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The Effect Of Providing Educational Videos On Pharmacological Therapy On Medication Adherence In Patients With Diabetes Mellitus

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Abstrak

Kepatuhan pengobatan merupakan aspek penting dalam mengelola kondisi kronis seperti diabetes mellitus. Penelitian ini bertujuan untuk mengetahui dampak video edukasi terapi farmakologi terhadap kepatuhan pengobatan pada pasien diabetes melitus. Desain penelitian yang digunakan adalah korelasional dengan pendekatan Pra-Eksperimental. Populasi penelitian terdiri dari pasien diabetes melitus di RS Toelongrejo Pare Kabupaten Kediri. Sebanyak 25 responden dipilih secara konsekutif sampling, dan pengumpulan data dilakukan melalui pemberian kuesioner. Variabel bebasnya adalah pemberian video edukasi tentang terapi farmakologi, dan variabel terikatnya adalah kepatuhan minum obat. Analisis data meliputi coding, scoring, tabulasi, dan menggunakan uji statistik Wilcoxon. Sebelum intervensi, ditemukan 13 responden (52%) yang patuh dalam meminum obat. Namun, 24 responden (96%) menunjukkan peningkatan kepatuhan pengobatan setelah intervensi video edukasi. Analisis statistik menggunakan SPSS memberikan hasil yang signifikan dengan p-value sebesar 0,000 (α ditetapkan pada 5%), yang menunjukkan bahwa hipotesis penelitian diterima. Temuan penelitian menunjukkan bahwa menyediakan video edukasi tentang terapi farmakologis berdampak positif terhadap kepatuhan pengobatan pada pasien diabetes melitus. Intervensi multimedia dapat menjadi alat yang berharga dalam meningkatkan hasil pasien di rangkaian layanan kesehatan. Penelitian lebih lanjut disarankan untuk memvalidasi hasil ini dan mengeksplorasi dampak jangka panjang dari intervensi tersebut terhadap pengelolaan penyakit kronis.

Kata Kunci : *Diabetes Melitus, Kepatuhan Minum Obat, Video Edukasi, Terapi Farmakologis, Dampak Pasien*

Abstract

Medication adherence is a critical aspect of managing chronic conditions like diabetes mellitus. This study aims to investigate the impact of educational videos on pharmacological therapy on medication adherence among patients with diabetes mellitus. A correlational research design with a Pre-Experimental approach was employed. The study population consisted of patients with diabetes mellitus at RS Toelongrejo, Pare, Kediri Regency. A total of 25 respondents were selected using consecutive sampling, and data was collected through the administration of questionnaires. The independent variable was the provision of educational videos about pharmacological therapy, and the dependent variable was medication adherence. Data analysis involved coding, scoring, tabulation, and using the Wilcoxon statistical test. Before the intervention, 13 respondents (52%) were found to be compliant in taking their medications. However, 24 respondents (96%) displayed improved medication adherence after the educational video intervention. The statistical analysis using SPSS yielded a significant result with a p-value of 0.000 (α set at 5%), indicating that the research hypothesis was accepted. The study's findings suggest that providing educational videos on pharmacological therapy positively impacts medication adherence among patients with diabetes mellitus. Multimedia interventions can be valuable tools in enhancing patient outcomes in healthcare settings. Further research is recommended to validate these results and explore the long-term effects of such interventions on chronic disease management.

Keywords : *Diabetes Mellitus, Medication Adherence, Educational Videos, Pharmacological Therapy, Patient Impact*

INTRODUCTION

Diabetes mellitus (DM) is a complex group of metabolic disorders characterized by hyperglycemia, resulting from abnormalities in insulin secretion, insulin action, or a combination of both factors (Basuki et al., 2013). This chronic condition poses a significant health challenge worldwide. There are two main types of diabetes mellitus: Type 1 DM (Insulin-Dependent Diabetes Mellitus or IDDM) and Type 2 DM (Non-Insulin-Dependent Diabetes Mellitus or NIDDM), each with its distinct pathophysiological mechanisms. Type 1 DM is primarily an autoimmune disorder where the body's immune system mistakenly attacks and destroys insulin-producing beta cells in the pancreas's Langerhans islets. This autoimmune attack results in an absolute deficiency of insulin hormone, leading to a dependence on exogenous insulin therapy for survival. In contrast, Type 2 DM predominantly stems from insulin resistance, a condition in which the body's cells do not respond effectively to insulin. Over time, the pancreas may also produce less insulin, contributing to elevated blood glucose levels (Basuki et al., 2013).

The global burden of diabetes mellitus is a pressing concern. According to the Centers for Disease and Prevention (CDP) report in 2007, the worldwide prevalence of DM had already reached 4% of the global population, and projections suggested it would escalate to 5.4% by 2025. Notably, countries such as China and India reported staggering numbers, with 50 million individuals affected. In the United States, DM ranks as the sixth leading cause of death, underscoring its significant public health implications (Soegondo, 2022). One of the concerning aspects of DM is its association with other health conditions, particularly when left uncontrolled. Individuals with DM are at higher risk of developing comorbidities such as coronary heart disease, pancreatic infections, and various degenerative diseases (Soegondo, 2002). These complications can result in increased morbidity and mortality rates among DM patients. The impact of diabetes mellitus extends to Indonesia, where its prevalence varies across regions. In 2010, it was estimated that more than 5 million people in Indonesia were living with DM, contributing to the global total of 239.9 million DM cases (Depkes RI, 2015). The data reveals the significant health burden that DM poses on the Indonesian population, necessitating effective management and prevention strategies.

In East Java, the prevalence of DM is notably high, affecting approximately 5.6% of the population. Even in nearby regions like Pare Regency, the prevalence remains concerning, with approximately 1.1% of the population living with DM (Depkes RI, 2015). The East Java Provincial Health Office reported that in 2011, over 13,000 individuals sought outpatient care for DM in the province, with more than 4,000 requiring inpatient treatment (Depkes RI, 2015). HVA Hospital, located in Pare Regency, serves as a healthcare institution grappling with the increasing burden of diabetes mellitus. A report from 2019 at HVA Hospital identified DM as the top degenerative disease among the ten most frequently treated conditions. The report further revealed that over 5,000 visits were made by DM patients, consisting of 7.73% inpatient cases and 92.3% outpatient cases, with 461 new diagnoses (Profil RS HVA, 2020).

Data from the Hospital Information and Management System (SIMRS) at HVA Hospital in Pare, East Java, provides additional insights into the rising prevalence of DM in the region. Over a three-year period from 2009 to 2011, there was a significant increase in the number of DM patients seeking treatment at the hospital. In 2009, 637 DM patients received care, with 295 inpatients and 342 outpatients. The following year, in 2010, the number rose to 708 patients, including 323 inpatients and 385 outpatients. By 2011, the number had reached 786 DM patients, comprising 392 inpatients and 394 outpatients (Dinkes RI, 2020). The escalation of DM cases in Pare Regency, East Java, has generated several pressing issues, including increased healthcare costs, strain on healthcare facilities, and reduced quality of life for affected individuals. The

complications associated with uncontrolled DM, such as cardiovascular diseases, kidney problems, and neuropathy, place further burdens on the healthcare system (Basuki et al., 2013).

To address the challenges posed by the rising prevalence of DM, several strategies can be implemented. Firstly, public health campaigns focusing on lifestyle modifications, including dietary changes and increased physical activity, can play a crucial role in diabetes prevention. Furthermore, improving access to healthcare services, particularly for early diagnosis and effective management of DM, is essential. Healthcare providers should prioritize patient education on self-care, medication adherence, and blood glucose monitoring to empower individuals to manage their condition effectively. In conclusion, diabetes mellitus is a global health concern characterized by hyperglycemia due to abnormalities in insulin secretion and action. The prevalence of DM is on the rise worldwide, with substantial impacts on public health and healthcare systems. The case of Pare Regency in East Java, Indonesia, reflects the growing burden of DM, leading to increased healthcare utilization and associated challenges. Effective prevention and management strategies, including lifestyle modifications and accessible healthcare services, are crucial in mitigating the impact of DM and improving the quality of life for affected individuals.

METHOD

The research employs a posttest design within a single group, utilizing a Pre-Experimental approach to investigate the cause-and-effect relationship. This design involves a single group of subjects who receive a questionnaire before and after an intervention. The research was conducted at HVA Hospital in Pare, Kediri, in August 2021. The accessible population consists of patients scheduled for elective surgery at this hospital, with a total sample size of 25. The study's independent variable is information and education, while the dependent variable is the anxiety level of patients undergoing surgery. Anxiety levels are measured using the Depression Anxiety Stress Scale (DASS 42), categorized as mild, moderate, severe, or panic. Data analysis involves the Wilcoxon statistical method, which assesses the average difference between two paired samples.

RESULTS

Table 1. Frequency Distribution of Respondent Characteristics Based on Age at HVA Hospital Pare in 2021

Variable	Cathegory	Frequency	Percent (%)
Age	<20 years	1	4,0
	20-40 years	13	52,0
	>40 years	11	44,0
Occupation	Housewife	10	40,0
	Entrepreneur	7	7,0
	Civil Servant/Honorary	8	32,0
Education	Elementary School	13	52,0
	Junior High School	10	40,0
	High School/University	2	8,0
Gender	Male	7	28,0
	Female	18	72,0
	Total	25	100

Source: Primary Data

Table 1 presents the frequency distribution of respondent characteristics based on age at HVA Hospital Pare in 2021. The respondents are categorized into different age groups, occupations, education levels, and genders. In terms of age, 4% of respondents are under 20 years old, 52% fall within the 20-40 years age group, and 44% are over 40 years old. Regarding occupation, 40% are housewives, 7% are entrepreneurs, and 32% are civil servants or hold honorary positions. Concerning education, 52% have completed elementary school, 40% have junior high school education, and 8% have a high school or university degree. Lastly, in terms of gender, 28% are male, while the majority, 72%, are female.

Table 2. Frequency Distribution of Medication Adherence Before Providing Pharmacological Therapy Educational Videos at HVA Hospital Pare in 2021

Medication Adherence	Frequency	Percent (%)
Adherence	13	52,0
No Adherence	12	48,0
Total	25	100

Source: Primary Data

Table 2 displays the frequency distribution of medication adherence among respondents before they were exposed to pharmacological therapy educational videos at HVA Hospital Pare in 2021. The table indicates that 52% of the respondents exhibited adherence to their medication regimen, while the remaining 48% did not adhere to it. This data represents a total of 25 respondents, constituting 100% of the sample.

Table 3. Frequency Distribution of Medication Adherence After Providing Pharmacological Therapy Educational Videos at HVA Hospital Pare in 2021

Medication Adherence	Frequency	Percent (%)
Adherence	24	96,0
No Adherence	1	4,0
Total	25	100

Source: Primary Data

Table 3 presents the frequency distribution of medication adherence among respondents after exposure to pharmacological therapy educational videos at HVA Hospital Pare in 2021. The table reveals that 96% of the respondents showed adherence to their medication regimen, while 4% did not. These findings are based on data from a total of 25 respondents, constituting 100% of the sample.

Table 4. Frequency Distribution of Medication Adherence Before and After Providing Pharmacological Therapy Educational Videos at HVA Hospital Pare in 2021

Medication Adherence	Medication Adherence				P Value
	Before		After		
	N	%	N	%	
Adherence	13	52,0	24	96,0	
No Adherence	12	48,0	1	4,0	0,000
Total	13	100,0	12	100,0	

Source: Wilcoxon Test

Table 4 provides a comparison of medication adherence before and after the provision of pharmacological therapy educational videos at HVA Hospital Pare in 2021. Before the

intervention, 52% of the respondents adhered to their medication regimen, while 48% did not. After the intervention, there was a significant improvement in medication adherence, with 96% of the respondents adhering to their medication regimen, while only 4% did not adhere to it. This improvement was found to be highly statistically significant with a p-value of 0.000, indicating a substantial positive impact of the educational videos on medication adherence. The data is based on a total of 25 respondents.

DISCUSSION

The results presented in Table 1 show the distribution of respondent characteristics based on age at HVA Hospital Pare in 2021. The study classified respondents into different age groups, occupations, education levels, and genders. In terms of age, 4% of the respondents were below 20 years old, 52% fell into the 20-40 years age category, and 44% were over 40 years old. Regarding occupation, 40% identified as housewives, 7% as entrepreneurs, and 32% as civil servants or holding honorary positions. Concerning education, 52% had completed elementary school, 40% had attained a junior high school education, and 8% held a high school or university degree. Finally, with regard to gender, 28% were male, while the majority, 72%, were female. These demographic characteristics provide valuable insights into the composition of the respondents involved in the study. Understanding the age, occupation, education, and gender distribution of the respondents is essential for a comprehensive analysis of the research findings.

Previous research has indicated that demographic factors, such as age, education, and gender, can influence various health-related behaviors, including medication adherence. For instance, studies have suggested that older individuals may be more adherent to medication regimens due to a greater awareness of health issues and a higher likelihood of regular healthcare interactions (Smith et al., 2015). Additionally, education levels can affect health literacy, potentially impacting an individual's understanding of medication instructions and the importance of adherence (Berkman et al., 2021). Gender can also play a role, as research has shown that women tend to be more adherent to medications compared to men (Viswanathan et al., 2012).

Considering these insights, the demographic distribution of respondents in this study may have implications for the research findings related to medication adherence. The high representation of female respondents could influence the overall adherence rates, as women have been reported to exhibit better adherence in previous studies. Furthermore, the educational background of the respondents may influence their comprehension of the pharmacological therapy educational videos, potentially affecting the effectiveness of the intervention. In conclusion, Table 1 provides a detailed overview of the demographic

characteristics of the respondents in this study. Understanding these characteristics is crucial for contextualizing and interpreting the research findings, particularly in the context of medication adherence. Future analysis will explore the relationship between these demographic factors and medication adherence outcomes to provide a comprehensive understanding of the impact of educational videos on this important health behavior.

Table 2 provides an overview of the frequency distribution of medication adherence among respondents before they were exposed to pharmacological therapy educational videos at HVA Hospital Pare in 2021. The table reveals that 52% of the respondents demonstrated adherence to their prescribed medication regimen, whereas the remaining 48% did not adhere to it. It is essential to analyze and discuss these findings in the context of existing literature and research in this field. Previous research has extensively examined medication adherence and its determinants. Medication adherence is a crucial aspect of healthcare management, as non-adherence can lead to compromised treatment outcomes and increased healthcare costs (Cutler et al., 2018). Numerous factors influence medication adherence, including patient education, healthcare provider communication, and patient beliefs and perceptions (Kardas et al., 2013). The findings in Table 2 suggest that a substantial portion of respondents did not adhere to their medication regimens before exposure to educational videos. This non-adherence rate of 48% is noteworthy and underscores the importance of interventions to improve medication adherence among patients. The significance of this issue is consistent with previous research that has highlighted the prevalence of non-adherence and its adverse effects on patient health (Sabate, 2013).

The introduction of pharmacological therapy educational videos is an intervention aimed at improving medication adherence. Educational videos have been employed in various healthcare settings to enhance patient knowledge, address misconceptions, and motivate patients to adhere to their prescribed medications (Inglis et al., 2021). Therefore, the effectiveness of these videos in influencing medication adherence is a critical area of investigation. In summary, Table 2 illustrates the medication adherence rates among respondents before exposure to pharmacological therapy educational videos. The findings indicate a substantial non-adherence rate, emphasizing the need for interventions to enhance adherence. The subsequent analysis will assess the impact of the educational videos on medication adherence, providing insights into the effectiveness of this educational approach in improving patient compliance.

Table 3 provides an overview of the frequency distribution of medication adherence among respondents after their exposure to pharmacological therapy educational videos at HVA Hospital Pare in 2021. The table illustrates that a significant 96% of the respondents exhibited

adherence to their prescribed medication regimen, while a small 4% did not adhere to it. These findings shed light on the impact of educational videos on medication adherence and warrant a comprehensive analysis. Previous research has emphasized the importance of interventions to improve medication adherence among patients. Non-adherence to medication regimens can lead to suboptimal treatment outcomes and increased healthcare costs (Cutler et al., 2018). A review of systematic reviews by Kardas et al. (2013) identified various determinants of patient adherence, including patient education and interventions that enhance patient knowledge and understanding of their medications.

The findings in Table 3 highlight a remarkable improvement in medication adherence following exposure to educational videos. The substantial increase from 52% to 96% adherence rate suggests that the educational videos had a positive impact on patient compliance. This aligns with the literature, which suggests that educational interventions, such as videos, can effectively enhance patient adherence (Inglis et al., 2021). The researcher's opinion regarding these results is that the educational videos played a crucial role in improving medication adherence among the respondents. The significant increase in adherence post-intervention demonstrates the effectiveness of this educational approach. The videos likely provided valuable information, addressed misconceptions, and motivated patients to adhere to their prescribed medications. However, it is essential to acknowledge that the sample size in this study was relatively small, and further research with a larger and more diverse population is warranted to validate these findings. In conclusion, Table 3 illustrates the medication adherence rates among respondents after exposure to pharmacological therapy educational videos. The data indicates a substantial improvement in adherence, emphasizing the positive impact of educational interventions. While these results are promising, additional research is needed to confirm the effectiveness of educational videos in enhancing medication adherence on a broader scale.

Table 4 presents a comparative analysis of medication adherence before and after administering pharmacological therapy educational videos at HVA Hospital Pare in 2021. The results reveal notable differences in medication adherence rates between the two time periods. Before the intervention, 52% of the respondents demonstrated adherence to their prescribed medication regimen, while 48% did not adhere to it. These findings are consistent with the existing literature, highlighting medication adherence challenges among patients (Cutler et al., 2018). However, after the implementation of the educational videos, there was a substantial improvement in medication adherence. A remarkable 96% of the respondents adhered to their medication regimen, while only 4% did not. This substantial increase in adherence rate is highly statistically significant, as indicated by the p-value of 0.000. These results suggest that the educational videos profoundly and positively impacted enhancing medication adherence

among the respondents. This study's findings align with previous research that emphasizes the effectiveness of educational interventions in improving medication adherence (Inglis et al., 2021). Educational videos likely provided valuable information, clarified doubts or misconceptions, and motivated patients to follow their prescribed medication regimens.

In the researcher's opinion, these results underscore the importance of educational interventions in healthcare settings. They demonstrate the potential of educational videos as a practical tool to enhance patient compliance with medication regimens. The significant increase in adherence rates after the intervention signifies the relevance and effectiveness of such educational approaches in healthcare practice. Nonetheless, it is essential to acknowledge some limitations of this study, including the relatively small sample size and the need for further research to confirm these findings on a larger and more diverse scale. Additionally, long-term follow-up studies are necessary to assess the sustainability of improved medication adherence over time. In conclusion, Table 4 highlights the substantial improvement in medication adherence following the provision of pharmacological therapy educational videos. These findings underscore the positive impact of educational interventions on patient adherence, which has significant implications for improving healthcare outcomes and patient well-being.

CONCLUSIONS

The study's findings suggest that providing educational videos on pharmacological therapy positively impacts medication adherence among patients with diabetes mellitus. Multimedia interventions can be valuable tools in enhancing patient outcomes in healthcare settings. Further research is recommended to validate these results and explore the long-term effects of such interventions on chronic disease management.

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