

INCREASING ELDERLY KNOWLEDGE ABOUT HYPERTENSION CRISIS WITH AUDIO-VISUAL MEDIA

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ABSTRACT

Hypertensive crisis is the most common problem in the elderly resulting from uncontrolled hypertension. A common problem that is a factor causing a hypertensive crisis is ignorance regarding how to treat and prevent the disease, which increases the risk of a hypertensive crisis, so a means of increasing knowledge is needed, namely audio-visual media. The aim of this activity is to increase the elderly's knowledge about hypertensive crises using audio-visual media. The activity was held on December 21, 2023, regarding audio-visual media education about preventing hypertensive crises in the elderly, located at the Mojogedang Mental Revolution House. There were 42 elderly people who took part in the activity in the elderly posyandu area. The pretest results showed that 15 people (35.7%) dominated the elderly's knowledge as poor. The posttest results showed that knowledge of the elderly was dominated by 18 people (42.9%). The marginal homogeneity test obtained a p value of 0.000, which concluded that audio-visual media is an alternative means of increasing the knowledge of the elderly. In conclusion, community service using audio-visual media methods regarding the prevention of hypertensive crises in the elderly significantly helps in increasing the knowledge of the elderly.

Keywords: Audio-visual, Elderly, Health Education, Hypertension Crisis

1. INTRODUCTION

The most prevalent condition affecting the elderly is hypertension, which is also frequently linked to significant risk factors for cardiovascular disease, including heart failure, atrial fibrillation, stroke, and, worst of all, the development of a hypertensive crisis if hypertension is not managed (Alshami et al., 2018; Guasti et al., 2022). One of the main consequences of hypertension is hypertensive crisis, which necessitates an emergency hospital admission. A sharp spike in blood pressure, up to and including 180/120 mmHg, is the hallmark of hypertensive crisis (Pierin et al., 2019).

Approximately 1%-3% of hypertension individuals worldwide are said to encounter a hypertensive crisis. (Kotruchin et al., 2022). A study found that 46,646 people (23%) suffered from hypertension, and among this group, 2,638 people (5.7%) experienced a hypertensive crisis (Calderon-Ocon et al., 2024). The frequency of hypertensive crisis varies throughout Asia. However, in clinical practice, hypertensive episodes have the potential to be lethal despite the relatively modest number of patients. (Kotruchin et al., 2022).

According to research by Chootong et al. (2023) 17.33% of 3329 hypertension individuals had a hypertensive crisis. The majority of patients (63.6%) had a mean age of 66 years and were female. Acute heart failure (20.8%), hemorrhagic stroke (25%), and ischemic stroke (33.3%) are the most frequent end organ damage in hypertensive situations.

A hypertensive crisis can be brought on by a number of different ways. Most people who have been diagnosed with persistent hypertension experience hypertensive crises. Additionally, if antihypertensive medicine is not taken as prescribed, blood pressure may rise quickly above the body's natural ability to regulate itself (Alley WD & Schick, 2022). Apart from that, ignorance regarding how to treat and prevent disease is the most common problem that increases the risk of hypertensive crisis (Calderon-Ocon et al., 2024).

A number of illnesses, including heart failure, cerebral blood vessel injury, renal failure, coronary heart disease, and heart failure, can lead to or worsen a hypertensive crisis. If treatment is not received, this disease has a strong correlation with death. In order to prevent the disease from becoming fatal, nurses should be concerned about complications of hypertension as they are an indication that the condition cannot be well treated (Talle et al., 2022).

The elderly have their own problems for health workers in providing health education. This is because the elderly have several limitations, so innovative and creative health education is needed so that the elderly can easily digest the information that has been provided. Research by O. Brien et al. (2020) found that audio-visual was very effective for improving multisensory processing performance in the elderly. Mustika et al. (2021) research found that it is easier for elderly people to understand information using audio-visual media so that it can be applied to prevent hypertensive crises. The aim of this activity is to increase the elderly's knowledge about hypertensive crises using audio-visual media.

2. PROBLEMS AND QUESTIONS

A hypertensive crisis may occur in elderly individuals with a history of uncontrolled hypertension. This ties in with the most prevalent issue, which is the elderly's ignorance of the causes and remedies for hypertensive crises that they can encounter. In order to make the material presented to the elderly easier for them to understand, unique and novel approaches to audio-visual media education are needed.

The formulation of the question for this community service is "Can audio-visual media education about preventing hypertensive crises in the elderly increase the knowledge of elderly people about preventing hypertensive crises?"

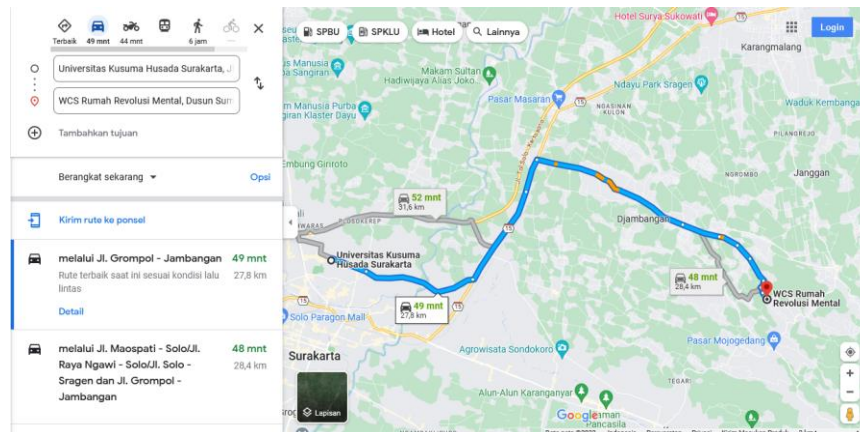


Figure 1. Map of activity locations

3. LITERATURE REVIEW

A blood pressure spike that surpasses 180/110 mmHg is known as a hypertensive crisis, and it raises the risk of mortality and other organ failures. (Shao et al., 2018). Patients with hypertensive crises can be at risk of experiencing organ failure such as heart failure, kidney failure, and even stroke (Alshami et al., 2018; Guasti et al., 2022). An immediate worsening of organ function in the patient necessitates a drastic reduction in blood pressure. In all other situations, a gradual reduction in blood pressure is necessary to avoid brain dysfunction brought on by inadequate perfusion (Alley WD & Schick, 2022).

A hypertensive crisis can be brought on by a variety of triggers. The majority of hypertensive crises happen to those who have a history of chronic hypertension. Even when the elderly have never had chronic hypertension before, a rise in blood pressure above the body's tolerance threshold may nonetheless play a role in a hypertensive crisis. However, if they can maintain a healthy lifestyle, older individuals with long-term hypertension can tolerate extremely high blood pressure without experiencing acute organ damage (Paini et al., 2018; Watson et al., 2018).

High mechanical stress on the arterial wall, which is likely to cause endothelial damage and a pro-inflammatory response, is the pathophysiology that leads to organ failure. As a result, there is hypoperfusion in the organ tissue due to increased vascular permeability, platelet and coagulation cascade activation, and fibrin clot deposition (Alley WD & Schick, 2022). Acute hypertension causes abrupt spikes in blood pressure that are followed by organ damage. This condition primarily affects those who already have high blood pressure and are at risk of having a hypertensive crisis (Van Den Born et al., 2019). Major risk factors for blood pressure increases include stress, increased salt intake, and non-adherence to antihypertensive drugs, however the exact causes of these episodes are also unclear. A hypertensive crisis is primarily brought on by three processes: stimulation of the renin-angiotensin-aldosterone system, endothelial dysfunction, and failure of vascular autoregulation (Fragoulis et al., 2022).

The most common problem associated with hypertensive crises is a lack of health education regarding the prevention of hypertensive crises. Health education can be provided using audio-visual media, which has proven effective in making it easier for the elderly to understand information.

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Patients who are at risk of a hypertensive crisis are given audio-visual materials with the intention of making the process of learning more engaging and enjoyable. These materials can show movement, which facilitates observation, detail an object or process, and provide concrete meaning to abstract concepts.

4. METODE

On December 21, 2023, a community service project was completed at the WCS Mental Revolution House, involving audio-visual media instruction about preventing hypertensive crises among the elderly. 42 senior citizens actively participated in elderly posyandu activities as a total of participants in the activity.

The activity was carried out using audio-visual media, PowerPoint, and leaflets with material on preventing hypertensive crises in the elderly, which was then followed by question-and-answer activities. The question-and-answer activity was carried out to identify the knowledge of the elderly as well as evaluate whether the material presented could be understood by the elderly.

The steps taken in this activity consist of several stages:

a. Proposals and licensing processes

Community service is preceded by submitting a proposal to the LPPM of Kusuma Husada University. After it is approved, the team makes a permit letter, which will be submitted to the management of the Mojogedang WCS and elderly posyandu.

b. Coordination

Coordination was carried out two weeks before the activity with the Mojogedang WCS management and related parties at the elderly posyandu to discuss implementation strategies, activity objectives, activity time, and the preparation of participants who would take part in the activity.

c. Implementation of community service

On December 21, 2023, a community service project involving pre- and post-health education utilising audio-visual techniques to avoid hypertensive crises in the elderly was completed. The team took the seniors' blood pressure before beginning the exercise, determined what they knew beforehand (pre), used the audio-visual method to deliver counseling, and then assessed the seniors' knowledge of how to prevent hypertensive crises (post).

d. Monitoring and evaluation

This process is carried out to assess the knowledge of the elderly after being given counseling actions by giving an elderly knowledge questionnaire, where the categories include: 1) 76-100% correct answer: good; 2) 56-75% correct answer: quite good; 3) 40-55% correct answers: passably; 4) <40% correct answer: not good.

5. RESULTS AND DISCUSSION

The 42 elderly participated in community service projects, twenty-seven (64.3%) were female. The results are consistent with Prastiwi et al. (2023), who found that women are far more likely than men to develop hypertension. According to Kim et al. (2022), women are more likely than males to have hypertension in their senior years following menopause. This is due to changes in the estrogen ratio, along with changes in other hypertension risk factors. Menopause is accompanied by an estradiol deficit and a decrease in the estrogen ratio, resulting in disruption of the renin-angiotensin system, endothelial dysfunction, and an increase in BMI. This causes an increase in angiotensin II levels, which can increase renal vasoconstriction, causing hypertension. In general, estrogen receptor B plays an important role in blood pressure regulation (Santosa et al., 2020).

The pretest results showed that 5 people (11.9%) had not good knowledge levels, 15 people (35.7%) had a passable level of knowledge, 10 people (23.8%) had a quite good level of knowledge, and 12 people (28.6%) had good knowledge. After the posttest, it was found that the level of knowledge was not good for 2 people (4.8%), passably for 5 people (11.9%), quite good for 18 people (42.9%), and good for 17 people (40.5%). The examination of the findings of the Marginal Homogeneity Test revealed a p value of 0.000, indicating that elderly people's knowledge is impacted by education about managing their hypertension.

The outcomes of community service are consistent with the findings of Prastiwi et al. (2023), who found that health education is highly successful in raising elderly people's awareness of hypertension. According to research by Andrew et al. (2022), knowledge interventions have a beneficial effect on hypertension management and compliance. According to studies by Chloranyta et al. (2023), audio-visual media has an impact on patients' understanding of self-management in those with hypertension. The self management of respondents during the pre-test was in the fair category, with as many as 28 respondents (93.3%), good as many as 2 respondents (6.7%). Post-test results increased to the good category with as many as 26 respondents (86.7%) and the fair category with as many as 4 respondents (13.3%). In Prastiwi et al. (2023) research, there was an influence of audio-visuals on the knowledge of the elderly (p value 0.011) in preventing hypertensive crises, with the median value increasing, where the pre-intervention value was 6 to 7.

Since hypertension doesn't present any symptoms at first and instead silently damages the body's organs, it is known as the "silent killer." As a result, it is crucial to diagnose and treat hypertensive patients as soon as possible. These patients are frequently recognized and treated much later than they should be (Fatima & Mahmood, 2021). In the elderly, not receiving information about hypertension will tend to increase the risk of uncontrolled hypertension, and if this is ignored, it will develop into a hypertensive crisis, which can potentially lead to organ failure (Alshami et al., 2018; Hari et al., 2021).

Health education can increase knowledge of hypertension management in uncontrolled cases. In addition, health service providers should consider providing education to people with uncontrolled hypertension to prevent hypertensive crises (Kurnia et al., 2020). In the elderly, because there has been some decline in cognitive function, health education must be carried

out in an innovative way so that information can be conveyed well (Prastiwi *et al.*, 2023)

Audio-visual is an interesting and innovative education medium because it stimulates more senses, which can directly increase knowledge. Knowledge is the result of reason, which is greatly influenced by the intensity of attention and perception of objects, which can be obtained using audio-visual media (Mansyah & Rahmawati, 2021). Audio-visuals can stimulate someone to stay concentrated with media that can be heard and seen. This aims to make it easier for elderly people to process and receive information provided by innovative media. Audio-visual health education influences the elderly's knowledge and understanding of how to prevent hypertensive crises (Prastiwi *et al.*, 2023).



Figure 2. Prevention of Hypertensive Crisis in the Elderly

6. CONCLUSION

The elderly's awareness of preventing hypertensive crises is greatly increased by community service that use audio-visual media technologies. It is anticipated that individuals would be able to lead healthy lifestyles in the future to prevent hypertensive crises. Elderly people who adopt a healthy lifestyle have the potential to reduce the risk of a hypertensive crisis due to their physical fitness and ability to control existing risk factors. Then, after this activity, participants were able to utilize non-pharmacological and pharmacological therapy to control hypertension because this is one of the highest risks of causing a hypertensive crisis. The suggested course of action for the following activity is to employ a demonstration technique that involves offering non-pharmacological therapy aimed at reducing blood pressure as a first step toward preventing hypertensive crises in senior citizens.

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