi Kesehatan Gizi Seimbang melalui metode Kids Play and Care. To Maega J Pengabdi Masy. 2021;4(2):179.

[13] Rahma A, Nuradhiani A. Peningkatan Pengetahuan tentang Pemberian ASI Eksklusif dan Pendampingan Balita Gizi Buruk dan Stunting di Gresik, Jawa Timur. Hilos Tensados. 2019;1:1–476.

[14] Sahda shofi nur werdaya. The making of animated video right MPASI Healthy Childern as a nutrient education media for mothers of childern under two years. Angew Chemie Int Ed. 2020;6(11):951–952.

[15] Fauziyyah Fl. Efektivitas Penggunaan Media Untuk Meningkatkan Pengetahuan Dan Sikap Ibu Tentang Makanan Pendamping Asi (Mp Asi) Di Desa Kenep Kabupaten Sukoharjo. Surakarta: Universitas Muhammadiyah Surakarta. 2018.

[16] Notoatmodjo. Ilmu Perilaku Kesehatan. Jakarta: Rineka Cipta; 2014.

[17] Firdaus ZA, Ruhmawati T. Pengaruh Video Animasi Konsumsi Buah dan Sayur. J Kesehat Siliwangi. 2021;2(1):81–89.

[18] Purwati Y. Perbedaan Pendidikan Kesehatan dengan Media VCD dan Leaflet terhadap Keikutsertaan Senam Hamil pada Ibu Hamil. https://lppm.unisayogya.ac.id/prosiding-seminar-nasional-say. 2014. Diakses 17/2/2018.

[19] Ermiati, Arien Dwi Puteri, Mira Trisyani Koeryaman. The effect of health education using video and leaflet on the pregnant women's knowledge about preeclampsia. jnc. 2021;4(1).

[20] Fitri Saragih, Kintoko Rochadi R, Alam Bakti Keloko. The effectiveness of the media leaflets and film on knowledge of the attitude snd skills of Cadres in Ovitrap making. International Archives of Medical Sciences and Public Health IAMSPH. 2020;1(2):107-117.