

The Effectiveness of Education about Healthy Food on Mother's Motivation and Knowledge of Mothers in Preventing the Risk of Stunting

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ABSTRACT

Background: Stunting is a health problem caused by chronic malnutrition in children, which affects cognitive and motor growth and development. The role of mothers is very important in preventing stunting, especially through a good understanding of nutritional intake. The issue of stunting in Indonesia is a significant chronic nutritional problem caused by inadequate nutritional intake and various other factors, including maternal Motivation and knowledge about healthy food.

Purpose: This study aims to evaluate the effectiveness of nutrition education through animated videos and booklets in improving maternal Motivation and knowledge to prevent the risk of stunting.

Methods: This study used a Quasi-Experimental design with a pre-test and post-test with control group design. The sample consisted of 60 mothers who had toddlers at the Kelapa Gading Sehat Posyandu (animation video group) and the Amalia Posyandu (booklet group), each consisting of 30 people. Data were collected using a questionnaire and analyzed using a paired t-test and an independent t-test to see the effectiveness of the educational intervention.

Results: The results showed a significant increase in mothers' motivation and Knowledge after being given education. In the animated video group, the average motivation score increased from 35.8 to 48.9, while in the booklet group it increased from 36.4 to 49.8 (p-value = 0.000). The results showed that the average maternal knowledge scores significantly increased after the intervention, with a p-value < 0.05.

Conclusion: This study concludes that nutrition education based on animated video media and booklets can be an effective method in increasing mothers' motivation and Knowledge in efforts to prevent stunting.

Keywords: education, knowledge, motivation, stunting

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BACKGROUND

Nutritional problems are a highly complex and crucial issue that needs immediate attention worldwide, especially in Indonesia. Indonesia is one of the countries with the most comprehensive nutritional issues. It is among the 17 out of 122 countries experiencing malnutrition problems in children, particularly stunting (Lestari & Hanif, 2021). Stunting is a condition where growth is hindered due to malnutrition or health disorders. It results from chronic or recurring nutritional deficiencies that occur during pregnancy and early childhood (Fitriahadi et al., 2023). Stunting can be defined as growth failure in infants (0-11 months) and toddlers (12-59 months) due to chronic nutritional deficiencies, particularly within the first 1,000 days of life, leading to children being too short for their age (Arnita et al., 2020). Efforts to reduce or prevent the risk of stunting include implementing nutritional intervention measures. There are direct factors influencing stunting, such as lack of maternal knowledge about healthy food, maternal malnutrition, early pregnancy, and poor nutrition, as well as indirect factors like healthcare services, education, socio-cultural aspects, and environmental hygiene. Common causes of stunting include lack of awareness, insufficient nutritional intake during pregnancy and after childbirth, and limited access to healthcare services. Therefore, improving nutrition, knowledge, education, and access to clean water is essential (Syafira et al., 2023).

A mother's level of knowledge is one of the contributing factors to child malnutrition, as mothers are the closest caregivers and responsible for determining the nutritional intake of their children and other family members. A mother should understand balanced nutrition to prevent her child from suffering from nutritional deficiencies (Kuswanti & Azzahra, 2022). The risk factor that greatly influences the risk of stunting is the level of inadequate nutritional intake. Children who have insufficient energy or protein intake have a very high risk of stunting. This stunting prevention can be done by conducting comprehensive direct intervention for each stunting risk factor by providing health education to influential parties such as mothers of toddlers, pregnant women, and prospective mothers who can help reduce the risk of stunting. This stunting risk factor can also occur from the parents of toddlers such as general factors, genetic factors, and pregnancy factors. Low education in parents also greatly influences the occurrence of stunting with a lack of knowledge in mothers. In addition, motivation, motivation is a very important element in helping to prevent stunting. According to the World Health Organization (WHO), the highest prevalence of stunting is 149.2 million (22.0%). The incidence of stunting is most common in Asia, with the first rank being in Timor Leste with a total of 48.8%, the second rank being Indonesia with a prevalence of 31.8%, followed by India with 30.2%, while in Australia it is 2.1%, and Japan is 5.5%. Indonesia is a developing country with a high stunting rate, according to WHO the prevalence limit for stunting is 20%. From data obtained from the Indonesian nutritional status survey (SSGI), the stunting rate in Indonesia is 5.33 million toddlers suffering from stunting (24.7%). In 2022, which was conducted by the Ministry of Health of the Republic of Indonesia, it showed that the prevalence of stunting in Indonesia reached 21.6% compared to the previous year, where in 2021 the prevalence of stunting reached 24.4% (Febriana Sulistya Pratiwi., 2022). Stunting data in East Kalimantan is still high since 2021, reaching 22.8% and in 2022 it will be 23.9%. Based on February 2023 data, Samarinda City found that 2,500 toddlers suffered from stunting, where the highest cases were in Sungai Kunjang sub-district with 390 cases and followed by Loa Janan Ilir with 351 people. Meanwhile, the lowest stunting data was in Samarinda City with 91 people (Bappeda, 2023). The role of mothers is very much needed in helping to prevent stunting today. There are many factors that can influence the motivation and attitude of mothers in helping to prevent the risk of stunting. Based on research conducted by Heni Wulandari,

there is a significant relationship between motivation and prevention of stunting. With the results of 228 respondents (83.8%), most of the mothers who have toddlers get a lot of support from their families as many as 234 respondents (86.0%), and the mother's motivation is partly positive 225 respondents (82.7%) (Wulandari & Kusumastuti, 2020).

The motivation that exists within an individual will trigger the individual to try to achieve the goals that will be achieved as much as possible and with the support of someone it can also encourage individuals to try to become better and more useful people. One of them is that mothers must be smart in preparing food, choosing food ingredients, to the food menu that will be given. mothers who usually consume nutritious food will usually have children with good nutrition. therefore, to increase motivation, learning in the form of education is needed to help someone learn. Based on research conducted by Niken Ayu, it shows that the mother's attitude in providing balanced nutrition to toddlers as an effort to prevent stunting from 70 respondents, the results were 15 respondents (21.4%) in the good category, 38 respondents (54.3%) in the sufficient category and 17 respondents (24.3%) in the less category (Ayu & Niken, 2021).

This illustrates that the mother's attitude, which is reflected through her response and perspective on fulfilling nutrition, has a significant impact on preventing stunting in toddlers. Considering that mothers are the main figures responsible for fulfilling children's daily nutrition, their role is very vital in efforts to prevent stunting. To carry out this role effectively, mothers need to have a comprehensive understanding of the various components of balanced nutrition which include providing breast milk, fulfilling the needs of carbohydrates, protein, fat, vitamins, minerals, and adequate water in the daily intake of toddlers. Education or what is usually called health education, is a learning process that can be given to individuals, communities, groups or families that aims to change a person's behavior from unhealthy to healthier lifestyles. In an effort to prevent stunting, it is important to provide health education related to this problem. In providing education, the delivery of health information requires media that can help the audience receive information easily and interestingly. Providing education using media in the form of animated videos that can be used to make it easier for a mother to understand the material provided. Booklet media is also one of the options that can be used, booklets themselves are media that contain health messages in the form of writing or pictures. With the presence of both media, it is hoped that it will be able to increase a person's motivation to learn. Motivation is a basic drive that can move someone to behave, this drive is in a person who moves to do something that is in accordance with the drive within him. According to the theory of adult learning motivation expressed by Knowles, adults have a concept of themselves where adults have experience so that most of them want to be more involved in activities if there is something new that can deepen and broaden their experience. Maternal motivation is very much needed in preventing stunting by consuming foods that contain balanced nutrition, providing additional food for pregnant women, consuming blood-boosting tablets, clean and healthy living behavior, always providing access to clean water and sanitation facilities and maintaining environmental cleanliness (Aulya et al., 2022).

According to the results of data obtained from the Indonesian Ministry of Health in 2017, efforts to prevent stunting problems during pregnancy can be achieved if mothers are motivated to seek higher and more balanced nutritional needs. Therefore, it is important to provide education using both animated video media and booklets to provide information that can be well received. with the occurrence and phenomenon of stunting so as to be able to increase the motivation of mothers by providing education using both media at the Amalia Posyandu and Kelapa Gading Sehat Posyandu.

OBJECTIVE

This study aims to evaluate the effectiveness of nutrition education through animated videos and booklets in improving maternal Motivation and knowledge to prevent the risk of stunting

METHODS

The study was conducted with mothers on September 25 and October 8, 2024, at Posyandu Kelapa Gading Sehat and Posyandu Amalia in the working area of the Wonorejo Health Center, Sungai Kunjang District, Samarinda City. The activity involved providing education in the form of lectures and discussions using booklets and animated videos on the theme of preventing stunting risks through the provision of healthy food. It is expected that this will enhance maternal understanding and actions to reduce the risk of stunting. The method used in this study is quantitative research. The design employs a Quasi-Experimental method with a Pre-Test and Post-Test With Control design. Quasi-Experiment is a type of research design that includes both control and experimental groups that are not randomly selected. The sample used in this study consists of 30 respondents from each posyandu, namely Posyandu Amalia (Booklet Group) and Kelapa Gading Sehat (Animated Video Group), with a non-probability sampling technique and purposive sampling method, which determines the sample based on specific criteria or considerations. The instrument used in this study is a questionnaire, employing the Guttman scale for the knowledge questionnaire and the Likert scale for the action questionnaire. In this design, both groups will be given a pretest, followed by the provision of education in the form of animated videos and booklets for each group. After 7 days of the pretest, a post-test questionnaire (with the same questions) will be administered to compare the results of the initial and final tests for both groups. Based on the objectives of the study, all instruments used have undergone prior testing. The validity test used the point-biserial correlation formula for the knowledge questionnaire and the Pearson productmoment correlation (PPM) for the action questionnaire. Normality tests were then conducted using the Shapiro-Wilk test. The researcher will compare the results of the pre-test and post-test for each Posyandu to assess the impact of education with the media used, and subsequently, statistical tests will be performed to determine if there is a significant difference between education provided through animated videos and booklets.

RESULTS

Characteristic respondents

This research employs a quantitative approach and utilizes questionnaires with Guttman and Likert scales for data collection. The distributed questionnaires will be completed by 30 respondents at each posyandu. The characteristics of this study include age, occupation, education, income, number of children, and stunting in children.

Tabel 1 Demographic Data

No	Variable Group	Animation Vidio Group		Booklet	
1	Mother Age	N	%	N	%
	19-30	26	86,7	18	60,0
	31-50	4	13,3	12	40,0
	Work				
2	Housewife	26	86,7	26	86,7

	Government Employees	4	13,3	4	13,3
3	Education				
	Elementary School	1	3,3	3	10,0
	Junior High School	2	6,7	5	16,7
	Senior High School	22	73,3	17	56,7
	D3	1	3,3	1	3,3
	S1	4	13,3	4	13,3
4	Income ≥ Rp 3.400.0000	15	50.0	27	90.0
	Income ≥ Rp 3.400.0000	15	50.0	3	10.0
5	Number of Children				
	1	6		12	40,0
	2	18	20,0	9	30,0
	3	6	60,0	7	23,3
	4	0	20,0	2	6,7
6	Stunted Children				
	Yes	0	0	0	0
	No	30	100	30	100
	TOTAL	30	100%	30	100%

Based on the table above, it is known that the majority of respondents in both groups are in the age range of 19-30 years. In the animation video group, there are 26 respondents (86.7%), while in the booklet group, there are 18 respondents (60%). The most common occupation in both groups is as a housewife. In the animation video group, there are 26 respondents (86.7%), and in the booklet group, there are also 26 respondents (86.7%). The most dominant level of education in both groups is high school. In the animation video group, there are 22 respondents (73.3%), while in the booklet group, there are 17 respondents (56%). Regarding income, in the animation video group, there are an equal number of respondents, with 15 respondents (50%) earning above the minimum wage and 15 respondents (50%) earning below the minimum wage. In the booklet group, the majority earn above the minimum wage, with a total of 27 respondents (90%). The number of children in the animation video group is predominantly 2 children, with 18 respondents (60%), while in the booklet group, the most common number of children is 1, with 12 respondents (40%). There are no cases of stunting in either group, meaning that neither group has respondents with stunted children.

Statistik Tes Result

Tabel 2. Univariate Data on Motivation

Intervensi	mean	median	modus	min	max	SD	CI 95%	
							Lower	Upper
Pre Tes Animasion Vidio	35,8	36,0	37	29	46	3,73	34,44	37,23

Post Tes Animasion Vidio	48,9	49,0	49	45	52	1,83	48,25	49,62
Pre test Booklet	36,47	37,0	37	31	44	3,026	35,34	37
Post Test Booklet	49,8	50,0	49	47	52	1,34	49,33	56,33

The table above shows that the average motivation score of respondents during the pretest, namely a mean of 35.8, was lower, while for the post-test results of Posyandu Kelapa Gading, the mean result was 48.9, indicating the motivation score of Posyandu Amalia during the pretest with a mean result of 36.47, while for the post-test results of Posyandu Amalia's motivation with a mean score of 49.8.

Tabel 3. Univariate Result Of Knowledge

Intervensi	mean	median	modus	min	max	SD	CI 95%	
							Lower	Upper
Pre Tes Animasion Vidio	72,22	75,00	75	42	100	13,184	67,30	77,14
Post Tes Animasion Vidio	83,33	83,30	83	58	100	10,946	79,25	87,42
Pretest Booklet	74,44	75,00	83	42	100	14,503	69,03	79,86
Post Test Booklet	83,61	83,30	83	58	100	14,052	79,49	87,74

The table above shows that the average motivation score of respondents during the pretest was 35.8, lower than the posttest results for Posyandu Kelapa Gading, which had a mean of 48.9. The motivation score at Posyandu Amalia during the pretest was 36.47, while the posttest results for Posyandu Amalia had a mean score of 49.8.

Tabel 4. Result of Dependent T-Tes Motivation

Motivation	N	Mean	Difference	SD	p value
Pre Tes Animasion Vidio	30	35,8	13,1	29	0,00
Post Tes Animasion Vidio	30	48,9		45	
Pre test Booklet	30	36,4	13,4	31	0,00
Post Test Booklet	30	49,8		47	

Based on the data in table 4, the average value of respondents before and after being given animated video education with an initial value of 36.4. After being given animated video education in the form of healthy food in intervention group A increased by a value of 36.4 and in intervention group B increased by a value of 49.8. The difference between the intervention group with a total value of 13.1 and intervention group B with a total value of 13.36. This

shows a significant result of p-value 0.00 so that the significance value is smaller than p-value $< (0.05)$ so that H_0 is rejected and H_a is accepted.

Tabel 5. Result of Dependent T-Tes Knowledge

Knowledge	N	Mean	Difference	SD	p value
Pre Tes Animasion Vidio	30	72,22	-11,113	13,184	0,00
Post Tes Animasion Vidio	30	83,33		10,946	
Pre test Booklet	30	74,44	-9,170	14,503	0,00
Post Test Booklet	30	83,61		11,052	

Based on the data in the table 5, it can be observed that the average score of respondents before receiving education via animated video was 72.22 in the animated video group, while the initial score was 74.44 in the booklet group. After receiving education, the score in the animated video group increased to 83.33, and the score in the booklet group increased to 83.61. The difference in the animated video group was -11.113, while in the booklet group, it was -9.170. This indicates a significant result with a p-value of 0.000, which is smaller than the significance level of $p < 0.05$, so H_0 is rejected and H_a is accepted. The results above indicate a difference between the two groups, the animated video group and the booklet group. In the animated video group, the difference between the pre-test and post-test was -11.333, while in the booklet group, the difference between the pre-test and post-test was -9.170. Thus, it can be concluded that there is an influence of education through animated videos and booklets about stunting on respondents' knowledge at both integrated health posts.

Tabel 6. Bivariate Result Independent T-Test of Motivation

Motivation	N	Mean	SD	Mean Difference	T	p value
Animasion Vidio	30	48,93	1,837	0,900	-2,167	0,035
Booklet	30	49,83	1,341	0,900	-2,167	

Based on the results of the independent T-test analysis, there was a significant difference between the post-test scores of the Kelapa Gading and Amalia groups, where the Amalia group had a higher average score with a Mean value = 49.83 compared to the Kelapa Gading group Mean = 48.93, with the Levene test results showing homogeneous variance ($F = 1.463$, $p = 0.231 > 0.05$) so that using the assumption of equal variances produced a value of $t(58) = -2.167$, $p = 0.034 < 0.05$, with an average difference of -0.900 indicating that the difference in post-test scores between the two groups is real and statistically reliable.

Tabel 7. Bivariate Result Independent T-Test of Knowledge

Knowledge	N	Mean	SD	Mean Difference	T	p value
Animasion Vidio	30	83,33	10,945	-280	-99	0.922

Booklet	30	83,61	11,051	-2,690
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Based on the results of the independent t-test analysis, Levene's test indicates that the two groups are equivalent ($\text{Sig.} = .849 > 0.05$). The analysis results show that the average post-test score for the Animation Video group ($M = 83.3333$, $SD = 10.94574$) is lower than that of the Booklet group ($M = 83.6133$, $SD = 11.05178$). The difference in the average between the two groups is -0.28 , with a standard error of 2.83990 . The t-test results show a t value of -0.099 with degrees of freedom and a significance value (p value) of 0.922 , which is greater than 0.05 . Although the results indicate no statistically significant difference between the media of the animation video method and the booklet.

DISCUSSION

Relationship between Age and the Incidence of Stunting Risk

Relationship between Maternal Age and Stunting Incidence Based on the age characteristics in the data table that the author took, the majority were aged 19-30, 26 people (86.7%) and 31-50, 4 people (13.3%) in the intervention group and in Intervention Group B with an age range of 19-30, 18 people (60.0%), and at the age of 31-50, 31 people (40.0%). In line with (Pangestu et al., 2021) Based on the table above, it can be seen that from a total of 45 respondents (100%) with maternal age <20 years or >35 years, the majority experienced stunting with the category $= -3$ SD to -2 SD as many as 27 people (60.0%), while those who experienced stunting with the category $= -3$ SD amounted to 18 people (40.0%). Meanwhile, from 62 respondents (100%) with maternal age 20-35 years, the majority experienced stunting with the category $= -3$ SD to -2 SD as many as 43 people (69.4%), and 19 people (30.6%) were in the category of stunting $= -3$ SD. The results of the chi-square test showed a p-value of $0.426 > \alpha = 0.05$, which means H_0 is accepted and H_a is rejected. Thus, there is no significant relationship between maternal age and the incidence of stunting in Dawe District.

Relationship between Employment and the Incidence of Stunting Risk

Based on the data, most mothers chose to be housewives in the intervention group (26 mothers, 86.7%) and in the control group (18 mothers, 86.7%). There were 4 mothers working as civil servants in both the intervention and control groups (13.3%). A mother's occupation significantly affects her behavior in providing nutrition to her children. Working mothers often have less time with their children, so food intake is not well controlled, and attention to child development decreases. This is in line with research by Rahmawati et al., (2023), which showed that of the 65 cases of stunting, 56 mothers (86.2%) were non-working and 9 mothers (13.8%) were working. The results of the chi-square statistical test showed a significant relationship between employment and stunting incidence at the UPTD Landono Health Center (P value $0.000 < 0.05$).

Relationship between Education and the Incidence of Stunting Risk

Based on the data collected, the education level of mothers in the intervention group was as follows: 1 respondent (3.3%) had primary school education, 2 (6.7%) had junior high school, 22 (73.3%) had high school, 1 (3.3%) had a diploma, and 2 (13.3%) had a bachelor's degree. In the control group, 3 respondents (10.0%) had primary school education, 5 (16.7%) had junior high school, 17 (56.7%) had high school, 1 (3.3%) had a diploma, and 4 (13.3%) had a bachelor's degree. The majority of respondents had a high school education. Parental education affects the incidence of stunting in children. In the Kelapa Gading Sehat and Amalia Posyandus, most respondents had a high school education. Education can influence understanding of nutrition and the provision of proper nutrition for children's growth. Higher education levels tend to reduce the risk of stunting, although its effectiveness also depends on the parents' ability to apply proper nutrition for their children. This is consistent with the study

by [Nurmalasari et al. \(2020\)](#), which showed that 72 respondents (51.8%) with lower education levels had children with stunting, while 67 respondents (48.2%) had children with normal height. In the group with higher education levels, 24 respondents (24.5%) had children with stunting, while 74 (75.5%) had children with normal height. Statistical tests showed a significant relationship between the mother's education level and the incidence of stunting ($p\text{-value} = 0.000$, $p < 0.05$).

Relationship between Number of Children and Stunting Incidence

Based on the characteristics of the number of children in the intervention group with the number of child 1 being 6 people (20.0%), child 2 being 18 people (60.0%), child 3 being 6 people (20.0%), child 4 being 0 (0). While in the control group child 1 was 12 people (40.0%), child 2 was 9 people (30.0%), child 3 was 7 people (23.3%), and child 4 was 2 people (6.7). In the research results [Wahyu et al \(2022\)](#) children who experienced stunting were 19 children or 76.2% among the varying number of respondent children (1-3 children) compared to children who did not experience stunting, only five children or 20.8%. Likewise, in families with four to six children, children who experienced stunting were two children or 66.7% more compared to children who did not experience stunting, only one child or 33.3%. The number of children and the frequency of stunting in children during the COVID-19 pandemic in the Titi Papan Medan Health Center Work Area did not correlate significantly, based on the results of the chi square statistical test ($p\text{ value } 0.545 > 0.05$).

Relationship between Stunting Children and Stunting Incidents

Based on the results of the data above with stunted children, both intervention and control groups did not have stunted children. Based on the results of research that has been carried out on two integrated health posts, namely Kelapa Gading Sehat and Amalia, it can be seen that all respondents do not have stunted children. This can be seen because the fulfillment of nutrition given to children is very good. because stunting can be caused by a lack of nutritious food intake and lack of learning. The success of these two integrated health posts can be an example for other integrated health posts in preventing stunting. The importance of education provided can help mothers in paying attention to toddlers in the future.

Analysis of the Influence Before and After Healthy Food Education on Mothers' Motivation to Prevent the Risk of Stunting in the Animation Video and Booklet Groups.

Based on the results of the study on the effectiveness of education about healthy food on mothers' motivation in preventing the risk of stunting in the Animation Video and Booklet Group with 60 respondents divided into the Animation Video group of 30 people and the control group at the Amalia Posyandu of 30 people. In this study, it can be seen from the average value of the respondents in the Animation Video Group before being given education with a score 35.8 and after the education was carried out it increased to a score of 48.9. While in the Booklet group before being given education in the form of Booklets got a score of 36.4 and after the education was carried out it increased to 49.8. Based on the results of the bivariate analysis of motivation before and after being given to the animated video group, the average motivation of mothers before being given health education was 35.8, while after being given health education, the average motivation of mothers increased to 48.9. Based on the results of the paired t-test, a $p\text{ value}$ of 0.000 was obtained with an α value of <0.05 , meaning that there was an influence before and after being given health education using animated videos on maternal motivation in preventing stunting with an average difference of 13.1. Research results ([Hartati et al., 2023](#)) There is a significant influence of health education using audiovisual or animated videos about stunting on mothers' knowledge and increasing the motivation of families with children to routinely check at the Integrated Health Post so that toddlers can be monitored in terms of nutrition and development with age to avoid stunting. In the study ([Erika et al., 2023](#)).

The results obtained using the Wilcoxon Test obtained $p = 0.001$ ($p < 0.005$) which means that there is an influence of education about stunting on knowledge which is able to increase the motivation and interest of mothers in learning media and is also able to help respondents improve their understanding, which is presented in the form of image media. Based on the results of the bivariate analysis of motivation before and after being given to the Booklet group, the average motivation of mothers before being given health education was 36.4, while after being given health education, the average motivation of mothers increased to 49.8. Based on the results of the paired t-test, a p value of 0.000 was obtained with an a value of < 0.05 . This means that there is an effect before and after being given health education using Booklets on maternal motivation in preventing stunting with an average difference of 13.4. From the data above, there is a difference between the respondent scores before and after the intervention is statistically significant. In other words, the intervention of providing education through booklet media to mothers has a significant impact on increasing the respondent scores in the booklet group. This is in line with research (Ajeng, 2022) that the impact of health education learning using booklets gets an average value of the experimental group with a p-value it can be concluded that there is a difference between before and after education using booklets is given with pre and post results getting a value of 27.644 and a standard deviation of 14.352 and a p-value of 0.000. In the research conducted Sartika & Purnanti (2021).

The results obtained before and after education using booklets showed effective results, where seen from the results of the paired t-test, $p < 0.000$ was obtained, which means that education using booklet media improves cadre skills in detecting stunting. According to research Mediani (2024) cadres in an effort to prevent stunting, it was found that most health cadres have moderate motivation in making efforts to prevent stunting, and some cadres have high motivation in preventing stunting. From the theory, it states that education using this booklet has many advantages, including being able to provide information easily and the material that has been included in it is complete and easy to understand, the design provided will be more attractive so that it can attract someone to read it, besides that booklets are easier to carry anywhere and anywhere (Rimadina & Herdhianta, 2023). Based on the results of the analysis in both tables, it is concluded that the intervention in providing education through animated videos and booklets to mothers has a significant impact on increasing the score results in both groups. The significant value obtained is below 0.05, therefore there is a real difference between the results of respondents before and after being given education using the two media. Thus, the researcher concluded that education using booklets is more effective in increasing mothers' motivation to prevent stunting compared to using animated videos. The use of this booklet media is able to provide complete, clear, and easy-to-understand information. With a simple form, the information contained in the booklet can help convey material or messages directly and effectively, besides that the booklet can also be read anywhere and anytime. Analysis of Differences Before and After Healthy Food Education on Mothers' Motivation to Prevent the Risk of Stunting in the Animation Video and Booklet Groups Based on the results of data analysis using an independent T-test to compare the post-test scores between the animation video and booklet groups, results were found that showed significant differences between the two groups. Descriptive statistical analysis showed that the booklet group obtained a higher average post-test score ($M = 49.83$) with a standard deviation of 1.341 and a standard error mean of 0.245, while the animation video group obtained a lower average post-test score ($M = 48.93$) with a standard deviation of 1.837 and a standard error mean of 0.335, with each group consisting of 30 participants. Before conducting the T-test, a homogeneity of variance test was first carried out using Levene's Test which produced an F value = 1.463 with a significance of 0.231 ($p > 0.05$), which indicated that the variances of the two groups were homogeneous so that the analysis used the assumption of equal variances assumed. The results

of the T-test showed a t value = -2.167 with degrees of freedom (df) = 58 and a significance value (2-tailed) of 0.034 ($p < 0.05$), which means that there is a statistically significant difference between the post-test scores of the two groups, with a mean difference of -0.900 and a standard error difference of 0.415, where the 95% confidence interval is in the range between -1.731 to -0.069, which further strengthens that education using booklets shows better results compared to using animated videos. It can be concluded that from both groups, namely animated videos and booklets, there is a significant difference showing $\text{sig} < 0.05$ of 0.034. This means that there is a significant difference between the animated video post-test and the booklet post-test. Based on the researcher's assumption that education using booklets has a significant difference in maternal motivation compared to using animated videos. This could happen because the duration of the video is very difficult to remember, in contrast to using booklets which can be read repeatedly and easily observed by respondents. Researchers optimize the use of booklets as a learning medium, improve the quality of animated videos, and conduct further research on diverse groups for more general and effective results.

Analysis of the Effect Before and After Healthy Food Education on Mother's Knowledge in Preventing Stunting Risk in the Animation Video Group and Booklet Group

Based on the results of the Dependent T-Test analysis, it can be concluded that the intervention of providing education through animation video and booklet media to mothers has a significant impact on increasing the respondents' knowledge scores. The significance value obtained is < 0.05 , which indicates a significant difference between the respondents' scores before and after the intervention. In both groups, during the pre-test, the knowledge score for the Animation Video group had a mean of 72.22 with a standard deviation of 13.184. Meanwhile, the knowledge score for the Booklet group during the pre-test had a mean of 74.44 with a standard deviation of 14.503. After the intervention, there was an increase in the Animation Video group from 72.22 to 83.33 (a difference of 11.113), while the Booklet group increased from a mean of 74.44 to 83.61 (a difference of 9.170). Furthermore, there was a decrease in the standard deviation in the Animation Video group (from 13.184 to 10.946) and the Booklet group (from 14.503 to 11.052). This shows significant results with a p -value of 0.000, which is smaller than the significance level of $p < 0.05$, indicating that there is an effect of education using animation video and booklet media on mothers' knowledge about healthy food provision to prevent stunting. Research Dewi, (2021) on the relationship between mothers' knowledge and stunting in toddlers was conducted at UPTD Puskesmas Gianyar, involving 120 mothers of toddlers as subjects. Most respondents were aged between 26 and 30 years, totaling 54 people (45.5%). The analysis conducted using a chi-square test resulted in a p -value of $0.007 < 0.05$, indicating a significant relationship between mothers' nutrition knowledge and stunting in toddlers. These results align with the research Ningtyas et al., (2020) entitled "Mothers' Knowledge is Related to Stunting in Toddlers in the Working Area of the Karangayu Health Center, Semarang City." The analysis showed that 52.3% of toddlers with stunting came from mothers with poor nutrition knowledge, while only 16.9% of toddlers with stunting had mothers with good nutrition knowledge. The statistical test revealed a p -value of 0.000 ($p = 0.05$), with a 95% confidence interval for the odds ratio (POR) of 5.285, between 2.285 and 12.693. Thus, it can be concluded that there is a significant relationship between mothers' nutrition knowledge and stunting in toddlers in the working area of the Karangayu Health Center. Lehan & Utami, (2023) The relationship between mothers' knowledge and stunting in toddlers revealed that most mothers with good knowledge were mothers of toddlers who experienced stunting, totaling 40 people (81.6%). The chi-square analysis resulted in a p -value of 1.000 (> 0.05), showing no relationship between mothers' knowledge and stunting in toddlers. From this analysis, the researcher assumes that the educational intervention through animation video and booklet media to mothers significantly contributes to the improvement of

respondents' knowledge scores, as seen from the difference in mean scores before and after the intervention showing a significant improvement. Furthermore, there was a variation in the respondents' scores reflected in the decrease in standard deviation, which indicates that the respondents' scores became more consistent. The significance values from the t-test for both groups were below 0.05, indicating that the difference between the scores before and after the intervention is statistically significant. Both the animation video and booklet media were proven to be effective in increasing mothers' knowledge, although there was a slight difference in the mean scores between the two groups after the intervention, with the animation video group showing a larger increase. Therefore, it can be concluded that the educational intervention provided had a significant positive impact on the respondents' knowledge.

Analysis of the Difference in Healthy Food Education on Mother's Knowledge Between the Animation Video Group and the Booklet Group in Karang Anyar Village

Based on the results of the Independent t-test analysis, data from two groups with the same sample size ($n=30$) were obtained. The Animation Video group recorded an average score of 83.33 ($SD=10.945$), while the Booklet group had an average score of 83.61 ($SD=11.051$). Levene's test for homogeneity of variances showed a significance value of 0.849 ($p>0.05$), indicating that the variances of the two groups are homogeneous. The Independent Samples Test analysis resulted in a t-value of -0.099 with a significance of 0.922 ($p>0.05$). This shows that there is no significant difference between the use of Animation Video and Booklet as learning media. The very small mean difference (-0.28000) with a 95% confidence interval (5.96468 to 5.40468) that includes zero further reinforces that both learning methods are effective. Therefore, both Animation Video and Booklet can be used as alternative learning media with equivalent effectiveness. Although the Booklet group has a slightly higher average, both media can be considered equally effective, and neither is significantly superior. The choice between the two can be adjusted according to the learning needs and conditions without worrying about differences in effectiveness. This finding has practical implications, indicating that educators or educational institutions have the flexibility to choose between learning methods, either using Animation Video or Booklet, as both have proven to be equally effective in achieving the desired learning outcomes. The results indicate no significant difference between the two groups. The researcher assumes that with the same sample size ($n=30$), homogeneous variances, a significance value of $p>0.05$, and a small mean difference (-0.28000), the use of Animation Video and Booklet as learning media has equal effectiveness in achieving learning goals. Therefore, educators have the flexibility to choose either learning method without significantly affecting the learning outcomes. It is suggested that future research consider using both Animation Video and Booklet as learning media, as both have proven to be equally effective.

CONCLUSION

The study concluded that there was a significant difference between mothers' knowledge and motivation regarding healthy food to prevent stunting before and after being given animated videos and booklets, and there was no difference between the use of animated videos and booklets on mothers' knowledge and motivation regarding healthy food to prevent stunting. It is recommended that community health centers develop stunting prevention programs that are easy for mothers to understand. This can be achieved through regular child checkups, providing nutritional information in simple language, free services, providing additional vitamins, and monitoring children's health from an early age. Furthermore, future researchers are advised to increase the sample size to obtain results that more accurately reflect the actual situation. Other factors, such as education level, socioeconomic status, and previous

experience with educational media, also need to be considered. Further research would be useful to assess the long-term impact of educational intervention.

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CONFLICTS OF INTEREST

The authors declare that this study is free from any conflicts of interest.

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