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Health Education with Videos on Drug Adherence in the Elderly with Hypertension

Komang Ayu Henny Achjar[1*], Putu Ayu Erika Prameswari[2], Agus Sri Lestari[3], Nyoman Ribek[4], Ketut Gama[5], I G. K. Gede Ngurah[6], Ni Ketut Nuratni[7]

[1,2,3,4] Nursing Department, Polytechnic of the Ministry of Health Denpasar, Indonesia

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ABSTRAK

Kepatuhan minum obat pada lansia hipertensi sering menjadi tantangan, yang dapat meningkatkan risiko komplikasi. Tujuan penelitian ini adalah untuk mengevaluasi pengaruh edukasi kesehatan melalui video terhadap kepatuhan minum obat pada lansia di Puskesmas I Denpasar Timur. Penelitian ini menggunakan desain penelitian kuantitatif dengan pendekatan pre-experimental. Subjek penelitian adalah 53 lansia hipertensi. Pengumpulan data dilakukan sebelum dan setelah intervensi menggunakan video edukasi, dengan instrumen berupa kuesioner kepatuhan minum obat. Analisis data dilakukan menggunakan uji statistik Wilcoxon. Sebelum edukasi, mayoritas responden menunjukkan kepatuhan rendah (52,8%). Setelah intervensi, tingkat kepatuhan tinggi meningkat signifikan menjadi 67,9%, sedangkan kepatuhan rendah menurun menjadi 13,2%. Hasil uji Wilcoxon menunjukkan p-value = 0,000, mengindikasikan pengaruh signifikan dari edukasi video terhadap kepatuhan minum obat. Edukasi kesehatan melalui video efektif meningkatkan kepatuhan minum obat pada lansia hipertensi. Implikasi penelitian ini mendorong penerapan metode edukasi serupa untuk meningkatkan kepatuhan terapi di berbagai setting kesehatan. Kesimpulannya, pendidikan kesehatan melalui video secara signifikan meningkatkan kepatuhan pengobatan pada lansia hipertensi.

ABSTRACT

Adherence to medication in the elderly with hypertension is often a challenge, which can increase the risk of complications. The purpose of this study is to evaluate the effect of health education through video on medication adherence in the elderly at Puskesmas I East Denpasar. This study uses a quantitative research design with a pre-experimental approach. The subjects of the study were 53 elderly people with hypertension. Data collection was carried out before and after the intervention using educational videos, with instruments in the form of medication compliance questionnaires. Data analysis was carried out using the Wilcoxon statistical test. Before the education, the majority of respondents showed low compliance (52.8%). After the intervention, the high compliance rate increased significantly to 67.9%, while the low compliance decreased to 13.2%. The results of the Wilcoxon test showed a p-value = 0.000, indicating a significant influence of video education on medication adherence. Health education through videos is effective in increasing medication adherence in the elderly with hypertension. The implications of this study encourage the application of similar educational methods to improve therapy adherence in various health settings.

1. INTRODUCTION

Non-communicable diseases (NCDs) are the leading cause of death globally. In 2012, NCDs accounted for approximately 38 million (68%) of a total of 59 million deaths worldwide (Djibu et al., 2021). More than 40% of these deaths occur under the age of 70. Hypertension (HT) or high blood pressure is one of the significant global health problems (Budreviciute et al., 2020; Qiao et al., 2022). Hypertension is often called a "silent killer" because it often does not show obvious symptoms. The diagnosis of hypertension is established if blood pressure measurements show a systole value of ≥ 140 mmHg and/or a diastol ≥ 90 mmHg at more than one visit. T he prevalence of hypertension in Indonesia reached 34.1%, an increase from 25.8% in Riskesdas 2013 (Coates et al., 2020; Martinez et al., 2020; Wang & Wang, 2020). In Bali Province, based on Health Profile 2020 data, there are 175,821 cases of hypertension over the age of 15 years, with 15,421 people receiving health services. In the working area of Puskesmas I East Denpasar, there are 11,440 hypertension patients, with 34.7% of them receiving health services. Hypertension contributes to about 7.1 million global deaths, which is about 13% of total deaths. In developing countries, the prevalence of hypertension is estimated to increase by about 80%. The disease can affect all ages and is one of the most

*Corresponding author.
E-mail addresses: komangayuhenny@gmail.com (Komang Ayu Henny Achjar)

common causes of death, with about 1 billion adults diagnosed with hypertension, and is expected to rise to 1.6 billion by 2025 (Dai et al., 2021; Zhou et al., 2021).

The management of hypertension includes pharmacological and non-pharmacological therapies (Dhungana et al., 2022; Do Nascimento et al., 2021; Verma et al., 2021). Adherence to medication is one of the important components to achieve therapeutic goals. According to data from the World Health Organization, of the 50% of hypertension patients (Al-Makki et al., 2022; Choudhry et al., 2022; Kvarnström et al., 2021). detected, only 25% received treatment and only 12.5% were treated well. Riskesdas 2007 data shows that 37.1% of 76.1% of hypertension incidences in Indonesia are caused by non-compliance in taking medication (Maytasari & Sartika, 2020; Wiarsih et al., 2020). Adherence to medication is measured through patient behavior in following medication recommendations, diet, lifestyle changes, and visits to health, a high compliance score is 8 (Jankowska-Polanska et al., 2020; Panahi et al., 2022; Ranjbaran et al., 2022). Hypertension therapy includes the use of antihypertensive drugs to control blood pressure and reduce the risk of complications such as stroke, with the prevalence of hypertension in stroke patients reaching 95% (Mullen & Anderson, 2022; Persu et al., 2021; Saiz et al., 2022). However, antihypertensive therapy is not effective without the support of patient compliance in taking medication regularly (Burnier et al., 2020; Parati et al., 2021). In addition to pharmacological therapy, non-pharmacological approaches such as weight loss, low-salt diets, exercise, and alcohol consumption reduction are also important. Non-adherence to medication can lead to saturation and low success rates in the management of hypertension (Kodela et al., 2023; Qian et al., 2024).

To ensure the quality of life of the elderly, the government and the private sector provide health services at health centers and other health facilities (Fulmer et al., 2021; Janto et al., 2022). Minimum service standards require health checks for residents aged 60 years and above at least once a year. The role of rehabilitative nurses in improving medication adherence includes providing health education, monitoring medication schedules, diets, and regular visits to health facilities. Health education through electronic media such as videos also contributes to improving patient understanding (Afful-Dadzie et al., 2023; Stellefson et al., 2020). This study aims to evaluate the factors that affect medication adherence in hypertensive patients as well as the effectiveness of health education interventions in improving such compliance. This research is expected to provide insight into challenges and solutions in hypertension management, as well as the contribution of health education in improving the quality of life of hypertension patients.

2. METHODS

This study uses a quasi-experimental design with a one-group pre-test and post-test approach to evaluate the effect of health education through video on medication adherence in the hypertensive elderly at the East Denpasar Health Center I. The research was carried out from March to May 2023, involving 53 elderly people selected using purposive sampling from a population of 110 elderly people. The inclusion criteria include seniors aged 60-74 who take hypertension medications, while the exclusion criteria include those with serious complications, hearing loss, or mental disorders. Data collection was carried out using the Morisky medication adherence questionnaire (MMAS-8), which was filled out by respondents before and after the intervention. The intervention was in the form of health education using a 15-minute video, which explained about hypertension and the importance of medication compliance. The data collection process involves applying for research permits, approaching the subjects, and implementing pre-tests and post-tests within a period of one month. The data collected through the questionnaire was analyzed by editing, coding, and data entry steps using SPSS. Univariate analysis was performed to determine frequency distribution and descriptive statistics, while bivariate analysis used the Wilcoxon test to assess differences in medication adherence before and after the intervention.

3. RESULT AND DISCUSSION

Results

The results of the study are related to the influence of health education with videos on medication compliance in the hypertensive elderly in the Working Area of Puskesmas I East Denpasar in 2023. The characteristics of the respondents can be seen in the following Table 1.

Table 1. Characteristics of Respondents

Characteristic	*Frequency (f)*	*Percentage (%)*
Age (Years)		
60-64 years old	20	37.7
65-69 years old	8	15.1

70-74 years old	25	47.2
Gender		
Man	24	45.3
Woman	29	54.7
Education level		
SD	19	35.8
JUNIOR	14	26.4
SMA	12	22.6
College	8	15.1
Job Type		
Private	9	17.0
Self employed	10	18.9
Pensioner	7	13.2
Not Working	27	50.9

Table 1 shows that the majority of respondents aged 70-74 years, as many as 25 people (47.2%), indicate the need for special attention to this age group in health programs. The majority of respondents were women, namely 29 people (54.7%), and had an elementary education level with a total of 19 people (35.8%), highlighting the need for simple and easy-to-understand health information delivery. In addition, the high percentage of respondents who are not working, namely 27 people (50.9%), indicates that they may have more time to attend health programs, but may also face economic challenges.

Table 2. Results of Observation of Medication Adherence in Research Subjects before Being Given Health Education with Videos

Category	Before	
	Frequency (f)	**Percentage (%)**
High Compliance	13	24.5
Medium Compliance	12	22.6
Low Compliance	28	52.8
Sum	**53**	**100**

Table 2 shows the results of observation of medication adherence in the study subjects before being given health education via video. Of the 53 respondents, the majority showed a low level of compliance, namely 28 people (52.8%). A total of 13 people (24.5%) showed high compliance, while 12 people (22.6%) were in the moderate compliance category. This data indicates that most respondents have inadequate compliance before receiving educational interventions.

Table 3. Results of Observation of Medication Adherence in Research Subjects after Being Given Health Education with Videos

Category	After	
	Frequency (f)	**Percentage (%)**
High Compliance	36	67.9
Medium Compliance	10	18.9
Low Compliance	7	13.2
Sum	**53**	**100**

Table 3 shows the results of observation of medication adherence in the study subjects after being given health education through video. Of the 53 respondents, the majority now show high compliance, namely 36 people (67.9%). The number of respondents with moderate compliance decreased to 10 people (18.9%), while low compliance decreased significantly to 7 people (13.2%). These data showed that the health education intervention with video effectively improved the rate of medication adherence in most of the study subjects.

Table 4. The Effect of Health Education with Videos on Drug Medication Compliance in the Elderly with Hypertension in the Work Area of Puskesmas I East Denpasar in 2023

Category	Compliance with Taking Medication Before Education		Compliance with Taking Medication After Education		*P-value*
	f	%	*f*	%	
High Compliance	28	52.8	7	13.2	
Medium Compliance	12	22.6	10	18.9	0.000
Low Compliance	13	24.5	36	67.9	
Sum	**53**	**100.0**	**53**	**100.0**	

Table 4 finds a significant effect of health education through video on medication adherence in the hypertensive elderly in the work area of Puskesmas I East Denpasar in 2023. Before the intervention, there were 28 elderly people (52.8%) with high compliance, which dropped to 7 people (13.2%) after education. In contrast, low compliance increased from 13 people (24.5%) to 36 people (67.9%). Wilcoxon's statistical test showed a p-value = 0.000, which is well below alpha 0.05, indicating that health education with videos significantly improved medication adherence among study subjects.

Discussion

The results of this study show that health education through video significantly increases medication adherence in the elderly with hypertension. Prior to the intervention, the majority of respondents were in the low compliance category, with 52.8% indicating inadequate compliance. After being educated, high compliance increased to 67.9%, while low compliance decreased drastically to 13.2%. The theoretical framework underlying the effectiveness of video-based health education in improving medication adherence includes several important theoretical. Cognitive Behavioral Theory explains that educational videos improve patient understanding by providing information visually and auditorily, reinforcing their knowledge of medication adherence (Afful-Dadzie et al., 2023; Muñoz & Letouze, 2022). Additionally, Motivation and Hope Theory shows that engaging videos can reinforce patients' motivation by explaining the benefits of compliance, thereby increasing their expectations for positive treatment outcomes (Fernandes et al., 2024; Söderlund & von Heideken Wågert, 2021). Behavior Change Models, such as the Transtheoretical Model and the Health Belief Model, underline how video can facilitate behavior change by increasing awareness and providing relevant information (Akdaş & Cismaru, 2022; Labadie, 2022).

Furthermore, Social Learning Theory explains that video serves as a model of imitable behavior, providing real-world examples of patient motivating compliance (Alkalah, 2020; Hadeed, 2022). The Theory of Information and Communication emphasizes that video as a dynamic medium makes it easier to understand and retain medical information compared to printed materials (Alkalah, 2020; Hadeed, 2022). Overall, this theoretical framework supports the study's findings that health education through video significantly improves medication adherence by improving patient understanding, motivation, and behavior change (Barut Tugtekin & Dursun, 2022; Pal & Patra, 2021). The findings of this study are also consistent with previous studies that show that multimedia- based educational methods, including video, can be effective in improving medication adherence (Abdulrahaman et al., 2020; Mayer et al., 2020). Suggests that technology-based interventions, such as educational videos, can improve medication adherence in diabetic patients by improving their understanding and motivation (Chun-Yun Kang, 2022; Van Rhoon et al., 2020). It found that the use of educational videos in clinical settings improved treatment adherence in hypertensive patients by providing clearer and more engaging information. Confirms that video-based education improves patient knowledge and adherence to treatment, especially in settings involving chronic diseases (Gan et al., 2022; Ghozali, 2023).

Also supports these results by showing that interactive media, including video, can be effective in improving medication adherence and patient health in a way that is easily accessible and understandable (Liliana et al., 2020; Suryana et al., 2021). Emphasized that educational videos can overcome information barriers and improve treatment adherence in patients with long-term health conditions through an informative and engaging approach. The novelty of this study lies in the application of video media as an educational tool to improve medication adherence in the hypertensive elderly at the East Denpasar Health Center I, which is a specific context in Indonesia. While many previous studies have explored the effectiveness of various educational methods in improving therapy adherence, most have focused on traditional media such as brochures or face-to-face sessions, with little emphasis on the use of video in local and population- specific settings in developing countries (Hamidi et al., 2022; O'Toole et al., 2022). This

study fills this gap by providing empirical evidence that educational videos can effectively improve medication adherence in the elderly with hypertension in Indonesia. These findings contribute to the literature by showing that educational videos not only improve compliance but also adapt relevant methods for populations with unique socio-economic and demographic characteristics (Masnah et al., 2023, 2024; Putri et al., 2021). Which tests the use of video for diabetic patients in developed countries, and focusing on health education for the elderly in urban communities, this study highlights the importance of local context and cultural adaptation in the application of educational technology. This novelty provides new insights into how modern educational tools can be effectively implemented in different health settings, and encourages further research with diverse approaches and evaluation of outcomes in different populations and health conditions (Regmi & Jones, 2020; van Diggele et al., 2020).

The strength of this study is that videos can present information in a visual and audio way, which can help older adults understand instructions about their medications and illnesses better than text or verbal explanations alone. Seniors can watch the video repeatedly, learning and remembering information better without feeling rushed. By using videos, health workers can reduce the time they spend explaining information individually and focus more on other aspects of patient care. The study's results may encourage developing and wider application of video-based health education methods. This includes creating videos specifically designed for the needs of older adults with hypertension, as well as evaluating the effectiveness of different video formats. The study may encourage the development of videos tailored to patients' needs, such as personalized videos based on their level of understanding or specific conditions. However, this study has the limitation that not all older adults have sufficient access or skills to use the technological devices required to watch videos, such as smartphones, tablets or computers. Limitations in technology access may hinder the effectiveness of video-based education.

4. CONCLUSION

This study concludes that health education through videos significantly improves adherence to medication in older adults with hypertension. Before the intervention, most respondents were in the low compliance category. After the education, high compliance increased while low compliance dropped dramatically. The theoretical framework underlying the effectiveness of video-based health education in improving medication adherence includes several important theoretical approaches. Videos serve as models of behaviour that can be imitated, providing real examples of adherence that motivate patients.

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