Behaviour Changes In Hypertension Elderly Through Multimedia Learning Models

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Abstract: Hypertension is a health problem with a high prevalence. Global hypertension cases are estimated at 22% of the total world population. Around 2/3 of people with hypertension come from middle to lower economic countries (Ministry of Health, 2019). In Indonesia, in 2021 it is estimated that the prevalence rate of hypertension in Indonesia is 31.7%, which means that almost 1 out of 3 people aged 18 years and over suffers from hypertension (Ministry of Health, 2021). Someone will be more susceptible to hypertension if there is a family member with a history of hypertension. In addition, someone over 65 years of age and having congenital diseases such as diabetes and kidney disorders is also at a higher risk of developing hypertension. Risk factors for hypertension that we can control include unhealthy eating patterns, a sedentary lifestyle, consumption of cigarettes and alcohol, and obesity. (WHO, 2019). This study aims to determine the effect of the multimedia learning model on changes in the behaviour of elderly people with hypertension in disease control. The population of the study were all elderly hypertension with a sampling strategy using purposive sampling with a sample size of 30 people. The research design used is descriptive analytic with a quasi- experimental approach. The data analysis test used was univariate, bivariate with paired t-test for the effect of the multimedia learning model intervention on changes in the behaviour of the elderly in controlling hypertension. The results showed that there were significant differences in knowledge, attitudes and behaviour about how to control elderly hypertension between the intervention group and the control group after the intervention (p value: 0.000). Conclusion: the multimedia learning model has a significant effect on the behaviour of hypertensive elderly people in controlling disease.

Keywords: Multimedia learning model, Hypertension control behaviour, Elderly

1. Background

Global hypertension cases are estimated at 22% of the total world population. Around 2/3 of people with hypertension come from middle to lower economic countries (Ministry of Health, 2019). In Indonesia, in 2021 it is estimated that the prevalence rate of hypertension in Indonesia is 31.7%, which means that almost 1 out of 3 people aged 18 years and over suffers from hypertension (Ministry of Health, 2021). A person is more susceptible to hypertension if there is a family member with a history of hypertension. In addition, someone over 65 years old and having congenital diseases such as diabetes and kidney disorders is also at a higher risk of

developing hypertension. Risk factors for hypertension that we can control include unhealthy eating patterns, a sedentary lifestyle, consumption of cigarettes and alcohol, and obesity.

The high prevalence of hypertension in the elderly above is due to a lack of information about the risk factors for hypertension in the elderly and their prevention. Khomarun's research (2013) shows that hypertensive patients have a bad attitude in carrying out sports activities and a hypertensive diet, this is caused by the knowledge factor of hypertensive patients who do not understand the prevention factors. The same thing was conveyed in Rodiyyah's research (2020), that there is a relationship between the level of knowledge of hypertensive patients and controlled blood pressure. The results of the 2018 Riskesdas showed that the high rate of hypertension was also caused by a lack of public knowledge to control its recurrence.

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To increase knowledge by providing education and health education using various methods. This statement is in accordance with research conducted by Gustina (2016) concerning the effect of education on increasing knowledge and reducing blood pressure. This statement is also in accordance with health education conducted by Utami (2021) regarding the effect of health education using animated videos on attitudes in adults. Health education is carried out using various methods, but information delivery activities to the elderly need to be carried out in a simple, attractive way so that it is easy to understand.

2. Method

The research carried out was a quasi-experimental with a Pretest-Posttest Control Group Design. The intervention was carried out by providing counseling through the application of a multimedia learning model using animated videos and leaflets on hypertension control in the elderly with hypertension for 2 months. The samples taken were 60 elderly people divided into an intervention group of 30 people and a control group of 30 people. The research was carried out in the working area of the Cipayung District Health Center. The statistical analysis used to determine the treatment effect is the two-mean difference test.

3. Result

In accordance with the research objective, namely to determine the effect of the multimedia learning model on changes in the behavior of the elderly in controlling hypertension. The following results are obtained:

Table 1 Description of samples

Variable	Intervention Group		Control Group		Total	
	N	%	N	%	N	%
Sex						
- Male	12	40	10	33.3	22	36.6
- Fenale	18	60	20	66.7	38	63.4
Education						
- Lower Education	22	73.3	27	90	49	81.6
- Higher Education	8	26.7	3	10	11	18.4
Age						
- Age < 61 years	15	50	7	23.3	22	63.3
- Age 61 years above	15	50	23	76.7	38	36.7

The results analysis, it was concluded that the elderly who were the respondents in this study were mostly female respondents. According to the American College of Cardiology, women who haven't gone through menopause have a lower risk than men of the same age group. However, after the age of 50, women become more at risk of developing hypertension than men. This is because, at this age generally women have experienced menopause. Menopause is what turns out to make women more susceptible to hypertension. Kusumawaty's research (2016) showed that there was a significant relationship between gender and the incidence of hypertension, women who had menopause were at higher risk than men in the same age group. Decreasing estrogen levels at menopause is the main cause of hypertension in women. The hormone estrogen apparently has a vascular protective effect in women who are still experiencing premenopause. Estrogen can increase the production of antioxidants, thereby reducing stress and preventing inflammation in the body. Therefore, lower estrogen levels after menopause can reduce this function and increase the risk of hypertension.

In this study it was found that most of the elderly with hypertension came from the age group of 61 years and over. According to WHO, those aged 61 years and over are classified as elderly aged 60-74 years. The results of Novitaningtyas' research (2014) show that the older you are, the more susceptible you are to hypertension, this is due to changes in the walls of blood vessels which show that as you get older, they become less elastic. Elderly will experience aging symptoms of physical, psychological and intelligence conditions. Another article said that old age is vulnerable to many changes, both physically and psychologically and these changes will also have an impact on the daily routine activities of the elderly, one of which is the activity of the organs of the body such as brain performance. , memory and changes in intelligence (https://dosenpsikologi.com, 2017). In order to avoid frequent attacks of hypertension in the elderly, it is necessary to make efforts or reforms in learning methods that need to be carried out so that the elderly can easily understand the control or prevention of attacks in elderly hypertension. Another factor that can influence the ability to control hypertension is the age factor which we usually know as internal factors. This statement is supported by the results of Nurhidayati's research (2018) which shows that adults are more obedient to treatment than the elderly. This condition also indicates that there must be a fairly strong effort to control elderly hypertension so as to attract the desire of the elderly to be healthier by avoiding hypertension attacks.

In this study it was also known that most of the elderly with hypertension had a low educational background. According to Dr. Yuda Turana SpS at the 12th Scientific Meeting of the Indonesian Society of Hypertension conference in 2023, that level of education actually affects a person's risk of hypertension. The lower the level of education, the more likely a person is to experience hypertension. This is known through a hypertension data involving more than 71 thousand adults. About 43 percent of adult men who have not received school education are recorded as having hypertension. In women with the same educational background, cases of hypertension were found to reach 50.8 percent. Cases of hypertension in the group of adult males with the last education level in elementary school were found to be 40.9 percent. In women with the last elementary school level of education, cases of hypertension were found at 43.3 percent. On the other hand, cases of hypertension in the group of adult males with the last diploma education was 25.8 percent. Cases of hypertension in the group of women with the same level of education is 15.1 percent. In the group of adult men with a bachelor's degree, 28.7 percent of cases of hypertension were found. In adult women with the same level of education, cases of hypertension were found at 16.6 percent. This finding is certainly a significant challenge. On the one hand, these data indicate that vascular problems are more common in groups with lower levels of education. On the other hand, a low level of education is associated with a lack of health-related knowledge and awareness. Low knowledge and awareness of hypertension sufferers has the risk of making hypertension conditions not well controlled. Hypertension that is not properly controlled can cause various complications later on (Republika, 2023).

Table 2 Analysis Of Knowledge, Attitudes And Behavior In Controlling Hypertension Before And After The Multimedia Learning Intervention

Variable	Group	Mean	SD	95% CI	T	P value
Knowledge score	Intervention		1.117	-1.584 - -0.750	-5.722	**0.000**
	Before	18.83				
	After	20.00				
	Difference	-1.167				
	Control		1.373	-0.179 – 0.846	1.330	**0.194**
	Before	18.10				
	After	17.77				
	Difference	0.333				
Attitude score	Intervention		1.234	-1.627 - -0.706	-5.178	**0.000**
	Before	18.23				
	After	19.40				
	Difference	-1.167				
	Control		1.995	-0.212 – 1.278	1.464	**0.154**
	Before	16.70				
	After	16.17				
	Difference	0.533				
Behavior score	Intervention		1.119	-1.718 - -0.882		**0.000**
	Before	18.20				
	After	19.50				

Difference	-1.300				
Control		1.455	-0.310 – 0.777	0.879	**0.387**
Before	16.40				
After	16.17				
Difference	0.233				

The results of the analysis showed that there was a significant difference in knowledge of the hypertension control knowledge score in the intervention group before and after the multimedia learning intervention (p value = 0.000) and the difference in the average value of increasing knowledge scores in the intervention group was greater (difference value = 1.167) whereas in the control group the average difference in score is 0.333. These results are supported by existing theories about the learning process that increases the knowledge of the elderly in learning will be influenced by the use of appropriate methods or strategies (Notoadmodjo, 2010). The right method or strategy in this case is the use of multimedia, namely video animation which is a combination of sound, pictures and words, this attracts the elderly to see and listen to it in a relaxed manner. This is in accordance with the results of Fajarina's research (2019), namely increasing the knowledge of the elderly about osteoporosis by using audio-visual multimedia with a significance value of 0.001 (P <0.05). These results believe that the use of multimedia learning methods in the elderly is very helpful for the process of understanding the learning of the elderly. This statement is reinforced by the results of Rani's research (2021) which proves that there is a significant effect of counseling using multimedia on respondents' knowledge about hypertension with a value of p=0.000 (p<0.05). The results of this study are supported by research by Masruroh (2019) which proves that health education using animated media can increase knowledge because it is more interesting and more effective with a value of p=0.000 (p<0.05).

The results of the paired t test showed that the results of the analysis showed that there were significant differences in the attitude of the elderly towards hypertension control with the attitude scores of the elderly in controlling hypertension in the intervention group before and after the multimedia learning intervention (p value = 0.000) and the difference in the average value of increasing the attitude score of the elderly in the intervention group is greater (difference = 1.167) while in the control group the average difference in score is 0.533. The results of Susilo's research (2015) which prove that Audio Visual is very helpful in increasing knowledge by 98.90% with an interesting way of learning and can be used whenever they need it, so that attitudes and behavior towards heart health are manifested properly. The results of other studies prove that health promotion regarding the use of health services by using multimedia can increase positive attitudes as evidenced by the increase in elderly visits to health services (Astuti, 2019).

The results of data analysis also showed that there were significant differences in the behavior of the elderly towards controlling hypertension with scores of elderly attitudes in controlling hypertension in the intervention group before and after the multimedia learning intervention (p value = 0.000) and the difference in the average value of increasing the score of elderly behavior in the intervention group was more large (difference value = 1.300) while in the control group the average difference in score is 0.233. The results of Susanto's research (2014) stated that there was an effect of using AVA in health education on the ability to practice postoperatively in the treatment and control groups. This is based on the results of the analysis using an independent sample T-test, the results obtained p = 0.000. This is in line with the results of Novianti's research (2018) regarding the factors that influence the behavior of the elderly which concludes that behavior will change if they have sufficient knowledge, have strong family support as well as high motivation and a positive attitude. In addition, the results of Basniati's research (2020) on a group of young women at the Ummul Mukminin Makassar Islamic Boarding School concluded that there was an effect of multimedia video learning on changes in knowledge, attitudes and behavior of menstrual hygiene in young women.

Acknowledgements

Based on the results of this study, it was found that there were differences in knowledge, attitudes and behavior of the elderly after giving interventions in the form of health education using multimedia learning models about controlling hypertension in the elderly. Besides that, it can also be concluded that the multimedia learning model on hypertension control has as significant influence in increasing the knowledge, attitudes and behavior of elderly people with hypertension. With the results of this study, it is hoped that in the future hypertension services in the community, especially the elderly with hypertension, will be able to control their disease by providing health education through a multimedia learning model.

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