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The Effect of Education Through Video on Retaining Knowledge of Pregnant Women About Nutrition to Prevent Stunting

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During pregnancy, a mother will experience various physical and mental changes that will affect her life. In pregnancy, nutrition is vital because by getting optimal nutrition, pregnant women will stay healthy and prevent babies from experiencing Stunting. This study aims to see the effect of education through video media on the knowledge retention of pregnant women to prevent Stunting. This study used a quasi-experimental design with a pretest-posttest design with a control group design, where respondents were divided into two groups, the treatment group: using video media and the control group: using booklet media. Data analysis using sample test paired t-test. A total of 60 respondents participated in this study. The results showed a significant effect on knowledge retention of pregnant women before education, after education, two weeks after education and one month after. The research results obtained a significant level of 0.000 (ρ value <α), which means that education through video media and booklet media affected the retention of pregnant women's knowledge about nutrition to prevent Stunting. Family knowledge determines the nutritional status of pregnant women and prospective babies. Health workers need to develop health education for families to prevent Stunting.

Kata kunci:

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A B S T R A K

Pada masa kehamilan, seorang ibu akan mengalami berbagai macam perubahan baik dari segi fisik maupun segi mental yang akan mempengaruhi kehidupannya. Dalam proses kehamilan gizi memiliki peranan yang sangat penting sebab dengan mendapatkan gizi yang optimal ibu hamil akan tetap sehat dan dapat mencegah bayi mengalami *stunting*. Penelitian ini bertujuan untuk melihat pengaruh edukasi melalui media video terhadap retensi pengetahuan ibu hamil untuk mencegah *stunting*. Penelitian ini menggunakan desain *quasi experiment* dengan rancangan *pretest-posttest with control group design*, dimana responden dibagi menjadi 2 kelompok, kelompok perlakuan: dengan menggunakan media video dan kelompok kontrol: dengan menggunakan media *booklet*. Analisa data menggunakan uji sampel *paired t-test*. Sejumlah 60 responden yang turut berpartisipasi dalam penelitian ini. Hasil penelitian menunjukkan bahwa terdapat pengaruh signifikan retensi pengetahuan ibu hamil sebelum pemberian edukasi, setelah pemberian edukasi, 2 minggu setelah edukasi dan 1 bulan setelah pemberian edukasi dengan nilagi signifikansi sebesar 0.000 < 0.05 atau (value <), artinya ada pengaruh pemberian edukasi melalui media video dan media *booklet* terhadap retensi pengetahuan ibu hamil tentang gizi untuk mencegah *stunting*. Pengetahuan keluarga menentukan status gizi ibu hamil dan calon bayi. Penting bagi tenaga kesehatan untuk mengembangkan pendidikan kesehatan bagi keluarga untuk mencegah *stunting*.

INTRODUCTION

Pregnancy is a particular condition for a woman as a mother-to-be because, during pregnancy, physical changes will affect her life. Diet and lifestyle can support the development and growth of the embryo in the mother's womb (Gani et al., 2021). Pregnancy impacts increasing energy metabolism. Therefore the need for energy and other nutrients will increase during pregnancy. This increase in energy and nutrition is needed for the development and growth of the embryo, the increase in the size of the organs in the womb, and changes in the composition and metabolism of the mother's body so that a deficiency of certain nutrients needed during pregnancy can cause the embryo to develop imperfectly (Setiawan et al., 2018). Appropriate nutritional consumption is also needed to support maximum growth in pregnant women (Lulu Chirande, 2015). The nutritional needs of the fetus are very much needed because they can affect future development and growth, both cognitively and physically and mentally. On the other hand, poor or poor nutrition in the early years of growth can result in irreversible consequences, namely a condition in which the baby experiences stunted development, often referred to as stunting (Nurcahyani, 2020).

Stunting is defined as a physical development disorder measured by height for age and caused by chronic malnutrition so that children become shorter than their age (Esti Yunitasari, 2021). Stunting is a form of growth disorder due to malnutrition that lasts from pregnancy to 24 months of age (Hijrawati, 2021). Stunting or height unsuitable for age is caused by inadequate nutritional intake over a long period. One of the symptoms of stunting caused is impaired physical growth, characterized by a decrease in growth speed (Gladys, 2018). Stunting occurs when the fetus is still in the womb and only appears when the child is two years old. Stunting events can pose several risks, such as morbidity and mortality and inhibition of motor and mental skills.

The case of stunting is a new issue that has an unfavourable impact on nutrition cases in Indonesia (Praba Diyan Rachmawati, 2020) because it affects children's physical and functional bodies and causes high child morbidity rates. In addition, stunting has an impact on stunting growth and development, which causes a decrease in learning ability which results in poor cognitive abilities in the future, decreased school achievement, and reduced potential for the development of a nation (Cesar G Victora, 2008; CK Nyamasege, 2020) . Moreover, the stunting incident has become the focus of the World Health Organization (WHO) to be resolved immediately. Stunting is influenced by various factors, both maternal and child factors. Several studies suggest factors that influence stunting, including parental education and knowledge, the mother's age, socioeconomic conditions, nutritional status of pregnant women, and infectious diseases during pregnancy (Anthony Wemakor, 2018; Ayesha Sania, 2015; Coretta M. P. Jonah, 2018; Mikawati, 2019; Olusegun Fadare, 2019; Santosa Agus, 2022). The mother is the only source of nutrition for the developing fetus in the womb, so the role of the mother is the main factor in preventing stunting (Ariyanti Saleh, 2021). Several studies describe factors related to stunting that have often been carried out, such as looking at diet and lifestyle.

Another important factor is a family function. Family functions can influence the emergence of a healthy lifestyle in the family, including meeting mothers' needs for proper nutrition during pregnancy (Ty Beal, 2019). Excellent family function will affect pregnant women in prioritizing their nutrition. Mothers play an important role in providing nutrition to the fetus they contain. Fulfilment of proper nutrition during pregnancy can affect the nutritional status of children in the future. Pregnant women need adequate nutrition through nutritional supplements (iron or Fe tablets) and health monitoring. Pregnant women who have good nutritional status will give birth to well-nourished children. Apart from the roles and functions of the family, the mother's knowledge is still the most fundamental problem affecting stunting (Praba Diyan Rachmawati, 2020). According to research (Melati et al., 2021) one of the factors causing stunting is the mother's lack of knowledge. The level of a mother's knowledge about fulfilling child nutrition is fundamental in preventing stunting.

Good nutrition knowledge is essential in overcoming poor diet and food intake. The most important information for mothers during pregnancy is the type of food that must be consumed and how to prepare food in the right amount and mix, which will help meet the mother's nutritional needs during pregnancy (Mahama Saaka, 2021). Health education interventions are the key to providing the correct information for mothers to increase their knowledge; therefore, empowering women, especially pregnant women, with nutrition knowledge and skills has more significant potential to impact fulfilling nutrition during pregnancy positively. Research (Nurcahyani, 2020) found that one of the efforts made to increase pregnant women's knowledge is to provide education. Education is part of health education activities. *Health education* is a learning process for individuals, families, groups, and communities to change unhealthy behaviours to healthier patterns. The health education process involves several components, including teaching and learning strategies and defending decisions to change action or behaviour. Health education also focuses on changing behaviour to improve their health status. Nutrition education generally aims to increase nutrition knowledge so that it can influence knowledge and practices towards better nutrition fulfilment, so that mother's knowledge about nutrition is fundamental for a good pregnancy and to improve the nutritional status of babies born (Amy Webb Girard, 2012; Mahama Saaka, 2021; Patricia Miranda Farias, 2020). Nutrition education aims to change behaviour that pays less attention to nutritional intake to pay more attention to nutritional intake. Therefore, nutrition education and editing events are closely related (Miftahul Jannah, 2021).

Along with the times, the media for delivering health education or health promotion can be provided through audiovisual media. Audiovisual media is possible as a medium for increasing knowledge. The audiovisual method is a method that uses a combination of the senses of sight and the sense of hearing, such as film or video (Wardan Diadjeng, 2022). Video is an audiovisual medium that can express objects and events as they are; by using videos, one can understand learning messages more meaningfully so that the information conveyed through the video can be understood as a whole. The advantages of video media are that it attracts the target's attention, the target can obtain information from various sources, saves time and can be repeated at any time. The audio volume can be adjusted when the presenter wants to explain something (Setiawan, 2018). Audiovisual media has advantages over other media, which are currently widely used in various activities because it presents images and sounds simultaneous, making it easier for the general public to understand better the process of

health education or education activities (Rini Ernawati, 2021). Research conducted by (Constantinos Nicolaou, 2020) shows that audiovisual media can be played repeatedly to improve people's understanding or knowledge related to health or education.

METHODS

This research was conducted at 2 Community Health Centers in the West Seram Island Region (SBB) in October 2022. The subjects of this study were all pregnant women who were in the area of the Health Center. The sampling technique used is the total sampling technique that meets the inclusion criteria. The inclusion criteria in question are pregnant women who have never received nutrition education for pregnant women using video media and booklets to prevent stunting, pregnant women who read and write and are in good health. The sample in this study consisted of 60 respondents divided into two groups. The sample size for the treatment group was 30 people, and the control group was 30 people.

This study uses a quasi-experimental research type with a pretest-posttest design with a control group design. Quasi-experimental research aims to reveal the effect of the intervention on the subject and measure the results of the intervention. This study compares the effect of providing education through video media on the retention of pregnant women's knowledge about nutrition to prevent stunting. This research was conducted from May to October 2022, starting with preparing proposals, collecting data, and research, processing findings and preparing reports. Data collection was carried out in October 2022. Respondents were divided into two groups: the treatment group and the control group. Before education is carried out, pregnant women are allowed to fill out a pre-test sheet, after which education is given for 60 minutes. After the education provision has been completed, pregnant women can fill out the post-test sheet. The post-test was carried out three times, the first at the end of the education, the second post-test after two weeks of providing education and the third post-test after a month of providing education.

Tool to measure knowledge retention of pregnant women by using a questionnaire. The questionnaire has been calculated for the valid and reliable Cronbach alpha test of 0.949, so the questionnaire is valid for use. The questionnaire contains 32 statements, with answer choices one = actual and 0 = false. Data analysis used univariate to see the distribution of frequencies, while bivariate analysis used paired t-tests to see the effect of giving education to each group. His research passed an ethical test by the ethical committee of the faculty of health sciences at Brawijaya University on October 4, 2022, with number: 5059/UN10.F17.10/TU/2022.

RESULTS AND DISCUSSION

Based on table 1, it shows that of the 30 respondents in the treatment group, most of the respondents' ages were 25-34 years (53.3%), and in the control group of 30 respondents, most of the respondents' ages were 35-44 years (46.7%). Occupation of the 30 respondents in the treatment group, most of the work of IRT respondents (76.7%) and in the control group of 30 respondents, most of the work of IRT respondents (60%). The educational level of the 30 respondents in the treatment group was primarily high school (63.3%), and in the control group of the 30 respondents, most were high school (66.7%) (table 1).

Table 1
Characteristics of respondents based on age, education level, and occupation.

Characteristics	Treatment		Control	
Group	n	%	n	%
Age				
15-24 years	6	20,0	2	6,7
25-34 years	16	53,3	12	40,0
35-44 years	8	26,7	14	46,7
45-54 years	0	0	2	6,7
Education				
SMP	5	16,7	3	10,0
SMA	19	63,3	20	66,7
DIII	3	10,0	4	13,3
S1	3	10,0	3	10,0
Profession				
Housewife	23	76,7	18	60,0
Self-employed	3	10,0	3	10,0
Government	2	6,7	5	16,7
employees	2	6,7	4	13,3
Trader				
Total	60			100,0

Table 2
Characteristics of Respondents Based on Obstetric History of Pregnant Women

Characteristics	Treatment		Control	
	n	%	n	%
Pregnancy status				
Pregnancy 1	10	33.3	8	26.7
Pregnancy 2	10	33.3	7	23.3
Pregnancy 3	5	16.7	9	30.0
Pregnancy 4	5	17.7	4	13.3
Pregnancy 5	0	0	1	3.3
Pregnancy 6	0	0	1	3.3
Number of living				
children	10	33.3	8	26.7
0	10	33.3	7	23.3
1	5	16.7	10	33.3
2	5	16.7	3	10.0
3	0	0	2	6.7
4				
Weight while pregnant				
< 50 kg	1	3.3	0	0
50-60 kg	13	43.3	11	36.7
61-70 kg	12	40.0	15	50.0
71-80 kg	3	10.0	4	13.3
81-90 kg	1	3.3	0	0
Weight when not				
pregnant	2	6.7	3	10.0
< 50 kg	22	73.3	20	66.7
50-60 kg	4	13.3	6	20.0
61-70 kg	1	3.3	1	3.3
71-80 kg	1	3.3	0	0
81-90 kg				
Total	60		100,0	

Based on table 2, of the 30 respondents in the treatment group, most of the pregnancies were the first contro two

pregnancies, with a percentage of 33.3%. In the control group of 30 respondents, most of the pregnancies were third pregnancies, with a percentage of 30.0%. In the data on the number of living children from 30 respondents in the treatment group, most of the number of living children was 1 and 0 (because it was the first pregnancy) with a percentage of 33.3%. In the control group of 30 respondents, most of the living children were 2, with a percentage of 33.3%. In the data on the respondents' weight during pregnancy from 30 respondents in the treatment group, most of the respondents' weight during pregnancy was 50-60 kg with a percentage of 43.3%, and in the control group of 30 respondents, most of the respondents' weight during pregnancy was 61-70 kg with a percentage 50.0%. In the non-pregnant weight data of the 30 respondents in the treatment group, most of the respondents' non-pregnant weight was 50-60 kg with a percentage of 73.3%, and in the control group of 30 respondents, most of the respondents' non-pregnant weight was 50- 60 kg with a percentage of 66.7%. (Table 2).

Table 3
Results of Paired t-test Pretest and Post-Test Effects of Providing Education Through Video Media and Booklet Media on Knowledge Retention of Pregnant Women

Test results paired t-test	Treatment Group (Video)			
	Mean	Std. Deviation	Std. Error Mean	Sig.(2-tailed)
Treatment Pretest vs Treatment Posttest 1	-12.86667	3.79413	.69271	.000
Treatment Pretest vs Treatment Posttest 2	-14.53333	3.12645	.57081	.000
Treatment Pretest vs Treatment Posttest 3	-12.16667	3.96609	.72411	.000
	Control Group (Booklet)			
Pretest Control vs Posttest Control 1	-11.73333	4.89851	.89434	.000
Pretest Control vs Posttest Control 2	-12.53333	5.13093	.93678	.000
Pretest Control vs Posttest Control 3	-7.76667	5.13731	.93794	.000

The results of the bivariate test showed a significant effect of the provision of education through video media and booklet media on knowledge retention of pregnant women with a significance value (p-value) = 0.000 <0.05.

The results of this study follow the research conducted (Saban *et al*, 2019) There are differences in knowledge retention in the group given education through video media and the education group through booklets. Through video compared to booklets, educational media can make it easier for someone to capture or receive material delivered by the material provider. According to (Daryanto, 2020) video media has advantages, including that the message conveyed attracts more attention, the visual image displayed can convey the message more quickly, and delivering messages through audiovisual can motivate someone to concentrate more and can help develop imagination.

Sudarmi (2021 found that the effectiveness of video media in delivering material to pregnant women's classes is more effective for increasing knowledge than using booklets, and the influencing factor is the level of education. The effectiveness of delivering educational material using video media in this study was also strengthened by the mother's educational background, with 63.3% high school education. Mothers with higher education will directly impact the absorption of mothers to interpret the material provided more quickly. This follows the opinion (Surjadi *et al*, 2021) which conveys that a person's knowledge, the higher, the more knowledge that individual will acquire.

In addition to educational factors, a person's age will significantly affect his knowledge. The study's results noted that the most dominant age in absorbing and retaining knowledge is the productive age, namely 25-34 years. This follows research (Yuliana, 2021) which states that productive age illustrates that a person will be more mature in receiving and managing information to develop his knowledge. Age will affect one's comprehension and mindset. As you get older, your comprehension and mindset will also develop so that the knowledge you get will improve.

The provision of health education is an activity carried out by health workers to socialize, to grow self-confidence in the community so that people are aware, know and understand. They can do or apply it in their daily lives. Information conveyed through educational media is expected to be adequately absorbed to increase the knowledge possessed. (Notoatmodjo, 2019) states that one factor that influences a person's knowledge is the information provided.

Increasing knowledge retention through video media is more effective than other media. After all, video media is one of the exciting and not dull media because video media not only displays visuals but also uses audio-visuals so that recipients of the information are not easily bored because pictures accompany this education. Moreover, explanations so that it is easy to understand so that knowledge retention is better (Nurita, 2018).

Through video media, a person can understand learning more meaningfully so that the information conveyed through video media can be understood as a whole. The advantages of video media are that it attracts the target's attention, the target can obtain information from various sources, saves time and can be played back anytime and anywhere. The audio volume can be adjusted when the presenter wants to explain something (Setiawan, 2018).

CONCLUSIONS AND SUGESSTION

There is a significant influence on the provision of education through video media on the retention of pregnant women's knowledge about nutrition to prevent stunting. The use of video media is very effective for increasing knowledge. For this reason, the application of education using video media can be carried out by nurses providing education related to health problems experienced to achieve optimal health services.

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ETHICAL CONSIDERATIONS

This research was approved by the Health Research Ethics Committee, Faculty of Health Sciences, Universitas Brawijaya Number 5059/UN10.F17.10/TU/2022.

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We certify that this article has no actual or potential conflicts of interest.

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