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Improving Behavioral Outcomes in Type II Diabetes Mellitus Patients Through Lectures Assisted by Video in the Muara Bangkahulu Community Health Center Working Area, Bengkulu City

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ABSTRACK

Introduction: Type II diabetes mellitus is a common type of disease and accounts for 85-90% of all diabetes cases that occur. There is an increase in cases of type II diabetes mellitus from year to year and there are still many sufferers who have not implemented dietary habits, physical activity, adequate rest and control blood sugar in daily life and there is still a lack of knowledge and attitudes of type II diabetes mellitus sufferers about diabetes. type II mellitus

Objective: This research aims to determine the effect of lectures using educational video media on the behavior of people with type II diabetes mellitus

Method: This type of research uses quantitative research methods with a pre-experiment research design and a one group pretest-posttest design. Sampling used a purposive sampling method with a total of 35 respondents. Analysis of knowledge and behavior data used the Wilcoxon test and for attitudes used the paired t-test.

Result: The results of the average knowledge of sufferers about type II diabetes mellitus were pretest 4.80 (not good), post test 7.37 (good). while the average attitude of pretest sufferers was 25.54 (negative), post test 30.11 (positive). and for the average behavior of type II diabetes mellitus sufferers pretest 11.83 (not good), posttest 14.14 (good). There was an effect of lectures using educational video media on the behavior of type II diabetes mellitus sufferers ($P < 0.05$).

Conclusion: The improvement in behavior among patients with type II diabetes mellitus through lectures using educational video media. The use of lectures supported by educational video media has a significant positive impact on the behavior of type II diabetes mellitus sufferers. These behavioral improvements include a better understanding of disease management, adherence to care, and healthy lifestyle changes.

Keywords: Attitudes, Behavior, Educational Video; Knowledge; Type II Diabetes Melitus

INTRODUCTION

Type II diabetes mellitus is a type of disease that occurs frequently and accounts for up to 85-90% of all diabetes mellitus cases that occur in the elderly. Various health problems occur in the world, diabetes melliturs causes increased complications, mortality and rates in the elderly in a simpler group (1). The International Diabetes Federation estimates that around 463 million people in the world whose ages are between 20 and 79 years old will be at risk of developing diabetes mellitus in 2019 or around 9.3% of all people in the same population group. Based on gender, it is estimated that the incidence of diabetes in 2019 is 9% in women and 9.65% in males. The prevalence of diabetes mellitus will increase significantly among the elderly, reaching 19.9% or 111.2 million adults aged 65 to 79 years.

The predicted figure will continue to increase until it increases to 578 million in 2030 and will increase to 700 million in 2045 (2). International Diabets Fenderation Ranking of international Diabets in Indonesia has moved to fifth place in the world.

According to the Provincial Health Department of Bengkulu (2022), the number of diabetes mellitus patients was 47,116, with 27,577 patients (57%) receiving standard care. Meanwhile (3), the City Health Department of Bengkulu (2022) reported a diabetes mellitus patient count of 3,087 (4). Data for diabetes mellitus patients in 2022 in the working area of the Muara Bangkahulu Health Center in Bengkulu City shows a total of 420 (13.6%) patients (5).

Bengkulu is a province in Sumatra, Indonesia that has local characteristics that influence diabetes prevalence such as Economic Polarization: like many regions in Indonesia, faces varying economic challenges and access to health facilities. Unequal development of health infrastructure can affect diabetes detection and management (6). Traditional and Modern Diet: A change in diet from consuming healthier local foods to fast food and processed foods can increase the risk of diabetes. For example, high consumption of sugar and fat (7). Education and Awareness: Levels of education and awareness about diabetes and healthy lifestyles can vary, influencing how people manage their risk (8)

Diabetes mellitus is a disease that has negative impacts on both physical and psychological aspects for those affected. According to Pricer & Wilson, physical complications include polyuria, polydipsia, polyphagia, excessive fatigue, and a feeling of thirst. In addition, patients may experience blurred vision, fatigue, and headaches. Psychological effects can include anxiety, uncontrolled emotions, sadness, melancholy, feelings of guilt, loss of hope, depression, despair, helplessness, passivity, discomfort, confusion, and severe suffering (9). Diabetes mellitus is caused by metabolic disorders of the pancreas, characterized by increased blood glucose levels, also known as hyperglycemia. This condition is suspected to result from insufficient insulin production by the pancreas. Diabetes mellitus can lead to various complications, both macrovascular and microvascular (10).

METHOD

This type of research uses quantitative research methods with the design used being Pre-Experimental, namely One Group Pretest Posttest with a total of 35 respondents with a sampling technique using purposive sampling technique to observe changes that occur before and after the intervention. This design is carried out by conducting a pretest first, then followed by intervention (treatment) and finally a posttest by administering a questionnaire that has been tested for validity and reliability first.

RESULT

Frequency Distribution of Respondent Age Characteristics

Table 1. Age Characteristics

Variable	Frequency	Percentage
56 Years and Over	19	54,3
56 Years and Under	16	45,7

Source: Primary Data,2024

Based on table 1, it is found that the response frequency distribution is based on age 56 and above (54.3%).

Frequency Distribution of Respondent Gender Characteristics

Table 2. Gender Characteristics

Variable	Frequency	Percentage

Female	22	62,9
Male	13	37,1

Source: Primary Data, 2024

Based on table 2, it was found that the gender characteristics of the respondents were female (62.9%) and male (37.1%).

Frequency Distribution of Respondent Education Characteristics

Table 3. Education Characteristics

Variable	Frequency	Percentage	∑
Not completed elementary school	2	5.7	5.7
SD	6	17.1	22.9
SMP	8	22.9	45.7
SMA	16	45.7	91.4
D3	2	5.7	97.1
S1	1	2.9	100.0

Source: Primary Data, 2024

Based on Table 3, it is found that the frequency distribution of respondents by education level is mostly high school (SMA).

Frequency Distribution of Respondent Occupation Characteristics

Table 4. Occupation Characteristics

Variable	Frequency	Percentage	∑
Housewife	16	45.7	45.7
Laborer	5	14.3	60.0
Farmer	4	11.4	71.4
Civil Servant	2	5.7	77.1
Entrepreneur	6	17.1	94.3
Private Employee	1	2.9	97.1
Riterement	1	2.9	100.0

Source: Primary Data, 2024

Based on Table 4, it is found that the frequency distribution of respondents by occupation shows that the majority are housewifes (IRT).

Knowledge of Type II Diabetes Mellitus Patients About Behavior

Table 5. Average Knowledge Before and After Intervention

Variable	N	Mean ± SD	Min-Max
Before	35	4.80 ± 1.587	1-7
After	35	7.37 ± 1.610	4-10

Source: Primary Data, 2024

Based on Table 5, it shows that the average knowledge score before the intervention was 4.80 (bad) and after the intervention was 7.37 (Good).

Attitudes of Type II Diabetes Mellitus Patients Towards Behavior

Table 6. Average Attitude Before and After Being Given the Intervention

Variable	N	Mean ± SD	Min-Max
Before	35	25.54 ± 2.582	21-31
After	35	30.11 ± 2.687	25-36

Source: Primary Data, 2024

Based on table 6, it shows that there was an increase in the average attitude score of type II diabetes mellitus sufferers in the working area of the Muara Bangkahulu Community Health Center, Bengkulu City before and after being given education through educational video media about diabetes mellitus by 25.54 to 30.11.

Behavior of Type II Diabetes Mellitus Patients

Table 7. Average Attitude Before and After Intervention

Variable	N	Mean ± SD	Min-Max
Before	35	11.83 ± 857	10-14
After	35	14.14 ±. 974	12-16

Source: Primary Data, 2024

Based on table 7. it is recommended that the mean behavior score for the service given the intervention is 11.83 (not good) and the average score given for the intervention is 14.14 (Good).

The Effect of Lectures Using Educational Video Media

Table 9. The Effect of Lectures with Educational Video Media

Variable	Mean		Δ Mean	P
	Before	After		*Value*
Knowledge	4.80	7.37	2.57	.000
Attiude	25.54	30.11	4.57	.000
Behavior	11.83	14.14	2.31	.000

Source: Primary Data, 2024

Based on table 9, it was found that the difference in the mean increase in knowledge scores before the intervention was (4.80) and after the intervention was (7.37). Meanwhile, the difference in the mean increase in attitude scores before the intervention was (25.54) and after the intervention was (30.11). And the difference in the average increase in behavior scores before the intervention is (11.83) and after being given the intervention, namely (14.14)

DISCUSSION

Respondent Characteristics

The results of the frequency distribution of patient characteristics show that most patients are aged 56 and above, the majority are female, and most have a high school education with a profession as housewifes. This is in line with the study by Apriani (2024), which found that the youngest patient was 36 years old and the oldest was 67 years old, with the majority being female (75.8%). The educational background mostly included high school (48.5%), and the majority of patients were housewifes (51.5%) (11).

Respondent Knowledge

The research findings indicate that information about Type II Diabetes Mellitus provided through educational video media can positively impact the improvement of patient's knowledge about Type II Diabetes Mellitus. The level of knowledge of patients before receiving the educational video media was relatively bad, but after the intervention, most respondents' knowledge improved to a good level. This is demonstrated by the average knowledge score before the educational video intervention, which was 4.80 (not good), and after the intervention, which was 7.37 (good). This proves that education through video media leads to a significant difference in knowledge levels before and after the educational intervention.

This is in line with research (Rasyida and Sursanti, 2024) with research results which obtained figures before being given the educational video of 7.53 (fair) and after being given the educational video of 15.03 (good) where there was an increase in the knowledge of diabetes mellitus sufferers after being given the educational video media (12). (Surardani at all, 2020) the results showed that the increase in knowledge before being given education through educational videos was 10.8% (good), 64.9% (fair), 24.3% (not good) and after being given educational video media it was 70.3 % (good), 29.7% (fair) where there was an increase in knowledge of type II diabetes mellitus sufferers after being given education through educational video media (13). Increasing knowledge can also be influenced by several factors, such as education, personal experience or from other people, the environment and mass media (Notoatmodjo, 2012). Health education is an increase in ability in the form of knowledge to achieve optimal health that helps individuals, groups or society (Notoatmodjo, 2012).

This study found that among the 10 knowledge questions, the highest scores after receiving the educational video intervention were for questions 2 and 8, which were “What are the signs and symptoms of Type II Diabetes Mellitus?” and “What are the benefits of physical activity for Type II Diabetes Mellitus patients?” The lowest scores after receiving the educational video intervention were for question 1, which was “What are the modifiable risk factors?” According to the study, there are several reasons for the lowest scores, such as respondents limited understanding and their level of enthusiasm while watching the educational video. However, overall, there was a significant difference in respondents’ knowledge before and after the intervention using educational video media

Respondent Attitude

The results of the research show that information about type II diabetes mellitus behavior provided through lectures using educational video media can have an influence on improving respondents’ attitudes about type II diabetes mellitus. Respondents’ attitudes can be seen before giving educational video media, their attitudes were not good and after being given educational video media, most of the respondent’s attitudes became good. This is shown by the average attitude results before the educational video media intervention was 25.54 (negative) and after being given the educational video media intervention 30.11 (positive). This proves that there are differences in education through video media before and after education is provided through video media.

This is in line with research (Apriani, 2024) with the results of the before attitude being given an edukasi of 29.67 (negative) and after being given an education through video edukasi, an attitude value of 31.37 (positive) was obtained, where there was an increase in the attitude of sufferers of type II diabetes mellitus and was given video education media (11). Meanwhile, the results of the research (Sari et al., 2024) showed that the attitude results before being given education through video media were 32.74 and after being given education was 39.39, where there was an increase in attitudes before and after being given education through educational video media (14).

This research confirms that of the 10 terms of the attitude statement, it is still the lowest in statement no. 4, namely "a temporary blood sugar level of 200 mg/dl and a normal blood sugar level of 126 mg/dl are high blood sugar levels". According to research, there are several reasons behind the lowest answer results, such as the low level of understanding of the respondents and their level of enthusiasm when watching the documentary video. However, in general there are differences in the attitude of responders and officers who are given intervention by reducing the use of military media.

Respondent Behavior

The research results indicate that providing information about Type II diabetes mellitus through video-based educational lectures can positively influence respondents’ behaviors regarding Type II diabetes mellitus. Before the intervention with the video educational media, respondents exhibited less favorable behaviors. However, after receiving the video-based educational intervention, most respondents demonstrated improved behaviors. This is evidenced by the mean behavior score before the intervention being 11.83 (not good) and 14.14 (good) after the intervention. This demonstrates that there is a significant difference in respondents’ behaviors before and after the video educational intervention.

This is in line with research (Habibah et al., 2019) with the results of self-care behavior before being given education of 36.73 and after being given education through educational videos, a behavior value of 60.93 was obtained, where there was an increase in the behavior of diabetes mellitus sufferers after being given audiovisual video media (15). Meanwhile, the results of research (Syarfaini et al., 2023) showed that self-management results before being given education via video were 31.60 and after being given education were 38.20, which means there was an increase in self-management of type II diabetes mellitus patients through video media education (16). And for research (Susilawati et al., 2024) which has research results on behavioral intentions before being given education via video, it has less than 15 intentions and 0 good intentions and after being given education it has less than 0 intentions, 9 good intentions (17).

The researcher noted that out of 10 attitude statement items, the lowest score was observed for statement number 7, which is “I always go to bed on time.” According to the researcher, there are several reasons behind this low response, such as respondents' limited understanding and their level of enthusiasm while watching the educational video. However, overall, there was a noticeable improvement in respondents’ behaviors after receiving the intervention through video-based education.

The Effect of Lectures Using Educational Video Media

The research results show that for knowledge and behavior, using the Wilcoxon test yielded a p-value < 0.05, while for attitudes, the Paired Samples t-Test yielded a p-value < 0.05. This indicates that there is a significant effect of using video-based educational lectures on the behavior of Type II diabetes mellitus patients in the working area of Puskesmas Muara Bangkahulu, Bengkulu City.

This is in line with research (Sari Purrnama, 2019) and an intervention was carried out to reduce medical risk regarding pneumonia in toddlers which had an awareness average (82.5%) and an attitude average (62.5%) (18). Research results (Urmami et al, 2021) After an intervention was carried out using media video results regarding Hygiene Vurlva which has an average of knowledge (61.8%) and an average of attitudes (78.9%) (19). As a result of research results (Surlistiani, 2021) Has the average knowledge value (14.03) and the average attitude value (13.23) after an intervention was carried out using video media regarding intrauterine contraception (20). Furthermore, research (Aprianti, 2023) and an intervention carried out using digital media have obtained an average of knowledge regarding expressed breast milk and exclusive breastfeeding which has an average of knowledge (60.3%) and an average of attitudes (73.0%) (21). And research (Sahro Madinaturs, 2023) Those who have a research average (50%) and an attitude average (59%) will also be given research information (50%) and an attitude average (59%) and will be given an intervention to reduce the amount of information about MP-ASI (22).

One way that can be done to improve the knowledge and attitudes of respondents is by providing health education through one of the health education media. There are various health education media, one of which is visual education or audiovisual media. Video or audiovisual media is a form of media that can present information or messages audiovisually, while education itself is education. Educational videos are a learning process through video media that presents information or messages audiovisually (Umami et al., 2021) (19).

CONCLUSION

Lectures through educational video media succeeded in increasing the understanding, attitudes and behavior of type II diabetes mellitus sufferers at the Muara Bangkahulu Community Health Center. Respondents, most of whom were over 56 years old, female, had a high school education, and were housewives, showed significant improvements in all aspects after the intervention.

SUGGESTION

For Patients, are encouraged to consistently maintain healthy lifestyle behaviors to preserve their own health. This includes regularly checking their health, engaging in physical activities, and managing their blood sugar levels to avoid excessive increases.

For Health Services, it is hoped that health services can continue the lecture method using video media into routine diabetes management programs so that more sufferers are willing to make healthy lifestyle changes.

For Academia, it is hoped that this research can serve as a resource or material to enhance knowledge, literature, and insights among both students and the general public. The goal is to support the effective implementation and practice of waste sorting.

For Future Researchers, future researchers are encouraged to use video-based educational media as a tool for further development or as a reference in studies related to the behavior of diabetes mellitus patients.

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