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Effect Of Health Education Model BASNEF On Knowledge And Compliance With Hypertension Diet In Elderly With Hypertension

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ABSTRACT
Hypertension is a disease that mostly affects the elderly, this is due to unhealthy lifestyle changes, easy fast food, and excessive salt and fat consumption. Poor knowledge and adherence to the hypertension diet make the elderly not follow the hypertension diet properly. This study aimed to analyze the effect of the BASNEF model of health education on dietary knowledge and adherence in elderly people with hypertension. This study used Quasi-experimental one group pre-test and post-test design. The study population was elderly with hypertension taken by purposive sampling method, a total of 40 people with the criteria of being able to read, carry out activities independently, and live with family. The instrument used to measure variables is a questionnaire and data were analyzed using the Wilcoxon test. The average value obtained for knowledge of the hypertension diet increased by 14.78 and adherence to the hypertension diet also experienced an increase in the average value of 44.53. The results of the Wilcoxon test showed that there was an effect of the BASNEF model of health education on knowledge and adherence to the hypertension diet in elderly people with hypertension which was significant with $p<0.05$. The BASNEF method of health education can be an alternative to increasing knowledge and adherence to hypertension among elderly people in the community.

KEYWORDS
BASNEF model education, knowledge, compliance, elderly

1. BACKGROUND

Hypertension is considered one of the most challenging public health problems worldwide. Adherence to the recommended diet is key to reducing uncontrolled hypertension and hypertension. Adherence to recommended diet is the agreement between an individual's medication-related behaviors and following nutritional and lifestyle changes recommended by health care providers. Although dietary modification is strongly recommended for the prevention and treatment of hypertension, little is known about the model as it relates to adherence to dietary guidelines (Khorasanchi et al., 2022).

The Central Bureau of Statistics released data on the number of elderly based on the results of the 2016 Inter-Census Population Survey, an estimated number of elderly (age 60 years and over) in Indonesia as many as 22,630,882 people. This figure is expected to increase to 31,320,066 in 2022 (Infodatin, 2022). When humans reach the old age phase, they will naturally experience the aging process. Health problems that are often suffered by the elderly are in the cardiovascular system, one of which is hypertension. The prevalence of hypertension in Malang City is 26,627 people, of which there are 3,853 cases in males aged ≥ 18 years, and 22,774 cases in females aged ≥ 18 years (Dinkes Kota Malang, 2021). Based on the prevalence of elderly hypertension in Indonesia, it is 45.9% for ages 55-64 years, 57.6% for ages 65-74 years and 63.8% for ages >75 years. The prevalence of hypertension in Indonesia based on blood pressure measurements at the age of ≥18 years is 25.8% (Infodatin, 2022).

Hypertension is a medical problem that often occurs in the elderly. Factors that can be controlled are lifestyle, including physical activity, diet, rest habits and smoking history. Hypertension is a disease that mostly affects the elderly, this is due to changes in unhealthy lifestyles, it is not difficult to get fast food which causes a lack of intake of fiber and vegetables, and consuming excess sodium and fat can increase the occurrence of hypertension (Vijna, Mishra, & Pati, 2022). Failure to treat hypertension is caused by several things, namely non-compliance with taking hypertension medication, adopting an unhealthy lifestyle, such as smoking, drinking alcohol, not exercising, and the level of adherence to a hypertension diet (Shim et al, 2020).

Dietary compliance is important to do in people with hypertension. Food consumed directly and indirectly can affect blood pressure, such as fat and sodium are related to the emergence of hypertension. Doing a regular hypertension diet can reduce hypertension by not consuming excess salt, reducing fat consumption, consuming foods that contain fiber, and carrying out activities (Azandjeme et al, 2021). The results of Agrina's research (2011) showed that (56.7%) of the elderly did not comply with the hypertension diet and El Ati et al (2021) showed the results of 21 respondents (29.6%) in the good category in compliance with the hypertension diet, while 50 respondents (70 .4%) less adherent in fulfilling the hypertension diet. Lifestyle

modifications are recommended treatments for hypertension. However, prevention of high blood pressure and concomitant cardiovascular disease, changes in adherence therapies that require a deeper understanding of knowledge-based awareness, and patients' behavioral adaptation are also recommended. Hence, it is necessary to explore the knowledge, attitudes, and behaviors or practices of hypertensive patients who are at an increased risk of failing to reach their targeted blood pressure control levels, particularly those involved in community-based care (Chotisiri et al., 2016).

Wolde et al (2022) said that public knowledge about hypertension is in a low category, as evidenced by the fact that more people consume fast food which is usually low in fiber, high in sugar, fat and high in salt, causing a high risk of developing hypertension. One of the efforts to increase knowledge and adherence to the hypertension diet and improve the behavior of the hypertension diet is by providing health education using the BASNEF model (Abedini et al, 2020).

Beliefs, Attitude, Subjective Norms, Enabling Factors (BASNEF) is a simplified approach to understanding behavior. Implementing health education with the BASNEF model requires determining the community's perspective on this behavior, taking into account facilities, knowledge, and all supporting factors (Baghianimoghadam et al, 2010). This model has been applied in several studies, including the application of this model to educate the elderly with type 2 diabetes mellitus in increasing food intake and controlling blood sugar (Sharifirad et al, 2011).

In a preliminary study conducted at the elderly integrated service (Posyandu) Rampal Celaket sub-district Klojen, Malang City, several problems were found, including the low public perception of hypertension, there was no counseling about the hypertension diet, there were no food restrictions if taking the medication regularly. Based on the description above, the researcher is interested in conducting research on the Effect of the BASNEF Model Health Education on Knowledge and Dietary Compliance in the Elderly with Hypertension.

2. METHODS

This study used a quasi-experimental one group pre-test post-test design. The research sample was elderly people suffering from hypertension who were members of an integrated service program

(Posyandu) totaling 40 people who were taken by purposive sampling with the inclusion criteria of being able to read, be independent, and live with families in the Malang City area. The variables in this study are knowledge and compliance. The measurement of the knowledge variable uses an instrument developed by the researcher based on the BASNEF model counseling material, consisting of 20 question items with right and wrong choices. Adherence variables were measured using the Treatment Adherence Questionnaire for Patients with Hypertension (TAQPH), which has been adapted into Indonesian, consisting of 28 statement items consisting of medication, diet, stimulation, weight control, exercise, and stress relief (Garzón & Heredia, 2019). both instruments have been tested for validity and reliability and obtained valid and reliable results.

The intervention group was divided into 2 groups to intensify the learning process. The BASNEF model health education intervention was given in four interventions to groups for two months, once every two weeks. The first meeting increases knowledge, beliefs and attitudes, in this stage the respondent is given information about hypertension in general which makes the respondent more aware of hypertension. The second meeting taught the behavior of taking medication, exercise, diet, and stress control. The third meeting identified and increased the role of family caregivers in caring for family members. The fourth meeting identified and introduced supporting factors such as health services (Puskesmas), support groups (Pobindu), and religious support (Tahlilan). This meeting emphasized more what services are available and the benefits that can be obtained. The media used during the intervention were LCD projectors, module books, and blackboards. The learning methods used include presentations, discussions, games, quizzes, and home visits. The place for implementing health education is carried out in the Village Hall Building. The control group was only given leaflets as a source of information related to hypertension care and studied independently at home.

Data collection began with giving informed consent to the respondents as proof of their willingness to be involved in the research. Pre-intervention data was collected at the first meeting and post-intervention data were collected at the end of the eighth week. Data analysis used SPSS version 16 non-parametric Wilcoxon test

with a significance level of 5%. Ethical clearance gets approval from the ethics team of the Faculty of Medicine, University of Brawijaya No. 024/EC/KEPK/S1-PSIK/2022.

3. RESULTS

Table 1. Characteristics Characteristics of Respondents

Characteristics	Frequency	Percentage (%)
Gender		
Male	5	12,5
Female	35	87,5
Education		
No School	2	5
Elementary School	4	10
Junior High school	13	32,5
Senior High school	18	45
College	3	7,5

Respondent characteristic data shows that the female sex has the highest percentage, namely 87.5%. The education of the respondents was mostly junior high school graduates at 32.5% and 45% were senior high school graduates.

Table 2. Wilcoxon test analysis results

Variable	Group	Mean	Max-Min	p-value
Knowledge	Pre	7,43±1,430	8 (4-10)	0.000
	Post	14,78±3,355	14 (9-20)	
Compliance	Pre	33,33±2,859	33 (26-39)	0.000
	Post	44,53±7,974	41 (32-61)	

The mean value of knowledge before and after health education also increased from 7.43 to 14.78. The average compliance score also increased from 33.33 to 44.53. The results of the analysis of dietary knowledge using the Wilcoxon test obtained a p value of 0.000 (p <0.05), it was concluded that there was a significant effect after being given health education on the BASNEF model on knowledge of hypertension in the elderly with the results of the analysis of dietary adherence obtained a p value of 0.000 (p <0.05), so there was a significant effect after being given health education on the BASNEF model on adherence to a hypertensive diet in the elderly with hypertension.

4. DISCUSSION

Based on the results of the study, it was found that the average knowledge of hypertension elderly experienced a significant increase after being given an

intervention of the BASNEF Model for eight weeks. The BASNEF model of health education is delivered using lectures, discussion, question and answer methods, and easy-to-understand language to increase respondents' understanding. During the intervention, the respondents were also given a module book containing learning material in each session which could be studied at home after the learning process was used as a deepening. Repetition of material to the elderly is very important to improve memory and understanding (Oyewole et al, 2019). A study explains that providing health education using the BASNEF model is more influential than providing health education using only leaflets in increasing knowledge. (Abedini et al, 2020). Research by Maria et al (2023) showed that knowledge, behavioral beliefs, attitudes toward action, supporting factors, subjective norms, and practices in the intervention group were significantly higher than the control group. Media and learning methods in the elderly related to diet hypertension are very important to pay attention to values, perceptions, and culture in conveying information using simple and easy-to-understand language (Mbadhi et al, 2022). The discussion method based on the respondents' experience has an important role in increasing understanding of the hypertension diet and is expected to increase compliance (Amsalu et al, 2021).

The results showed an increase of 75% in the average value of compliance before and after the intervention. The BASNEF model of health education using audio-visual media effectively influences compliance behavior (Kim & Lee, 2019). The results of the study show that audio-visual stimulation provides better retention in receiving information (Weatherhead et al, 2021). Assistance during home visits also influences compliance behavior because psychologically it strengthens commitment and sincerity to apply what is learned (Ma et al, 2021). Support from family also has a significant influence on adherence (Chacko & Jeemon, 2020). Increasing the role of family caregivers through inherent supervision and guidance can increase efficacy and changes in compliance behavior (Boonyathee et al, 2021). Elderly people with hypertension who live with family members receive greater support than those who live alone (Sumarni et al, 2021). The BASNEF model of education in this study emphasizes the importance of family support, health service support, and social support. Hypertension sufferers need close contact with healthcare providers to control blood

pressure by increasing compliance (Kwan et al, 2013). Social support such as peer groups (Posbindu) provide a learning space with fellow hypertension sufferers by exchanging information regarding problems and ways to solve them, so that they can be used as a reference for other sufferers in improving the quality of life (Shim et al, 2020). This study has strengths in the aspect of the approach used which emphasizes increasing knowledge, increasing health values and beliefs, and assisting in changing health behavior. while the drawback is that it takes a long time to get results that can be seen and felt by the elderly, so it requires monitoring by involving family and health workers.

5. CONCLUSION

The BASNEF model of health education using a variety of media and methods provides optimal results for increasing knowledge and adherence to the hypertension diet in the elderly. Various health education models need to be developed because they have a long-term influence on changes in client behavior. Changes in behavior in the elderly are characterized by being able to avoid prohibited types of food, reducing salt and fat, and increasing consumption of vegetables and fruit. Research implications are expected to be used in the Prolanis program in primary public health services.

AUTHOR CONTRIBUTIONS

Substantial contributions to conception, data collection, data analysis, and writing: Setyoadi, Efris Kartika Sari, Intan Larasati. Drafting or revising the article critically for important intellectual content: Setyoadi.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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