THE EFFECTIVENESS OF VIDEO AND BOOKLET MEDIA EDUCATION ON THE KNOWLEDGE, ATTITUDES AND BEHAVIOR OF PREGNANT WOMEN REGARDING GESTATIONAL DIABETES AT BANGKALA HEALTH CENTER, MAKASSAR CITY

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ABSTRACT

Gestational diabetes is one of pregnancy complication. This research aims to determine the effectiveness of video and booklet media education on the knowledge, attitudes and behavior of pregnant women about gestational diabetes at the Bangkala Community Health Center, Makassar City. The research design used is quasi experimental, namely using a pretest and posttest two group design. The population for this research is the average number of pregnant women who visit ANC at the Bangkala Health Center every three months from May-July 2023, namely 149 people. The data collection technique was purposive sampling with a total sample of 60 respondents. The analysis used several statistical tests, including Wilcoxon, Mann-Whitney, and Independent T Test. The results of the research showed that the effectiveness of video media on knowledge was 97.38% and was in the effective category, while the effectiveness of booklet media was 83.34% and was in the effective category. The effectiveness of video media on attitudes was 81.91% and was in the effective category, while the effectiveness of booklet media was 58.47% and was in the category effective enough. The effectiveness of video media on behavior is 88.77%, which is in the effective category, while the effectiveness of booklet media on behavior is 91.07% and is in the effective category. Conclusion: The effectiveness of video and booklet media is not significantly effective in increasing the knowledge of pregnant women with an effect size of 0.03. The effectiveness of Video and Booklet media is significantly ineffective for the attitudes of pregnant women, or in other words, it has a small effect size with a value of 0.23. The effectiveness of Video and Booklet media is significantly ineffective for the behavior of pregnant women with a large effect value of 0.25. It is recommended that future researchers be able to examine the effect of the education provided on increasing blood glucose levels in pregnant women after the intervention.

ARTICLE INFO

Keywords:
Gestational Diabetes; Video and Booklet Media Education; Knowledge, Attitudes and Behavior of Pregnant Women

EFEKTIVITAS EDUKASI MEDIA VIDEO DAN BOOKLET TERHADAP PENGETAHUAN, SIKAP, DAN PERILAKU IBU HAMIL TENTANG DIABETES GESTASIONAL DI PUSKESMAS BANGKALA, KOTA MAKASSAR

ABSTRAK

Diabetes gestasional yaitusalah satu bentuk dari komplikasi kehamilan. Penelitian ini bertujuan Untuk mengetahui efektivitas edukasi media video dan booklet terhadap pengetahuan,sikap dan perilaku ibu hamil tentang diabetes gestasional di Puskesmas Bangkala Kota Makassar. Desain penelitian yang digunakan yaitu Quasi experimenalyaitu dengan menggunakan pretest and posttest two grup design. Populasipenelitian ini adalah rata-rata ibu hamil yang melakukan kunjungan ANC di Puskesmas Bangkala per tiga bulan terhitung sejak Mei-Juli 2023 yaitu sebanyak 149 orang. Teknik pengumpulan data dengan Purposive sampling dengan jumlah sampel 60 responden. Analisis yang digunakan menggunakan beberapa uji statistik, antara lain Wilcoxon, Mann-whitney, dan Independent T Test. Hasil penelitian didapatkan bahwa Efektivitas media video terhadap pengetahuan sebesar 97.38%dan masuk kategori efektif, adapun efektivitas media booklet sebesar 83.34% dan masuk kategori efektif.Efektivitas mediavideo terhadap sikap sebesar 81.91% dan masuk kategori efektif,sedangkan efektivitas mediabooklet sebesar 58.47% dan masuk kategori cukup efektif. Efektivitas media video terhadap perilaku sebesar 88.77%masuk kategori efektif, Adapun Efektivitas media booklet terhadap perilaku sebesar 91.07% dan masuk dalam kategori efektif. Kesimpulan Efektivitas media Video dan

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Booklet secara signifikan tidak efektif dalam peningkatan pengetahuan ibu hamil dengan besar nilai efek 0,03. Efektivitas media Video dan Booklet secarasignifikan tidak efektif untuk sikap ibu hamilatau dengan kata lain memiliki ukuran efek yang kecil dengan nilai 0,23.Efektivitas media Video dan Booklet secarasignifikan tidak efektif untuk perilaku ibu hamil dengan besar nilai efek sebesar 0.25. Disarankan Bagi peneliti selanjutnya diharapkan dapat meneliti pengaruh dari edukasi yang diberikan peningkatan kadar glukosa darah ibu hamil setelah intervensi.

Kata kunci:
Diabetes Gestasional; Edukasi dan Media Video; Booklet; Pengetahuan; Sikap dan Perilaku Ibu Hamil

Pendahuluan

Gestational diabetes is one of the complications of pregnancy. The incidence of gestational diabetes varies between 3-5% of all pregnancies (Kementerian Kesehatan Republik Indonesia, 2022). Pregnant women often have hyperglycemia, which can be harmful to both the mother and the fetus. There are other risks that can arise, such as the possibility that the woman will give birth before the scheduled time or a premature labor will be advised due to the enormous size of the baby. Uncontrolled blood sugar levels during pregnancy raise the possibility of defective kids born. (Yulizawati & et al., 2017).

According to global data from 2021, hyperglycemia occurred during pregnancy in over 21.1 million (16.7%) live births to women (Armini et al., 2016). Comparatively, the prevalence in Southeast Asia is 28.0%. This demonstrates that Southeast Asia has the highest rate of gestational diabetes worldwide. North America and the Caribbean came in second in the globe at 20.7%, after Southeast Asia, and South and Central America came in third at 13.7% (IDF Diabetes Atlas 10th Edition, 2021).

With a frequency of 11.3% in 2018, Indonesia ranked seventh out of ten countries worldwide (Kementerian Kesehatan, 2020). The prevalence of hyperglycemia during pregnancy rises quickly with age, peaking at 42.3% in women between the ages of 45 and 49. This indicates that among women in this age bracket who are not pregnant, diabetes is also rather common. Younger women have higher fertility rates as a result, and 9.8 million cases of gestational diabetes, or nearly half of all cases, include women under 30. (IDF Diabetes Atlas 10th Edition, 2021).

In addition to age, there are a number of other pregnancy risk factors that can result in gestational diabetes. Glucosuria during pregnancy, obesity, excessive weight gain during pregnancy, a family history of diabetes, a history of gestational diabetes in prior pregnancies, a history of infant death in utero, a history of giving birth to a baby with congenital abnormalities, and a history of giving birth to large babies (body weight >4000 grammes) are some of these risk factors (Kurniawan, 2017).

Approximately between 10–25% of pregnancies in Indonesia do not have a hypergicemia diagnosis (Kurniawan, 2017). This is due to the fact that there are still health service facilities that do not screen for diabetes in pregnant women. Out of 33 Indonesian provinces, South Sulawesi has the tenth-highest prevalence of diabetes in 2018 (1.8%) (Kementerian Kesehatan, 2020). Sulawesi is ranked fourth in Indonesia in terms of pregnancy visit coverage (K4) in 2021, with 93.4% of visits. This indicates an increase in the number of pregnant women. (Kementerian Kesehatan RI, 2022b).

Data from BPS Makassar City shows that in 2020 there were 29,499 pregnant women; in 2021, that number rose to 29,634; and in 2022, there were 29,789 pregnant women (Badan Pusat Statistik Kota Makassar, 2023). This indicates that the number of pregnancies is rising every year, which may lead to an increase in the incidence of gestational diabetes.

Ideally, pregnant women undergoing antenatal care (ANC) ought to be evaluated for gestational diabetes so that medical professionals can promptly prepare follow-up

interventions to the mother's needs. Nonetheless, some medical facilities recommend just screening for gestational diabetes in people who are at risk. For this reason, it's critical to offer education that emphasizes identifying diabetes throughout pregnancy.

In order to manage diabetes risk factors and stop the rising prevalence of the disease, particularly in pregnancy, education will help people develop understanding through improving their knowledge, attitudes, and behaviour. Having more knowledge improves the effectiveness and efficiency of diabetes prevention attitudes and behaviour. There are other ways to teach, such as through videos and booklets. Using audio and visual presentations, the video technique can be replayed at every moment to assist participants in understanding the instructional material presented. Not only may booklet media be utilised for education, but video media can also be applied; because booklets are thinner and smaller than books overall, they are portable and can be read at any place and anytime (Andyana Rehusisma et al., 2017; BPTP, 2017).

Based on a literature study conducted by In reference to the impact of baby massage on mother knowledge in Amplas, the study's findings indicated that maternal knowledge about infant massage increased from 60.0% to 76.7% before and after the promotion of leaflets, and from 60.0% to 96.7% before and after the promotion of audiovisual media. Additionally, the average mean of audio-visual media was higher than that of leaflets, at 17.80%, indicating that audio-visual media is more effective at increasing knowledge than leaflets. Research by (Arya Mamonto et al., 2021) also demonstrates that attempts to avoid Gestational Diabetes Mellitus in first-trimester pregnant women are influenced by health education provided by booklet media, with a p-value of 0.000.

Literatur review studies carried out by (Indah & Junaidi, 2021) Regarding the increase in student knowledge and understanding, research findings indicate that student knowledge regarding taste and smell increased to 83.6%, while student knowledge about sikap increased to 84.5%. Prior to dance after penyuluhan, there is an increase in student understanding and sikap about body parts and flavours ($p < 0.05$). In addition to that, there is a significant difference in the results of the study using posters and videos ($p < 0.05$).

Literatur review studies carried out by (Anggraini, 2016) addressing diabetes preventive behaviour and quality of life among inhabitants of Padukuhan Kasihan revealed that educational materials such as pamphlets and videos are equally efficient in promoting healthy lifestyle choices and diabetes mellitus prevention behaviour in the community.

According to preliminary data from June 2023, there were 183 pregnant women in the Bangkala Community Health Centre overall. There were 154 visits for prenatal care (ANC). (Puskesmas Bangkala, 2023).

According to the findings of the preliminary survey, 20 pregnant women visited the Bangkala Community Health Centre at the start of June 2023 for an antenatal care (ANC) visit. A total of 17 pregnant women lacked adequate information because they were unaware that pregnancy could result in diabetes. They believed that weight gain in expectant mothers was normal given the presence of a fetus in the womb and that the rise in dietary modifications was solely caused by these hormone fluctuations. Although three of them were barely aware of the occurrence, they had heard of gestational diabetes, they noted that a mother's or partner's genetic variables could cause gestational diabetes. This demonstrates that pregnant women still have a low degree of knowledge about gestational diabetes. Pregnant women with low levels of awareness are more likely to engage in dangerous attitudes and behaviors, which increases the possibility that they may develop gestational diabetes without realizing it.

Examining the different research findings reveals that a number of earlier studies have explored the use of video media and booklets to assess the knowledge, attitudes, and behaviour of pregnant women. Nevertheless, these studies were conducted in isolation, focusing on a single variable in pregnant women or utilizing media education. Examining pregnant women's attitudes and behaviours concurrently is an intriguing area for further research because gestational diabetes is a common condition that can have negative effects on both the mother's and the fetus's health, making education about the condition a priority during antenatal care (ANC) visits. to broaden understanding so that prompt precautions can be taken. The goal is to raise awareness of gestational diabetes in order to influence mothers' attitudes and behaviours and stop the disease from developing. Consequently, studies on "The effectiveness of video and booklet media education on the knowledge, attitudes, and behaviour of pregnant women on gestational diabetes at the Bangkala City Health Center.

Research Method

The research design used is quasi experimental using a pretest and posttest two group design. This research was carried out by giving group A treatment with video media, while group B was given education using booklet media. This type of quasi-experimental research is determined on the grounds that this research is in the form of educational research that uses humans as research subjects. The population in this study was 149 pregnant women who visited the ANC at Bangkala Community Health Center every three months from May-July 2023. The technique used for sampling was purposive sampling with a total of 60 pregnant women as respondents.

Primary data in this research is data obtained directly from respondents' answers via a questionnaire for a quantitative approach which includes name, address, age, weight, gestational age, education, mother's employment status, history of abortion, history of giving birth with a large baby, history of hypertension. diabetes mellitus history, knowledge, attitudes and behavior. The secondary data in this research is in the form of data obtained from books, journals, the Makassar City Health Service and Bangkala Health Center

Before the intervention was carried out, a pretest was carried out in both groups, then continued with the provision of education using video media and booklet media in the experimental group. After the intervention was completed, a posttest was carried out 4 weeks later.

After collecting the data, the data is then processed using the Excel computer program and statistics applications. Data processing uses univariate and bivariate analysis. The statistical test analyzes used include Wilcoxon, Mann-Whitney and Independent T Tests.

To determine whether or not the data is regularly distributed, a normality test is performed prior to the bivariate test. Since there are more than 50 samples in this study, the Kolmogorof-Smirnov normality test was used.

In addition, a homogeneity test is used to identify whether two or more sample data groups are from a homogenous population, meaning that their variances are equal. The Levene test is the homogeneity test that was used in this study. If the p-value is less than 0.05, the distribution of the data is homogeneous.

Bivariate analysis was carried out to find out :

a. Differences between group A and group B mean increases in knowledge, attitudes, and behavior about gestational diabetes before and after the intervention. The Paired T-test is used in hypothesis testing if the data is regularly distributed (parametric test),

whereas the Wilcoxon test is used in non-parametric testing (non-parametric test). If the p-value in the Wilcoxon and Paired T-Tests is less than 0.05, then there is a significant difference in the knowledge, attitudes, and behavior of groups A and B before and after they received education.

b. A comparison of the average changes in group A and group B's knowledge, attitudes, and behaviour about gestational diabetes. The Independent T-Test hypothesis test should be used if the distribution is normal (parametric test); if not, the Mann Whitney hypothesis test should be used (non-parametric test). When comparing groups A and B, there is a significant difference in the increase in knowledge, attitudes, and behaviour if the p-value in the Independent T-Test and Mann Whitney test is less than 0.05.

Health Code of Ethics

This research has obtained ethical clearance from the Health Research Ethics Commission, Faculty of Engineering and Health Technology, Jendral Achmad Yani University with number 01/KEPK/FITkes-UNJANI/IX/2023

Research result

Univariate Analysis

Univariate analysis is to look at the frequency and proportion distribution of the research variables (Nursalam, 2017).

a. Description of Respondent Characteristics

Table 1
Frequency Distribution of Characteristics of Pregnant Women at the Bangkala Community Health Center, Makassar City 2023

Characteristics	Group		Homogenity
	Video	Booklet	
Age			
<30 years	18 (60%)	18 (60%)	0,864*
35-36 years	8 (26,7%)	7 (23,3%)	
>36 years	4 (13,3%)	5 (16,7%)	
Weight Increase			
0-15 kg	30 (100,0%)	29 (96,7%)	0,326*
16-20 kg	0 (0,0%)	1 (3,3%)	
Age of Pregnancy			
<24 minggu	30 (100%)	28 (93,3%)	0,161*
25-29 minggu	0 (0,0%)	4 (6,7%)	
Education			
JUNIOR HIGH SCHOOL	0 (0,0%)	3 (10,0%)	0,003*
SENIOR HIGH SCHOOL	27 (90,0%)	16 (53,3%)	
Diploma	2 (6,7%)	5 (16,7%)	
Bachelor	1 (3,3%)	6 (20,0%)	
Occuoation			
Housewife	24 (80,0%)	21 (70,0%)	0,603*
Government	0 (0,0%)	2 (6,7%)	
employees	4 (13,3%)	5 (16,7%)	
Private employees	2 (6,7%)	2 (6,7%)	
Businessman			

Characteristics	Group		Homogenity
	Video	Booklet	
Abortion History			
Yes	3 (10,0%)	3 (10,0%)	1,000*
No	27 (90,0%)	27 (90,0%)	

**levene's test based on median*

Table 1 indicated that sixty pregnant women participated in the study at the Bangkala Community Health Centre in Makassar City. Thirty of the women belonged to the Video group and thirty to the Booklet group. When examining the age group, the majority of members in the Video group (60.0%) and the Booklet group (60.0%) are likewise under 30 years old. In both groups, the majority had completed high school, and the weight gain was mostly between 0 and 15 kg. Gestational age-wise, both groups' average gestational ages were less than 24 weeks. According to educational background, the majority of pregnant women in the Booklet group (93.3%) and Video group (90.0%) had completed high school. Comparing the Video and Booklet groups' abortion histories, we find that, on average, 90.0% of them have never had an abortion. For the Video and Booklet groups, none of the respondents had a history in the areas of maternity history for babies weighing more than 4,000 grams, history of hypertension, or history of diabetes mellitus.'

The homogeneity test results demonstrated that, for the categories of age, weight gain, gestational age, occupation, history of giving birth to babies weighing more than 4,000 grammes, history of hypertension, and history of diabetes mellitus, the data variance was the same or homogeneous ($p>0.05$) between the Booklet group and the Video group, minimising the confounding/interaction effects of these characteristics on the treatment administered. The education category, however, exhibits diverse or heterogeneous data variance among the groups, suggesting the possibility of a confounding factor or treatment interaction.

b. Description of Knowledge, Attitudes and Behavior

Table 2
Frequency Distribution of Research Variables

Dependent Variable	Group			
	Video(n=30)		Booklet (n=30)	
	Pre-test	Post-test	Pre-test	Post-test
Knowledge				
Good	16 (53,3%)	30 (100,0%)	11 (36,7%)	30 (100,0%)
Enough	14 (46,7%)	0 (0,0%)	19 (63,3%)	0 (0,0%)
Less	0 (0,0%)	0 (0,0%)	0 (0,0%)	0 (0,0%)
Attitude				
Positive	30 (100,0%)	30 (100,0%)	30 (100,0%)	30 (100,0%)
Negative	0 (0,0%)	0 (0,0%)	0 (0,0%)	0 (0%)
Behavior				
Good	26 (86,7%)	30 (100,0%)	28 (93,3%)	30 (100,3%)
Poor	4 (13,3%)	0 (0,0%)	2 (6,7%)	0 (0,0%)

Table 2 presents the pre- and post-treatment categories of pregnant women's knowledge, attitudes, and behaviour in the Video group and Booklet group. If we examine the level of knowledge, we find that during the pre-test, 53.3% of pregnant women in the Video group had good knowledge, and that during the post-test, knowledge increased to 100.0% in the Video group. In contrast, during the pre-test, 63.3% of pregnant women in the Booklet group had poor knowledge, and during the post-test, knowledge increased to good. Pregnant

women's attitudes are examined, and both groups show 100% positive attitudes on the pre- and post-tests. When it comes to the behaviour of expectant mothers, the pre-test results for the Video group showed good behaviour at 86.7%, and the post-test showed an increase of 100.0%. Similarly, the pre-test results for the Booklet group showed good behaviour at 93.3%, and the post-test showed an increase of 100.0%.

Bivariate Analysis

a. Average Differences in Knowledge, Attitudes and Behavior

The differences in knowledge levels before and after the intervention are presented in the following table :

Table 3
Differences in Knowledge Levels Before and After Intervention

Pre-post Knowledge Level	Group			
	Video(n=30)		Booklet (n=30)	
	f (%)	*p-value**	f (%)	*p-value**
Decrease	0 (0,0%)	<0,001	0 (0,0%)	<0.001
Increase	30 (100,0%)		30 (100,0%)	
stagnant	0 (0%)		0 (0,0%)	

** Wilcoxon test*

Table 3 displays the test results, which indicate different pre- and post-test knowledge levels. It was observed that the level of knowledge in the video group tended to increase by 100.0%, and the results of the Wilcoxon test indicated that there was a significant difference between the group's pre- and post-test knowledge levels, with statistical test results of $p<0.05$, indicating that pregnant women's levels of knowledge before and after the video or intervention were significantly different. Put differently, educating pregnant women using video media has a noteworthy impact and can enhance their understanding.

There was a significant difference in the level of knowledge that pregnant mothers had before and after the intervention, as indicated by the Wilcoxon test results with statistical test results of $p<0.05$. In other words, providing booklet media education has a significant effect and can increase the knowledge of pregnant women. The booklet group demonstrated a pre and post-test knowledge level of 100.0%.

Following are the differences in attitudes before and after the intervention which are presented in the following table :

Table 4
Differences in Attitudes Before and After Intervention

Pre-post attitude level	Group			
	Video(n=30)		Booklet (n=30)	
	f (%)	*p-value**	f (%)	*p-value**
Decrease	0 (0,0%)	<0,001	0 (0,0%)	<0,001
Increase	30 (100,0%)		30 (100,0%)	
stagnant	0 (0,0%)		0 (0,0%)	

** Wilcoxon test*

Pregnant women's pre- and post-test attitudes were compared, and the results were displayed in Table 4. With a statistical test result of $p<0.05$, which indicates a significant

difference in the attitudes of pregnant women before and after the Video or intervention, the dominant attitude in the Video group was observed to have increased by 100.0%. The Wilcoxon test results also demonstrated a significant difference in pre- and post-test attitudes. To put it another way, educating pregnant women through video media has a big impact on how they feel.

Pregnant women's attitudes differed significantly before and after the intervention, indicating that the booklet group's pre and post-test attitudes were 100.0%. The Wilcoxon test results also revealed a significant difference in pre and post-test attitudes in the booklet group with statistical test results p<0.05. Put another way, the provision of booklet media education had a noteworthy impact on pregnant mothers' attitudes.

Following are the differences in attitudes before and after the intervention which are presented in the following table:

Table 5
Differences in Behavior Before and After Intervention

Pre-post Behavior Level	Group			
	Video(n=30)		Booklet (n=30)	
	f (%)	*p-value**	f (%)	*p-value**
Decrease	0 (0,0%)	<0,001	0 (0,0%)	<0,001
Increase	30 (100,0%)		30 (100,0%)	
stagnant	0 (0,0%)		0 (0,0%)	

** Wilcoxon Test*

Table 5 displays the behaviour difference test findings from both the pre- and post-test. With statistical test results of p<0.05, the Wilcoxon test indicated a significant difference in the pre- and post-test behaviour in the group. This suggests that there was a significant difference in the attitudes of pregnant women before and after the Video intervention. The dominant behaviour was observed to have increased by 100.0% in the Video group. To put it another way, pregnant women's behaviour is greatly impacted by the provision of video media education.

There was a significant difference in the behaviour of pregnant women before and after the intervention, or, to put it another way, the provision of booklet media education has a significant effect on the behaviour of pregnant women. The booklet group demonstrated 100.0% pre and post-test behaviour, and the Wilcoxon test results showed a significant difference in pre and post-test behaviour in the booklet group with statistical test results p<0.05.

b. Effectiveness Before and After Education in Video and Booklet Groups

Following are the results of data processing on the effectiveness of knowledge, attitudes and behavior variables before and after the intervention are presented in the following table:

Table 6
Effectiveness of Education Before and After Treatment on Knowledge, attitudes and behavior of Pregnant Women

Variable	N-Gain Score (%)					
	Video Group			Booklet Group		
	Average	Min	Max	Average	Min	Max

Knowledge	97.38	71.43	100.00	83.34	20.00	100.00
Attitude	81.91	33.33	100.00	58.47	14.28	100.00
Behavior	88.70	75.00	100.00	91.07	78.57	100.00

* **N-Gain Score**

The average knowledge score or the intervention group (video education) from the N-Gain Score test results in Table 6 was 97.38%. This result is classified as effective. The average information acquired by the control group, on the other hand, was 83.34%, it is classified as effective group. These findings suggest that using video in education is a successful way to increase knowledge. At the same time, knowledge is also improved on education through booklets.

In the video education intervention group, the average attitude score is 81.91%, it is classified as the effective category. In contrast, the average attitude score in the control group was 58.47%, falling into the quite effective category. These findings support the assumption that video-based learning can effectively change the attitude. In the meanwhile, changing attitudes through education through pamphlets is fairly effective.

The average behavior score for the video education intervention group was 88.77%. This result is in the effective group. In contrast, the control group's average behavior was in the effective category was 91.07%. These findings support the assumption that behavior can be improved through video-based instruction. In the meantime, it has been demonstrated that behavior modification through instruction using booklets is effective.

c. The effectiveness of video media in group A and booklet media in group B

The effect size value derived from the computation of the Cohen coefficient formula is also shown for the effectiveness test. A value of <0.20 indicates a little impact size, 0.20-0.80 indicates a medium effect size, and >0.80 indicates a large effect size according to the Cohen's Coefficient values (Berben et al., 2012).

Following are the results of data processing on the effectiveness of knowledge and attitude variables before and after the intervention, which are presented in the following table:

Table 7
Effectiveness of Video and Booklet Media on the Knowledge and Attitudes of Pregnant Women

Pre-post difference	Mean rank (n=60)		*Z*	*Effect size*	*p-value**
	Video	Booklet			
Knowledge	34,50	26,50	0,241	0,03	0,810
Attitude	34,50	26,50	1,803	0,23	0,071

** mann-whitneyTest*

Based on table 7, the Mann-Whitney test results show that video and booklet media education is significantly ineffective in increasing the knowledge of pregnant women with a p value <0.05 and an effect size of 0.03.

Table 7 indicate that, although having a small effect on changing attitudes, video and booklet media education is not yet statistically significant for attitudes. As a result, video and booklet media education is not thought to be effective for changing the attitudes of pregnant women, or, to put it another way, its effect is small, with a value of 0.23. Thus, it can be confirmed that using video and booklet media to help pregnant women develop a more positive attitude are ineffective.

Regarding behavioral variables, the following results of processing effectiveness data before and after the intervention are presented in the following table:

Table 8
The effectiveness of video and booklet media on behavior

Group	Mean	*Mean difference*	*CI 95%*	*Effect size*	*p-value**
Video	52,71±8.26	0.000	-3.894-3.894	0.25	1.000
Booklet	52,71± 6.726				

**Independent sample t-test*

Table 8 shows that there are two groups with the purpose of determining the efficacy of the intervention: the booklet media education group and the video media education group. The statistical test results found that there were no significant differences in the behavior of pregnant women between the Video group and the Booklet group ($p<0.05$) with an average difference of 0.000. This shows that the effect is 0.25, so it can be said that the video and booklet interventions are 52.71. So it can be concluded that behavioral changes in pregnant women using video and booklet media are considered ineffective

Discussion

1. Description of Respondent Characteristics

Based on the age characteristics of the respondents, The results indicated that 18% of pregnant women who received video media education and 60% of those who received booklet media education were under 30 years old. This shows that most pregnant women are relatively young. Pregnancy at <30 years of age is not a risk factor when compared with maternal age <35 years for the incidence of gestational diabetes

According to the parameters of weight increase, 96.7% of pregnant women who received booklet media education and 100% of those who received video media education had weight gains ranging from 0 to 15 kg. This indicates that most pregnant women gained between 0 and 15 kg of weight, which is considered a slight increase due to the pregnant women who visit the Community Health Centre for ANC having relatively young gestational ages and their weight gain is still within normal bounds. Weight increase is one of the many risk factors for gestational diabetes that recurrently show up.

Based on educational characteristics, the results showed that 90.0% of pregnant women were given video media education and 53.3% of those given booklet media education had a high school education. This shows that the majority of pregnant women who undergo ANC examinations at the Puskesmas do not continue their education to a higher level.

The results indicated that 80.0% of pregnant women who received video media education and 70.0% of those who received booklet media education were high-ranking housewives based on employment characteristics. This demonstrates that most pregnant women undergoing ANC exams at the Community Health Centre are housewives entirely, meaning they do not choose to live a dual role in which they dedicate themselves to raising their family.

Based on the characteristics of abortion history, The results indicated that 90.0% of pregnant women who received video media education and 90.0% of those who received booklet media education had never had an abortion. This shows that the majority of pregnant women who underwent ANC examinations at the Puskesmas did not have a history of abortion because many of them had never been pregnant before or had just gotten married.

Based on the characteristics of the birth history of babies with a birth weight of ≥4000 grams, the results showed that pregnant women who were given education via video media and booklets were overall the same, namely 100.0% did not have a history of giving birth to babies with a weight of ≥4000 grams. This shows that the majority of pregnant women who underwent ANC examinations at the Community Health Center had never given birth to babies weighing ≥4000 grams or macrosomnia babies, this was because they had no previous experience of giving birth to children and also many of the mothers had the experience of being pregnant for the first time. This is in line with research conducted (Farahdiba & Agusalim, 2018) where there were 81.6% of pregnant women who had never experienced the birth of a baby with macrosomnia

Based on the characteristics of a history of hypertension, According to the findings, all pregnant women who received media education through videos and booklets were similar in general—that is, none of them had a history of hypertension. Given that most new mothers are carrying their first child at a relatively young gestational age, this indicates that the majority of pregnant women who have ANC examinations at the health centre have never had hypertension and therefore have no risk of developing gestational diabetes. This is in line with the results of research conducted by (Riise et al, 2018) Gestational hypertension generally appears at 20 weeks of gestation, without any protein found in the urine

2. Description of Knowledge, Attitudes and Behavior

a. Knowledge

According to the knowledge variable table, 16 (53.3%) of the pregnant women had good knowledge before receiving video media education, and 30 (100.0%) of the pregnant women had good knowledge after receiving the education. This demonstrates how pregnant women's knowledge has increased as a result of receiving video education (Herinawati et al., 2021).

The results of this study are supported by (Ismi Wahyuni et al., 2021) that pregnant women's knowledge of gestational diabetes increased following personal education. The ability to make positive changes in attitudes and behavior can be improved by having reliable information. One way to inspire others to adopt healthy living habits is through education, which can be applied to individuals, organizations, or communities. (Rahmawati et al., 2016).

b. Attitudes

Based on the attitude variable table, all pregnant women (100.0%) who received video media education had positive attitudes both before and after. Similarly, all pregnant women (100.0%) who received booklet media education equally had positive attitudes both before and after. The data indicates a significant increase in the positive attitude of pregnant women both before and after receiving video media education and booklets.

The results of this study are supported by (Priyanka et al., 2020) found the majority of pregnant women (53.12% in the group with gestational diabetes and 51.72%) had a positive attitude regarding the condition and were continually aware of their own and their fetus' health. This is carried out to avoid several complications related to gestational diabetes.

c. Behavior

According to the behavioural factors table, 26 (86.7%) of the pregnant women had good behaviour before receiving video media education, and 30 (100.0%) of them had good behaviour after receiving video media education. This shows that pregnant women's behaviour is changing as a result of receiving video media education. There were 28 (93.3%) pregnant women who showed good behaviour before receiving the booklet media education, and 30 (100.0%) pregnant women showed an improvement in behaviour following the booklet media education. This shows that pregnant women's behaviour has changed as a result of receiving knowledge through booklet media.

3. Differences in Average Knowledge, Attitudes and Behavior

a. Knowledge

According to table of knowldge variable, the average knowledge result in the video group was <0.001, where p<0.05. These findings demonstrate how receiving video media education raised the average knowledge of pregnant women. Similar to the booklet group, the average knowledge was <0.001, with a p-value of less than 0.05. These findings demonstrate that pregnant women's average level of knowledge rose following the introduction of media education booklets. This demonstrates that neither group's level of knowledge has declined and has instead significantly raised.

The results of this study are supported by (Aprianti, 2022) which indicates that public understanding had an average value of 4.7667 before receiving health education through video media (pretest), and an average value of 7.6333 after receiving health promotion through video media (posttest). Following the distribution of health education via video media, there was a 2,8666 percent increase in knowledge of the public. This demonstrates the impact of health promotion via video on knowledge development.

b. Attitude

According to the attitude variable table, the average knowledge results in the video group were <0.001, where p<0.05. These findings demonstrate that, compared to before receiving video media education, pregnant women's attitudes were generally more positive. Similarly, the average positive attitude result in the booklet group was <0.001, with p<0.05. These findings show that pregnant women's attitudes were generally more positive than before receiving media education booklets. This demonstrates that the two groups' opinions have not changed and have rather grown noticeably more optimistic. According to research (Febri et al., n.d.) the average attitude score is 17.63, which is consistent with the study's findings

c. Behavior

According to the behavioural variable table, the average behavioural outcome in the video group was less than 0.001, with a p-value of less than 0.05. These findings show that on average, pregnant women behave better after receiving video media education than they did before. Similarly, the average excellent behaviour outcome in the booklet group was <0.001, with p<0.05. These findings indicate that, on average, pregnant women behave more effectively than they did before receiving media education booklets. This shows that neither group's behaviour has changed and has become noticeably more positive.

The results of this study are supported by (Maharani et al., 2022), When the control and intervention groups' average behaviour scores are ($p<0.05$). This indicates that diabetes mellitus prevention behaviour can be changed by booklet education. A significant difference in behaviour change was found in this measure between the control and intervention groups ($p<0.05$). This indicates that behaviour changes to prevent diabetes mellitus are influenced by education.

4. Effectiveness before and after education in video and booklet groups

Table 7 indicates that the group receiving video education has a knowledge value of 97.38%. This result is classified as the effective group. On the other hand, 83.34% of the knowledge received in the booklet group is in the effective category. These findings support the assumption that using video in the classroom increases knowledge among learners. In the meantime, knowledge can be enhanced through education using media outlets.

The results of this study are supported by (Carin et al., 2024) where the study revealed that the two groups' mother-toddler knowledge had significantly increased. Additional knowledge will be obtained more effectively if health education is provided through a variety of media, one of which is video since it has an eye-catching appearance and comes with audio that explains its contents (Febri et al., n.d.).

Based on table 7, it can be seen that the average attitude score for the intervention group (video education) was 81.91%. This outcome is in the effective category. Meanwhile, in the control group the average attitude was 58.47% and was in the quite effective category. Based on these results it can be concluded that education using video is effective in improving attitudes. Meanwhile, education using booklets is quite effective in increasing attitudes. Based on table 4.8, the average behavior value for the intervention group (video education) is 88.77%. This result is in the effective category. Meanwhile, in the control group the average behavior was 91.07% and was in the effective category. Based on these results it can be concluded that education using video is effective in improving behavior. Meanwhile, education using booklets has also proven effective in improving behavior. This is consistent with in (Maharani et al., 2022) which states that health education is based on *Division of Health Education Departement of Public Health* (1990) is a technique or method that may educate the public well so that they can subsequently identify their own health needs. The benefit of video education is that it's more flexible and simple to open and watch whenever you want, at any time Additionally, during the two-year DM education intervention, the ability to increase the incidence of DM illness (Djamaluddin, N., & Mursalin, O. V., 2020)

5. The effectiveness of video media in group A and booklet media in group B

Based on the table, the results of the Mann-Whitney test show that video and booklet media education is significantly ineffective in increasing the knowledge of pregnant women with a p value <0.05 and an effect size of 0.03. The results of the Mann-Whitney test were also carried out on attitudes which showed that Video and Booklet media education was not statistically significant for attitudes even though it had a small effect on attitude change so that Video and Booklet media education was considered not yet effective on the attitudes of pregnant women or in other words had the effect size is small with a value of 0.23. Based on table 8, the results of the Mann-Whitney test show that Video and Booklet media education is significantly ineffective in increasing. So it can be concluded that increasing knowledge, attitudes and behavior in pregnant women using Video and Booklet media is considered ineffective. Based on this, it can be assumed that video media and booklets both had a small effect on this research.

Conclusion

Based on the results of the above research, it can be concluded as follows:

1. Characteristics of the 60 respondents, consisting of 30 respondents in the Video group and 30 respondents in the Booklet group. In the age category, the Video group tends to be aged <30 years (60.0%) and in the Booklet group tends to be aged <30 years (60.0%). The dominant weight gain was 0-15 kg for both groups, the majority's highest level of education was senior high school in both groups. Gestational age for both groups was <24 weeks on average. Most pregnant mothers in the Video group had high school education (90.0%) and in the Booklet group most had high school education (93.3%). Abortion history, for the Video and Booklet groups, on average, they had never had an abortion (90.0%). Maternity history of babies with a weight of ≥4000 g, history of hypertension, and history of diabetes mellitus for the video and booklet groups, all respondents did not have this historyt.

2. Based on the description of the level of knowledge in the Video group and the Booklet group before and after treatment, the pre-test in the Video group was 53.3% of pregnant women who had good knowledge, then there was an increase in knowledge during the post-test of 100.0% in the Video group, while in the Booklet group when Pre-test pregnant women who had less knowledge was 63.3% and this increased in the post-test to 100.0%. Based on the description of the attitudes of pregnant women in the Video group and Booklet group before and after treatment, the attitudes of pregnant women pre-test and post-test in both groups had a positive attitude of 100.0%. Based on the description of the behavior of pregnant women in the Video group and the Booklet group before and after treatment, the Video group behaved well at pre-test at 86.7% and at post-test at 100.0% and in the booklet group at pre-test it was 93.3% and at post -test of 100.0%.

3. Based on the average knowledge, attitudes, and behaviour in the video group, the findings of the average knowledge, attitudes, and behaviour were <0.001 where p<0.05. These findings demonstrate that after receiving educational video media, pregnant women's average knowledge, attitudes, and behaviour improved. Similarly, the average results for knowledge, attitudes, and behaviour in the booklet group were <0.001, with p<0.05. These findings demonstrate that after receiving media education booklets, pregnant women's average knowledge, attitudes, and behaviour improved.

4. The effectiveness of video media on knowledge was 97.38% and entered the effective category, while the effectiveness of booklet media was 83.34% and entered the effective category. The effectiveness of video media on attitudes was 81.91% and entered the effective category, while the effectiveness of booklet media was 58.47% and entered the moderately effective category. The effectiveness of video media on behavior was 88.77%, included in the effective category, while the effectiveness of booklet media on behavior was 91.07% and entered the effective category. . The effectiveness of Video and Booklet media was significantly ineffective in increasing the knowledge of pregnant women with an effect size of 0.03. The effectiveness of Video and Booklet media is significantly ineffective for the attitudes of pregnant women or in other words has a small effect size with a value of 0.23. The effectiveness of Video and Booklet media is significantly ineffective for the behavior of pregnant women with a large effect value of 0.25

References

Andyana Rehusisma, L., Endah Indriwati, S., Suarsini, E., Artikel, R., & Andyana Rehusisma Pendidikan Biologi, L. (2017). *Pengembangan Media Pembelajaran Booklet dan Video Sebagai Penguatan Karakter Hidup Bersih dan Sehat*. http://journal.um.ac.id/index.php/jptpp/

Anggraini, U. (2016). *Pengaruh Program Edukasi Dengan Media Audio Visual Dan Tertulis Terhadap Perilaku Pencegahan Diabetes Melitus Dan Kualitas Hidup Pada Warga Padukuhan Kasihan*. Universitas Muhammadiyah Yogyakarta.

Aprianti, S. (2022). Pengaruh Promosi Kesehatan melalui Media Video terhadap Pengetahuan Masyarakat tentang Diabetes Melitus di Kota Bengkulu. *Poltekkes Kemenkes Bengkulu*.

Armini, A. K., Yunitasari, E., Triharini, M., Kusumaningrum, T., Pradanie, R., & Nastiti, A. A. (2016). *Buku Ajar Keperawatan Maternitas 2* (A. P. Sabila & G. E. Auruzki, Eds.; Cetakan 1). Fakultas Keperawatan Universitas Airlangga. https://wallpapersafari.com/hd-dna-wallpaper/

Arya Mamonto, F., Mutiya Bunsal, C., Rimporok, M. H., & Sekolah Tinggi Ilmu Kesehatan, K. (2021). Pengaruh Pendidikan Kesehatan Melalui Media Booklet Terhadap Upaya Pencegahan Diabetes Mellitus Gestasional Pada Ibu Hamil Trimester I di RS Bhayangkara TK.III Manado. In *Jurnal Kesehatan: Amanah Prodi Ilmu Keperawatan STIKES Muhammadiyah Manado* (Vol. 6, Issue 6).

Badan Pusat Statistik Kota Makassar. (2023). *Jumlah Penduduk Kota Makassar*.

BPTP. (2017). *Booklet dan Buku Saku*. BPTP Balitbangtan Jamb.

Carin, V., Juwandhi, A. R., Anwar, K., Setyowati, A., & Fitri, Y. P. (2024). Pengaruh Edukasi Pencegahan Stunting dengan Media Buku Saku Digital dan Video Animasi Terhadap Tingkat Pengetahuan dan Sikap Ibu Balita di Posyandu Merah Delima, Kota Tangerang. *Jurnal Abdi Masyarakat Indonesia*, *4*(1), 163–170. https://doi.org/10.54082/jamsi.1047

Djamaluddin, N., & Mursalin, O. V. (2020). Gambaran Diabetes Melitus Gestasional Pada Ibu Hamil di RSUD Prof. Dr. H. Aloei Saboe Kota Gorontalo. *Jambura Nurisng Journal* , *2*(1).

Farahdiba, I., & Agusalim. (2018). Hubungan antara Ibu Pengidap Diabetes dengan Kelahiran Bayi Makrosomia di RSUD Syekh Yusuf Gowa Tahun 2018. *Jurnal Kesehatan Delima Pelamonia*, *2*(2).

Febri, T., Putri[1], S., [1]fakultas Kesehatan, M., Sarjana, S., & Masyarakat, K. (n.d.). *Prosiding Forum Ilmiah Tahunan IAKMI (Ikatan Ahli Kesehatan Masyarakat Indonesia) Edukasi Gizi Ibu Hamil Melalui Video Terhadap Pengetahuan Dan Sikap Ibu Dalam Upaya Pencegahan Stunting*.

Herinawati, H., Heryani, N., Susanti, S., Danaz Nst, A. F., Imelda, I., & Iksaruddin, I. (2021). Efektivitas Self Efficacy terhadap Pemahaman Tanda Bahaya Kehamilan menggunakan Video dan Buku Kesehatan Ibu dan Anak. *Jurnal Akademika Baiturrahim Jambi*, *10*(1).

IDF Diabetes Atlas 10th edition. (2021). www.diabetesatlas.org

Indah, J., & Junaidi, J. (2021). Efektivitas penggunaan poster dan video dalam meningkatkan pengetahuan dan sikap tentang buah dan sayur pada siswa Dayah Terpadu Inshafuddin. *Jurnal SAGO Gizi Dan Kesehatan*, *2*(2), 129. https://doi.org/10.30867/gikes.v2i2.311

Kementerian Kesehatan. (2020). *Tetap Produktif, Cegah, dan Atasi Diabetes Mellitus*.

Kementerian Kesehatan Republik Indonesia. (2022). *PROFIL KESEHATAN INDONESIA*.

Kementerian Kesehatan RI. (2022a). *Diabetes dalam Kehamilan*.

Kementerian Kesehatan RI. (2022b). *Profil Kesehatan Indonesia 2021*.

Kurniawan, B. L. (2016). Patoisiologi, Skrining, dan Diagnosis Laboratorium Diabetes Melitus Gestasional. *CDK 246*, *43*(11). https://doi.org/10.1155/2013/387495

Kurniawan, F. (2017). *Diabetes Mellitus Gestational*.

Maharani, H., Dana, Y. A., & Sari, C. R. (2022). Pengaruh Edukasi Ibu Peduli DM Terhadap Pengetahuan dan Perilaku Pencegahan DM. *Florona : Jurnal Ilmiah Kesehatan*, *1*(1).

Notoatmodjo, S. (2014). *Promosi Kesehatan Dan Perilaku Kesehatan*. PT Rineka Cipta.

Notoatmodjo, S. (2018). *Metodologi Penelitian Kesehatan*. Rineka Cipta.

Nursalam. (2017). *Metodologi Penelitian Ilmu Keperawatan : Pendekatan Praktis Edisi 4* (4th ed.). Salemba Medika.

Priyanka, G., Prasad, P. E., Sabith, M., Raiunnissa, & Parthasarathy, G. (2020). 1287-Article Text-2353-2-10-20210720. *INTERNATIONAL JOURNAL OF REVIEW IN LIFE SCIENCES*, *10*(3), 60–68.

Puskesmas Bangkala. (2023). *Jumlah Kunjungan Ibu Hamil*.

Rahmawati, F., Notosba, J., & Jaji, J. (2016). Skrining Diabetes Mellitus Gestasional dan Faktor Risiko yang mempengaruhinya. *Jurnal Keperawatan Sriwijaya*, *3*(2), 33–43.

Riise et al. (2018). Association Between Gestational Hypertension and Risk of Cardiovascular Disease Among 617 589 Norwegian Women. *J Am Heart Assoc*. https://doi.org/10.1161

Yulizawati, & et al. (2017). *Buku Ajar Asuhan Kebidanan Pada Kehamilan*. Erka.