

Original Research

The Use of Educational Videos to Enhance Self-Awareness in Hypertension Patients

Rizka Yunita^{1*}, Moh. Husyn Ainul Yaqin²

^{1,2} Faculty of Health Sciences, Hafshawaty Zainul Hasan University, Probolinggo, East Java, Indonesia

***Corresponding author:**

Rizka Yunita

Faculty of Health Sciences, Hafshawaty Zainul Hasan University

Jl. Raya Area Pendidikan Hafsha PP Zainul Hasan Genggong, Pajarakan, Probolinggo

Email: rizkayunita10@gmail.com

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ABSTRACT

Hypertension is a significant cause of morbidity and mortality worldwide. Patients who struggle to manage their blood pressure risk severe complications such as stroke, heart failure, and kidney disease. A critical factor in their inability to control blood pressure is a lack of self-awareness about their condition. This study aimed to evaluate the impact of educational videos about hypertension on the self-awareness of patients diagnosed with this condition. This research employed a pre-experimental one-group pre-post-test design, with a total study population of 48 individuals with hypertension. Utilizing a purposive sampling method, the sample for this investigation consisted of 43 participants. The primary instrument for data collection was a self-awareness questionnaire, and the Wilcoxon test was utilized for data analysis. The findings revealed that 27 participants (63%) exhibited a low level of self-awareness prior to the implementation of the educational videos. By lowering the intervention, the number of participants achieving a high level of self-awareness similarly increased to 27 (63%). The results show a significant effect of the hypertension educational videos on the patients' self-awareness, with a p-value of 0.001. The educational videos incorporated images, symbols, and animations, accompanied by audio elements, facilitating effective communication of information about hypertension. In conclusion, educational videos assist individuals in comprehending and applying the knowledge presented, ultimately enhancing their awareness of the importance of hypertension management.

Introduction

Hypertension is still one of the health problems that cause death globally. Hypertension is characterized by clinical symptoms of increased systolic blood pressure of more than 140 mmHg and diastolic pressure of more than 90 mmHg (Unger *et al.*, 2020). If people with hypertension cannot control their blood pressure, it can have a long-term negative impact on their health conditions. The negative effects on individuals who experience uncontrolled hypertension can trigger complications such as stroke, heart attack, heart failure, damage to the kidney organs, and other health problems, and even worse effects can cause death.

Currently, the prevalence rate of hypertension continues to increase every year. Patients with hypertension are estimated to have reached 349 million, mainly in high-income countries. Meanwhile, people with hypertension in low- and middle-income countries have reached 1.04 billion (Unger *et al.*, 2020). Meanwhile, hypertension patients in Indonesia have reached 34.11% of the total blood pressure measurements in the population aged more than 18 years. Meanwhile, hypertension cases in the East Java Region have reached 36.32% of the total blood pressure measurements in the population aged more than 18 years. Meanwhile, the number of people with hypertension in the Probolinggo Region has reached 30.96% of the total population aged more than 18 years who had their blood pressure measured (Ministry of Health Republic of Indonesia, 2018). If hypertension cases can be adequately treated, it is estimated to prevent 76 million deaths, reduce stroke cases by 120 million, reduce 76 million heart attack cases, and prevent 17 million cases of heart failure caused by hypertension by 2050 (World Health Organization, 2023).

Based on the results of a preliminary study conducted on 20 May 2024 in Karangbong Village, Pajarakan Subdistrict, data were obtained that 7 out of 10 hypertensive patients said that most of them had experienced hypertension for more than 3 years. Most people with hypertension say their blood pressure tends to be high, and it is difficult for their blood pressure to drop. This

condition is because hypertensive patients cannot be separated from eating salty foods, still like to smoke every day, drink coffee, and are reluctant to take medicine. After all, they feel bored and never check their blood pressure at the health centre because they are used to blood pressure that remains high.

Hypertension occurs due to angiotensin in the blood, which is vital in controlling blood pressure. Angiotensin in the blood stimulates the production of renin hormone that converts angiotensin into angiotensin I. Next, angiotensin I is converted into angiotensin II by the angiotensin-converting enzyme (ACE). Furthermore, angiotensin I is converted into angiotensin II by the angiotensin-converting enzyme (ACE). Angiotensin II in the blood will cause vasoconstriction in the arteriolar wall, increasing blood pressure in the arterial wall. In addition, angiotensin II can also increase blood pressure in the renal arteries to reduce salt and water excretion. Angiotensin II triggers the production of aldosterone, which increases cardiac output. This condition causes hypertension (Oparil *et al.*, 2018).

To the above explanation, of course, the increase in hypertension patients, which is increasing every year, is due to their low self-awareness. Hypertension patients mostly experience low self-awareness. This condition is evidenced by the difficulty of hypertensive patients in controlling the food consumed every day, where they still eat foods that tend to be salty; patients also consume cigarettes, which are difficult to control. In addition, hypertensive patients do not adhere to taking medicines regularly. As a result of the low self-awareness of hypertensive patients, their blood pressure tends to be high, and they cannot control their blood pressure (Bakhsh *et al.*, 2017).

Self-awareness is an individual's ability to control, manage, and organize themselves to make the right decisions for their benefit. Self-awareness in people with hypertension is a significant indicator because it can assess their ability to control their blood pressure. Hypertensive patients who have good self-awareness can certainly manage themselves, such as understanding the importance of conducting routine blood pressure checks, the importance of dieting,

and taking regular medication. However, it is in contrast to patients who have low self-awareness, tend to refuse to take medicine every day, especially when blood pressure has dropped, and are reluctant to check into health facilities when blood pressure is stable (Sapang *et al.*, 2023).

Various promotive efforts have been made to increase understanding of hypertension, including providing education through leaflet media. The results of previous studies have described that education using leaflets can increase the knowledge of people with hypertension. Leaflet media is one of the health education media that contains a set of information or messages poured into folded printed paper leaflets to be delivered to the general public. However, education using leaflets also has disadvantages, such as the risk of being easily lost and damaged, and the information conveyed needs to be more extended and more extensive, so the material cannot be conveyed thoroughly (Ernawati *et al.*, 2020).

By the existing problem, the researcher uses other educational media that are more effective and interactive as a strategy to present all health information so that people with hypertension can apply it in their daily lives. Therefore, to overcome these problems, a strategy is needed to improve hypertension control management by providing educational videos. Educational video is one of the learning media that involves audio, visuals, symbols, and images, and it can provide more informative, educational, and instructional information. Educational videos are also one of the media that involve several senses, such as the senses of sight and hearing, so that the information conveyed will be easier to understand and comprehend so that individuals can apply it. In addition, educational videos can also combine several sources and be played repeatedly as desired (Mahardika & Widyandari, 2023).

Accordingly, this study aims to analyze the application of hypertension educational videos on self-awareness in patients with hypertension.

Method

This study used a pre-experimental research design with one group pre-post-test

design. The study population was all hypertensive patients in Karangbong Village, Pajarakan District, Probolinggo Regency, totalling 48 people. The sampling technique used was purposive sampling. The research sample was a portion of hypertensive patients who met the inclusion and exclusion criteria of 43 people. The inclusion criteria were hypertensive patients for over 3 years, systolic blood pressure ≥ 140 mmHg and diastolic pressure ≥ 90 mmHg, and hypertensive patients not actively visiting the posyandu (integrated service post). Meanwhile, the exclusion criteria were hypertensive patients with visual and hearing impairment and hypertensive patients with comorbidities such as diabetes mellitus, heart disease, and stroke.

The research instrument utilized was a self-awareness questionnaire consisting of 30 question items. The self-awareness questionnaire has three assessment indicators, including the causes of hypertension, signs and symptoms of hypertension, and hypertension control. Question items on the self-awareness questionnaire have favourable questions with answer choices never (1), rarely (2), sometimes (3), often (4), always (5) while unfavourable questions with answer choices never (5), rarely (4), sometimes (3), often (2), always (1). Before being used as a research instrument, the self-awareness questionnaire was first carried out with a validity test and reliability test and obtained the validity test results with a minimum value of ρ value 0.575 and a maximum of 0.921 while the reliability test results were 0.892. Based on this data, it can be concluded that all question items are valid and reliable to be used as research instruments.

The researcher then explained the aims and objectives to the research respondents. Then, the researcher gave informed consent to the research respondent as a form of willingness to become a respondent. The researcher measured the self-awareness of hypertensive patients before being given the intervention. Furthermore, the researcher provides interventions in the form of hypertension education videos to respondents. The provision of educational videos was carried out 2 times, which were carried out once a week. Each session that

provides educational videos on hypertension lasts for 20 minutes. The first meeting was about hypertension, the signs and symptoms of hypertension and the process of hypertension. The second meeting was about how to control hypertension including 'PATUH'. The researcher then provided educational videos to the research respondents so that the respondents could repeat the material that had been delivered. Researchers remind respondents daily through WhatsApp groups to play back hypertension education videos with the help of their families. Then, the research measured the self-awareness of hypertension patients again after being given the intervention. This measurement was taken at the end of week 3.

After all of them were obtained, the researcher then described the data in the form of univariate analysis, which contained the demographic frequency data of the respondents. Then, a bivariate analysis test using the Wilcoxon Test will be conducted to analyze the self-awareness score of hypertensive patients before and after the intervention. This research has been declared ethically sound with the number 132/KEPK-UNHASA/VI/2024 at the Ethics Commission of Hafshawaty Zainul Hasan University.

Results and Discussion

The results of the research that has been carried out show data such as:

Table 1. Characteristics of Respondents (N=43)

Respondent Data	n	%
Gender		
Female	31	72
Male	12	28
Age		
26-35 y.o (early adulthood)	6	14
36-45 y.o (late adulthood)	13	30
46-55 y.o (early elderly)	20	47
56-65 y.o (late elderly)	4	9
over 66 y.o (seniors)	0	0
Occupation		
Unemployed	13	30
Farmer	16	37
Civil Servant	2	5
Public Employee	7	16
Self-employed	5	12
Education		
No School	7	16
Elementary	25	59
Junior High	7	16
High School	4	9
Income		
< 500.000	6	14
500.000-1000.000	13	30
1000.000-1.500.000	20	47
> 1.500.000	4	9

Based on Table 1, it was found that most of the respondents were female as many as 31 people (72%), aged 46-55 years (early elderly) as many as 20 people (47%), had occupations as farmers as many as 16 people

(37%), had elementary school education as many as 25 people (59%), and had an income of 1,000,000-1,500,000 as many as 20 people (47%).

Table 2. Self-awareness of Hypertension Patients Before Being Given Hypertension Educational Video (N=43)

Self-Awareness of Hypertension Patients	Before (n)	%	After (n)	%
Low	27	63	5	12
Medium	12	28	11	26
High	4	9	27	62

Based on Table 2, it was found that 27 people (63%) had a low level of self-awareness before being given a hypertension education video. In addition, other research respondents had a moderate level of self-awareness as many as 12 people (28%) and a high level of 4 people

(9%). Besides that, most of the research respondents, as many as 27 people (62%), had a high level of self-awareness after being given a hypertension education video. In addition, 11 people (26%) had a moderate level of self-awareness and a low level of 5 people (12%).

Table 3. Effect of Hypertension Educational Video on Self-Awareness of Patients with Hypertension (N=43)

Cross Tabulation		Self Awareness (Post Test)		
		Low	Medium	High
Self Awareness (Pre Test)	Low	5	7	15
	Medium	0	4	8
	High	0	0	4

ρ value 0.001

Based on the cross-tabulation results in Table 3, it was found that most of the research respondents had a low level of self-awareness before being given a hypertension education video and increased to a high level of self-awareness after being given a hypertension education video by as many as 15 people. Meanwhile, according to the results of the Wilcoxon test, the ρ value is 0.001, so it can be concluded that there is an effect of the application of hypertension education videos on the self-awareness of hypertensive patients.

Self-Awareness of Patients with Hypertension Before Being Given A Hypertension Education Video

Based on the results of this study, it was found that most of the research respondents experienced a low level of self-awareness as many as 27 people (63%). Most research respondents said they like eating salty, fried, and fast food. Respondents also said that most of the reasons for their blood pressure to rise were due to thinking about their children and their health conditions, which made it easy for their blood pressure to rise and challenging to go down. Respondents

said that during relapses, their heads often felt dizzy, twisted, blurred vision, and the back of their neck felt painful and heavy, making it difficult for them to sleep. Respondents also said that they rarely take hypertension medication and only take medicine when their blood pressure is high. If their blood pressure remains high, they go to a health facility for examination. This condition makes research respondents prone to relapse of hypertension due to low self-awareness regarding hypertension control.

Hypertension can occur due to several factors, such as excessive salt consumption. Salt contains sodium compounds, which the body will generally excrete through urine in the same amount as consumed. Individuals who consume excess sodium will be absorbed by the blood vessels, which can cause fluid accumulation in the body. This happens because sodium attracts intracellular fluid to leave the cell so that the volume of extracellular fluid increases and fluid is retained in the body. As a result, blood pressure rises, and the excess sodium content in the body stimulates the production of natriuretic hormone. As a result, the natriuretic hormone will stimulate the kidneys

to secrete sodium. As a result, the amount of sodium in the blood will increase, causing blood pressure to increase (Rust & Ekmekcioglu, 2017).

In addition, other factors lead to hypertension, such as stress. Individuals who experience stress can trigger the production of the hormones adrenaline and cortisol. When these two hormones are produced, they can increase the sympathetic nerves' activity, causing the heart to beat faster than before. As a result, the blood vessels become narrower, so the blood volume circulated throughout the body increases. The effect causes an increase in blood pressure (Septiyawati *et al.*, 2021).

Hypertension is a condition where arterial blood pressure increases due to an increase in the heart pumping blood, causing the blood volume to increase. This situation causes arterial blood vessels to lose their flexibility and become stiff. As a result, the arteries cannot expand and contract elastically when the heart pumps blood, resulting in a narrower blood flow. When there is narrowing and stiffness in the blood vessels, the heart's workload gets heavier, so the heart compensates by increasing the heart pump. As a result, blood pressure increases significantly in the circulatory system (Ma & Chen, 2022).

Therefore, self-awareness about hypertension is the most important aspect of controlling blood pressure. If an individual has low self-awareness, the individual is likely to experience a relapse of hypertension due to not being able to assess and understand hypertension. As a result, individuals cannot take care of their health. They may not understand the importance of regulating the type of food consumed, taking medicines regularly, and conducting routine health checks.

Self-Awareness of Patients with Hypertension After Being Given A Hypertension Education Video

Based on the study's results, it was found that most of the research respondents' self-awareness experienced a high increase, as many as 27 people (62%). This is because after being given a hypertension education video, most of the research respondents said that they realized the importance of controlling hypertension by reducing eating foods that

contain much salt. In addition, respondents realized that managing mood and regulating emotions could be the cause of high blood pressure. Respondents also realized the importance of conducting health checks by visiting the posyandu regularly every month and taking regular medicines on time.

Based on the explanation of the case above, educational videos can increase one's self-awareness. Educational video media involves elements of images, symbols, and words equipped with audio, visual, and animation to become an attractive health education media. Educational video media can optimize the senses of sight and hearing to capture and digest all information to the maximum. In addition, educational videos can also be played repeatedly to make it easier for individuals to receive and apply all information about hypertension in everyday life. This condition makes individuals better understand the condition of their disease so that it can increase individual self-awareness (Widiati & Rahmawati, 2022).

Following the explanation above, it is clear that self-awareness is one of the internal factors and main indicators that can determine the quality of a person's health. Self-awareness is a form of individual ability to carry out self-management, including thoughts, behaviour, and actions regarding the disease they experience to maintain good health. Individuals who have high self-awareness will try to control their illness by following their medication, changing their daily food diet and adopting a healthy lifestyle. Meanwhile, individuals who have low self-awareness tend to ignore their health conditions, so they are at high risk of experiencing complications quickly (Mbouemboue & Ngoufack, 2019).

The Effect of The Application of Hypertension Educational Videos on The Self-Awareness of Hypertensive Patients

Based on the study's results, the p value is 0.001, indicating that the application of hypertension education videos affects the self-awareness of hypertensive patients.

Hypertension educational videos are one effective method of improving individual cognition about hypertension by providing stimulus in the form of moving images,

animations, and sounds that provide messages and information that can affect a person's self-awareness. In addition, educational videos make it easier for individuals to apply all hypertension information to change their thinking patterns and become more optimistic. This could educate individuals to be more aware of their health and make the right decisions to control hypertension (Harmilah *et al.*, 2021).

Self-awareness regarding hypertension control is a significant determining aspect that determines the quality of one's health. Individuals who have high self-awareness about hypertension tend to be able to implement good self-protection and management efforts such as having the initiative to carry out early detection through regular blood pressure checks at health facilities, making lifestyle changes such as managing and paying attention to the types of food consumed, taking antihypertensive drugs on time and regularly and not delaying when complaints arise to visit the nearest health facility. Self-awareness is a very important factor because it can control blood pressure. Through self-awareness, individuals will not delay treatment and detection so that they can take appropriate actions to minimize the occurrence of adverse complications and even death due to cardiovascular disease, one of which is hypertension (Cisse *et al.*, 2021).

Conclusion

Based on the research data, it was found that there was an effect of the application of hypertension educational videos on the self-awareness of hypertensive patients. Following these results, it is hoped that people with hypertension can implement and apply the information that has been presented through hypertension educational videos in their daily lives so that they can manage and control blood pressure to minimize the occurrence of complications due to hypertension.

Limitations of the study

This study has limitations, such as respondents needing support from external factors, such as family as the closest party in maintaining the health of hypertension

sufferers, in order to be able to maintain self-awareness regarding hypertension.

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Conflict of Interest

The authors declare no potential conflicts of interest in this study.

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