

FEASIBILITY TEST OF DIABETES MELLITUS EDUCATIONAL VIDEO LEARNING MEDIA

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ABSTRACT

This study aims to determine the feasibility of audio-visual media used as educational media for diabetes mellitus. The type of research used is Research and Development (R&D). The product developed is Animation-Based Audio Visual. This development research is modified from the 4-D learning device development model consisting of 4 stages, namely define, design, develop, and disseminate. Validity test data is obtained from the validation sheet based on the assessment of expert validators. There are two types of validation sheets used, namely media validation sheets and material validation sheets. The results of the study and data analysis show that the video is very feasible to use when reviewed based on media feasibility with a validity of 85.00% and a reliability of 88.57%. Based on these results, it can be concluded that the video is very feasible to use in the learning process.

KEYWORDS Audio-visual media, Education, and Video



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INTRODUCTION

Hyperglycemia is a medical condition in the form of an increase in blood glucose levels beyond normal which is characteristic of several diseases, especially diabetes mellitus in addition to various other conditions. Diabetes mellitus is currently one of the global health threats¹. Based on data from Basic Health Research (Riskesdas) in 2013, the prevalence of Diabetes Mellitus in people over the age of 15 years in Indonesia increased from 5.7% in 2017 to 6.9%². The prevalence of Diabetes Mellitus in Mataram City is 1.7%. Diabetes Mellitus ranked 9th in the top 10 diseases in the NTB Health Center in 2017³. This predicate lasted until 2021 where non-communicable diseases such as stroke, hypertension, and diabetes mellitus were in the top 10 most diseases. According to data on the coverage of health services for people with diabetes mellitus in sub-districts and health centers in West Nusa Tenggara Province in 2020, there were 59,606 diabetics. Then in 2021 there was an increase in DM sufferers, namely 63,488 sufferers. Then in Bima City there are 3,523 patients.

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According to research by Kurniawan et al. (2020) on self-management of diabetic mellitus patients, self-management in this population is generally still low. The level of education and understanding of diabetic mellitus patients is one of the variables that affects their compliance in self-management. The level of education and understanding of diabetic mellitus patients is one of the variables that affects their compliance in self-management. Individuals with diabetes are required to carry out long-term diabetes management in order to reduce the risk of developing diabetes, improve quality of life, and minimize the occurrence of acute complications and prevent the occurrence of microangiopathy and macroangiopathy. As a chronic disease, one way that can be done is to do diabetes self-care management, in order to avoid or slow down the appearance of complications. Performing lifestyle self-care such as diet settings, physical exercise, blood glucose monitoring, and pharmacological treatments, can help reduce morbidity and mortality from diabetes as well as control hyperglycemia, increased blood pressure, weight, and fat⁴.

The provision of education through health promotion, self-care management of diabetes mellitus can be provided as an effort to increase understanding and knowledge in patients with diabetes mellitus, it is provided in two ways, one of which is by conveying messages that evoke the senses of sight and hearing⁵. Health education is a combination of education and intervention that has been designed to facilitate behavioral and environmental changes for health. Health education can be displayed using video media that contains education about diabetes mellitus and its prevention with a creative model⁶. Because video media is said to be more effective and easy to understand in the process of providing health education⁷. Learning media or health education using videos has the carrying capacity of understanding results with good categories and can be a motivation to understand the information conveyed. Video media can increase motivation about the importance of maintaining health and can provide information and teaching about health, one of which is in the prevention of diabetes mellitus⁷.

The development of science and technology is growing day by day. This can be used to facilitate the learning process, namely with creativity and skills to develop existing learning media or create new learning media. Audio visual media is a combination of audio and visual media so that it has image and sound elements that can be seen and heard, such as video. Video is a medium that can present audio and visual content at the same time⁸. Videos are very easy to use as a learning medium because the material that will be included in the video can be in the form of writing and sound.^bThe advantages of Audio visual media are that oral and written messages can be presented clearly, overcome the limitations of space, time and sensory power, can be used for tutorial learning. Audio visual content is an important part of so that the percentage becomes more interesting. To create audio-visual content, it requires its own expertise, especially in designing interesting learning media.

RESEARCH METHOD

The type of research conducted is research and development. The product developed is Animation-Based Audio Visual. This development research is

modified from the 4-D learning tool development model developed by S. Thiagarajan, Dorothy S. Semmel, and Melvyn I which consists of 4 stages, namely define, design, develop, and disseminate. Validity test data was obtained from validation sheets based on the evaluation of expert validators. There are two types of validation sheets used, namely media validation sheets and material validation sheets. Practicality test data was obtained from research instruments in the form of questionnaires of material and media expert responses. Practicality test data is needed to find out whether the product that has been developed can be applied in learning activities. Effectiveness test data was obtained from research instruments in the form of test items that students did after carrying out the learning process using the media that had been developed. Effectiveness test data is used to find out whether the resulting product can provide the expected results.

RESULT AND DISCUSSION

Material Validation

This feasibility test was carried out by the Bachelor of Nutritionists producing the following data, analysis of the data of the validation assessment of material experts is presented in the following table 1:

Table 1. Results of Material Validation Analysis of Material Expert Assessment

It	Aspects	Validity	Percentage	Expert Rating	
			Information	Reliability	Information
1	Content eligibility	93,75%	Very worthy	92,86%	Reliable
2	Penyajian	93,75%	Very worthy	93,76%	Reliable
3	Language	87,50%	Very worthy	85,71%	Reliable
Installment - installment		91,67%	Very worthy	90,78%	Reliable

Material validation includes assessments on 3 aspects. The first aspect of content feasibility obtained a validity score of 93.75% with very feasible criteria and reliability of 92.86% with reliable criteria. This is in line with research conducted by Salsabila et al. (2021), the results of the study showed that 31 respondents (71.2%) showed that the level of self-care management before receiving audiovisual education was basically low. Regarding self-care management, the majority have a high level after receiving audiovisual education, according to 29 respondents (67.4%).

The second aspect of presentation obtained a validity score of 93.75% with very feasible criteria and reliability of 93.76% with reliable criteria. This shows that the material presented in the video media provides examples that are in accordance with the material. Ratumanan in Murdani et al., (2013) states that Jean Piaget's cognitive theory about a person's cognitive structure can be by adjusting to the observed environment so that the illustrations/examples in the video will make it easier for students to develop their cognitive structure to obtain information or knowledge.

The third aspect of the language obtained an alfidability score of 87.50% with very feasible criteria and reliability of 85.71% with reliable criteria. This shows that the material is packaged using easy-to-understand language. In accordance with the opinion that the concept of stories is packaged as a subject in learning, lengthy information that is difficult to convey orally can be presented in the form of films and videos that are easy to understand (Handayani & Marniati, 2018).

Material Validation

The feasibility of the media can be determined by conducting a feasibility test. The recapitulation of media validation on video media can be seen in table 2 as follows;

Table 2. Data Recapitulation of Media Validation Results

No.	Aspects	Percentage of Expert Assessments			
		Validity	Information	Reliability	Information
Display Aspects					
1	The typeface used is visible and clear	87,50%	Very worthy	85,71%	Reliable
2	Color does not interfere with the material and has no effect on readability	87,50%	Very worthy	85,71%	Reliable
3	Suitability and accuracy of animation to the material	87,50%	Proper	100,00%	Reliable
4	Every piece is well connected so that the video seems to flow	87,50%	Very worthy	85,71%	Reliable
5	The audio used is in accordance with the concept of <i>stop motion video media</i>	87,50%	Very worthy	85,71%	Reliable
Average		85,00%	Very worthy	88,57%	Reliable

Media validation only assesses the display aspect only, the display aspect has 5 indicators. The first indicator is the typeface used is visible and clear and the second indicator is the color used does not interfere with the material and does not affect readability. The two indicators obtained an average validity of 87.50% with very feasible criteria and an average reliability of 85.71% with reliable criteria. This shows that the type of font used in the video is not disturbed by the video and the colors displayed in the video appear clear, making it easier to read because it contrasts with the font color. In accordance with the statement of Wulandari (2015) that learning media is able to make students interested in learning and not bored in learning because the use of contrasting and colorful colors will make students feel happy9.

The third indicator in the display aspect is the suitability and accuracy of the animation to the material. The indicator obtained an average validity of 75.00% with feasible criteria and an average reliability of 100.00% with reliable criteria. This shows that the animation in the video is in accordance with the material and does not deviate from the material.

Ausubel's theory of meaningful learning in Herpratiwi (2016) defines that a learning can be said to be meaningful learning if students have been able to integrate

newly acquired knowledge with relevant concepts that are in accordance with the student's cognitive structure¹⁰. Animation that is in accordance with the material will make it easier to understand the material and understanding the material will be able to make the learning process that is being undergone into a meaningful learning process.

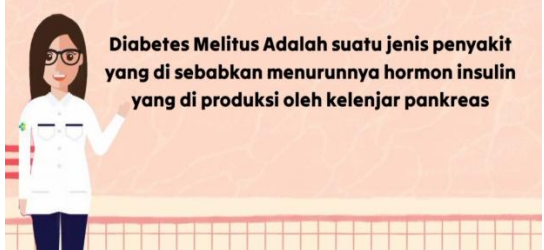
The fourth indicator is that each section is well connected so that the video seems to flow. The indicator obtained an average validity of 87.50% with very feasible criteria and an average reliability of 85.71% with reliable criteria. This shows that the content contained in video media is collapsing, flowing, and not cut as if it consists of several parts that are combined into a single unit. The review of the use of educational media has been carried out in the form of a literature review that summarizes the results of discussions on methods of providing education, duration and follow-up, the professional team involved, and the effectiveness of educational interventions¹¹. Meanwhile, based on a review in the form of a scoping review conducted by Aisah (2021), it is stated that the most widely used educational media to prevent the risk of LKD is in the form of videos, therefore researchers are interested in seeing the use of video media as an educational medium for patients in the treatment of diabetic wounds, so that it can be a guideline for health workers in providing education with the use of videos to prevent the impact of diabetes¹². Hapsari & Sumartini (2016) stated that fabled stories can be used as a medium to channel moral messages. A message will be able to be conveyed optimally if it uses a continuous delivery method¹³.

The fifth indicator is the audio used in accordance with the concept of video media. The indicator obtained an average validity of 87.50% with very feasible criteria and an average reliability of 85.71% with reliable criteria. This shows that the audio used, namely the material, can blend with the display on the video media because it is a story about illustrations related to diabetes that can speak, behave, and socialize.

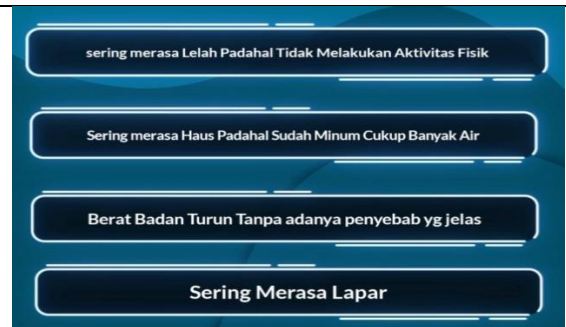
The animation-based video content of diabetes mellitus learning materials can be seen in the following table ^{14,15,16,17}:

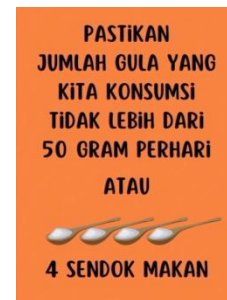
Table 3. Animated Video Development Product Display

No.	Content of the material	Animated Video Development
1	Video introduction	

	Penyusun materi : Tim Peneliti AHMAD, SH. S.Kep.,Ns.M.Pd INDRA RAHMAD, SST.M.Pd MUHTAR, S.Kep.,Ns.M.Kep Ns. ZULKARNAIN, S.Kep.M.Kep FADLURRAHMI, S.Kep.,Ns
2	Author's Introduction Penulis Naskah RUSDIN , SKM Fauzan Mahfuz, S.Gz Sri Handayani, S.Tr.Kep.,CWCN
3	Definition of Diabetes Mellitus  Diabetes Mellitus Adalah suatu jenis penyakit yang di sebabkan menurunnya hormon insulin yang di produksi oleh kelenjar pankreas
4	Causes of Diabetes Mellitus  Penyebab Diabetes Mellitus
5	Habits that trigger diabetes mellitus  3 KEBIASAAN PEMICU Diabetes! DIABETES RISK LEVEL tentangdiabetes_id Next
6	Symptoms of Diabetes Mellitus  Gejala Yang Sering Muncul Pada Orang-orang yang Terkena DIABETES MILETUS

7 Management of Diabetes Mellitus





CONCLUSION

The feasibility test of video learning media shows that video learning media is suitable for use in the learning process. The results of the media feasibility test based on materials obtained a result of 91.67% and reliability of 90.78% with

reliable criteria and a feasibility test based on media obtained 85.00% and reliability of 88.57% with reliable criteria. Research on the feasibility test of video learning media can be considered as a learning medium that can be continued to be tested on nurses before being used in the learning process for patients.

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