

The Relationship of Knowledge and Eating Patterns with The Incident of Hypertension in Pre-Elderly

Febby Aysah¹, Hermita Bus Umar^{2*}, Eva Yuniritha³, Kasmiyetti⁴, Wiwi Sartika⁵

^{1,2,3,4}Padang Ministry of Health Polytechnic Department of Nutrition

⁵Padang Ministry of Health Polytechnic

Email: hermita1809@gmail.com

ABSTRACT

The incidence of hypertension is always increasing due to many factors. This study aims to determine the relationship between knowledge and diet with the incidence of hypertension in the elderly in Jorong Sikabu Hilir, Ulakan Tapakis District, Padang Pariaman Regency. This study used a cross-sectional design, the research sample was all pre-elderly people in Jorong Sikabu Hilir, Ulakan Tapakis District, Padang Pariaman Regency, totaling 42 people. Data collection uses the SQ-FFQ form and questionnaire. Data analysis using Chi Square with a confidence level of 95%. The results of the research found that 54.8% of respondents had hypertension, 52.4% had poor knowledge and 57.1% had poor eating patterns. Statistically there is a significant relationship ($p=0,032$) between knowledge and the incidence of hypertension, there is a significant relationship between diet ($p=0,035$) and the incidence of hypertension. It is hoped that the puskesmas will emphasize more on knowledge about the link between hypertension and cardiovascular disease and the community, especially the pre elderly population (45-54 years) will better maintain their diet and consume foods high in potassium and maintain an ideal body weight to prevent the occurrence of hypertension.

Keywords : Diet, Hypertension Incidence, Knowledge

INTRODUCTION

In the elderly there will be changes in the structure of organs in the body, as well as a lack of ability of the organ structure to replace and maintain normal function slowly so that it cannot withstand infection and repair damage to the organ structure that occurs. As age increases, these changes affect physical health which will ultimately affect disease susceptibility and susceptibility to degenerative diseases such as hypertension (Hanum & Lubis, 2017; Putra, 2019; Yuliana Salman et al., 2020). Hypertension is a condition where blood pressure increases more than normal or is often called high blood pressure. High blood pressure is an increase in systolic blood pressure of more than 140 mmHg and diastolic more than 90 mmHg (Merry Rut Patricia, 2020). Hypertension is one of the causes of cardiovascular disease which is a "silent killer". The prevalence of hypertension increases with age (Mahiroh et al., 2019).

Based on Riskesdas data, the prevalence of hypertension in Indonesia among pre-elderly people in 2018 shows a fairly high figure in the 45-54 year age group, amounting to 45.32% and in West Sumatra, in the 45-54 year age group, the prevalence of hypertension is 33.23%. In 2018, the prevalence of hypertension in Indonesia based on age ≥ 18 years was 34.1%. The prevalence of West Sumatra is below Indonesia, but the prevalence of hypertension in West Sumatra has increased, namely in 2013 the prevalence of hypertension was 22.6%, increasing to 25.1% in 2018. In Padang Pariaman Regency, the prevalence of hypertension in 2018 was

21.95%. Hypertension is the second highest disease in Padang Pariaman Regency according to BPS, in Ulakan Tapakis hypertension has increased, namely from 3,059 cases to 3,155 cases, in Jorong Sikabu Hilir there has been an increase in hypertension, namely in 2020 there were 55 people and in 2021 it increased to 57 people (Badan Pusat Statistik, 2018; Kementerian Kesehatan RI, 2018; kementrian kesehatan RI, 2013).

The increasing incidence of hypertension is caused by several factors, namely factors that cannot be changed such as age, gender and descendants. Modifiable factors include poor eating habits, obesity, smoking, excessive alcohol and caffeine consumption, and stress. Apart from these factors, a person with hypertension is influenced by several factors, namely lack of knowledge about hypertension (Yanita Nur Indah Sari, 2017)(Anshari, 2020). Knowledge is the result of a person's five senses or the fact that a person recognizes an object through his or her five senses (Notoadmodjo, 2012) .

In the elderly group, intelligence and the ability to accept or remember tend to decline. Lack of knowledge in the elderly causes bad eating habits, such as continuous consumption of salt and the habit of drinking coffee, which is a wrong habit but is still practiced (Firsia Sastra Putri, 2020). Lack of knowledge can affect treating and preventing high blood pressure. High blood pressure can be prevented by maintaining body weight, lowering cholesterol, reducing salt intake, eating high fiber, eating fruit and vegetables and living a healthy lifestyle (Firsia Sastra Putri, 2020). According to research on this topic, there is a link between knowledge about high blood pressure in the elderly and controlling blood pressure in the elderly, because if respondents have good knowledge they can control their blood pressure by exercising, maintaining body weight and managing their diet (Novita & Nasution, johani dewita, 2019). Diet is food intake, frequency and type of food which includes a balanced diet to maintain health, improve nutritional status and prevent and cure disease (Pramana, 2016). In people with hypertension, consuming foods rich in fat and sodium, as well as consuming foods that are low in potassium and fiber, can cause an increase in blood pressure (Hanifa et al., 2016). High blood pressure is caused by foods high in sodium and fast food. Sodium (Na) compounds have the property of binding a lot of water. The higher the sodium content, the greater the blood volume. Lack of potassium-rich foods or lack of fiber causes sodium retention and increases the risk of high blood pressure due to stress on the beat heart (Arissandi et al., 2019). Sodium consumption is significantly related to the incidence of hypertension: 86% of 43 respondents who frequently consume sodium foods have hypertension, while only 67.5% of 40 respondents who rarely consume sodium foods experience hypertension. Related studies show that the types of food that can trigger an increase in blood pressure are high in sodium and fat, as well as flavorings in food (Laura Ana Manik, 2020; Yuliana Salman et al., 2020) .

The first step in preventing hypertension is the factor that plays the most role in hypertension to avoid complications due to hypertension (Yuliana Salman et al., 2020). Factors

that cause high blood pressure can be avoided through a healthy lifestyle and balanced diet. A healthy lifestyle is closely related to the occurrence of hypertension. A healthy lifestyle can reduce the incidence of high blood pressure through good nutrition (Dhika & Syarif, 2017). The aim of this research is to determine the relationship between knowledge and diet and the incidence of hypertension in the elderly in Jorong Sikabu Hilir Ulakan Tapakis in 2022.

METHODS

The design used in this research is cross sectional. The population of this study was pre-elderly residents (45-54) years old in Jorong Sikabu Hilir, Ulakan Tapakis District, Padang Pariaman Regency with a sample size of 42 people who met the inclusion criteria. To obtain information from respondents, researchers used a data collection tool in the form of a knowledge questionnaire based on sources from previous researchers and eating patterns using the SQ-FFQ sheet, which consists of 4 parts, namely: respondent identity data, blood pressure, level of knowledge, and eating patterns. The first part consists of respondent identity data which includes age, gender, education and occupation. The second part is the respondent's blood pressure which is taken by measuring directly when the respondent is met using an Omron brand tensimeter, in the third part it is a knowledge level questionnaire with the choice of correct answer (score 1) and wrong answer (score 0), then the scores obtained are classified into 2, namely good knowledge if the total score is $> 50\%$, and poor knowledge if the total score is $\leq 50\%$. (Budiman, 2013) Meanwhile, the fourth part consists of eating patterns using the SQ-FFQ sheet with the choice of correct answers (score 1) and wrong answers (score 0), then the score obtained is classified into 2, namely a good diet if the total score is >4 , and a poor diet if the total score is ≤ 4 . Data collection was carried out with ethical approval No.36.01/KEPK-UNP/IV/2023 carried out by KEPK Universitas Negeri Padang. The data obtained was then analyzed univariate and bivariate with tests *chi-square* with a confidence level of 95%, and p value ≤ 0.05 The data that has been processed is then presented in table form.

RESULTS AND DISCUSSIONS

RESULT

Hypertension Occurrence

Based on table 1, the results show that of the 42 respondents, more than half (54.8%) of the respondents experienced hypertension.

Table 1 Distribution of Pre-Elderly Based on Hypertension Incidence in Jorong Sikabu Hilir, Ulakan Tapakis District, Padang Pariaman Regency in 2023

Incident Hypertension	n	%
Hypertension	23	54.8
Not Hypertension	19	45.2
Total	42	100

Table 2 Average Pre-Elderly Blood Pressure in Jorong Sikabu Hilir, Ulakan Tapakis District, Padang Pariaman Regency in 2023

Pressure Blood	Max (mmHg)	Min (mmHg)	Mean (mmHg)	Standard Deviation
Systolic	172	93	134.36	20.164
Diastolic	93	70	82.07	6.620

Based on table 2, the results show that of the 42 respondents, the highest systolic blood pressure was 172 mmHg and the lowest was 93 mmHg and the highest diastolic blood pressure was 93 mmHg and the lowest was 70 mmHg.

Knowledge

Based on table 3, the results show that of the 42 respondents, more than half (52.4%) of the respondents had poor knowledge regarding hypertension.

Table 3 Distribution of Pre-Elderly Based on level Knowledge in Jorong Sikabu Hilir, Ulakan Tapakis District, Padang Pariaman Regency in 2023

Level Knowledge	n	%
Not Good	22	52.4
Good	20	47.6
Total	42	100

Dietary habit

Based on table 4, the results show that of the 42 respondents, more than half (57.1%) of the respondents had poor eating patterns related to hypertension.

Table 4 Distribution of Pre-Elderly Diet in Jorong Sikabu Hilir, Ulakan Tapakis District, Padang Pariaman Regency in 2023

Dietary Habit	n	%
Not Good	24	57.1
Good	18	42.9
Total	42	100

Relationship between knowledge and the incidence of hypertension in the elderly

Based on table 5, it can be seen that the incidence of hypertension in the elderly is more common in groups with poor knowledge levels (69.6%) compared to those with good knowledge levels. Based on the chi square statistical test that was carried out, the value of $p=0.032$ ($p<0.05$) was obtained. It can be concluded that there is a significant relationship between the level of knowledge and the incidence of hypertension in the elderly in Jorong Sikabu Hilir, Ulakan Tapakis District, Padang Pariaman Regency. Year 2023.

Table 5 The Relationship between Knowledge and the Incidence of Hypertension in the Pre-Elderly in Jorong Sikabu Hilir, Ulakan Tapakis District, Padang Pariaman Regency in 2023

Elderly in Jorong Sikabu Rini, Ciakan Tapakis District, Padang Pariaman Regency in 2023							
Level Knowledge	Hypertension Occurrence				Total	p value	
	Hypertension		Not Hypertension				
	N	%	n	%	n		%
Not Good	16	69.6	6	31.6	22	52.4	0.032
Good	7	31.6	13	68.4	20	47.6	
Total	23	100	19	100	42	100	

Relationship between eating patterns and the incidence of hypertension

Based on table 6, it can be seen that the incidence of hypertension in the elderly is more common in groups with poor diet (73.9%) compared to those with good knowledge levels. Based on the chi square statistical test that was carried out, a value of $p=0.035$ ($p<0.05$) was obtained, this can be concluded as stiffness resulting in an increase in blood pressure. In addition, the prevalence of hypertension increases with age and there is a significant relationship between diet and the incidence of hypertension in the elderly in Jorong Sikabu Hilir, Ulakan Tapakis District, Padang Pariaman Regency in 2023.

Table 6

The Relationship between Dietary Patterns and the Incident of Hypertension in the Pre-Elderly in Jorong Sikabu Hilir, Ulakan Tapakis District, Padang Pariaman Regency in 2023

Level Knowledge	Hypertension Occurrence				Total	p value
	Hypertension		Not Hypertension			
	N	%	n	%		
Not Good	17	73.9	7	26.1	24	0.035
Good	6	26.1	12	63.2	18	
Total	23	100	19	100	42	

DISCUSSION

Hypertension Occurrence

The incidence of hypertension based on respondents in this study was highest in pre-elderly people aged 45 years with 23 people with hypertension and 19 people without hypertension with a minimum age of 45 years and a maximum age of 54 years. Based on the results of research that has been conducted, it shows that of the 42 pre-elderly respondents, more than half (54.8%) have hypertension. The results of this study are in line with research by Elsa, et al. on factors related to the incidence of hypertension in pre- elderly people at the Bojong Gede Community Health Center in 2021. This research shows that more than some pre-elderly people experience hypertension, namely 52.2% of respondents (Oktaviani et al., 2022). Hypertension occurs because when a person is >45 years old, the arterial walls thicken, which causes the blood vessels to narrow slowly and begin to appear from the pre-elderly age of 45 years (Kartika & Purwaningsih, 2020).

Knowledge

In this study, more than half (52.4%) of respondents had poor knowledge regarding hypertension. The results of this research showed that the most answered question was what is meant by hypertension, 31 people answered correctly and the least answered question was why you should be careful about hypertension, 14 people answered correctly. The results of this research are in line with the research of Maryam, et al (2019) with the results of statistical analysis showing a value ($p < 0.002$) that there is a relationship between knowledge and the

incidence of hypertension in the elderly. This research states that the majority of respondents do not know what blood pressure is called hypertension, respondents also do not know what causes hypertension, or a good diet for hypertension sufferers and many respondents do not know the complications of hypertension (Suaib et al., 2019). Knowledge is the result of knowledge that a person obtains after sensing an object. Knowledge is very important for the formation of a person's actions. Hypertension sufferers who have knowledge related to hypertension will increase their self-confidence and increase public confidence in the effectiveness of hypertension treatment. Knowledge or cognitive is an important domain for the formation of a person's actions. Knowledge is an internal factor that influences the formation of a person's behavior (Suaib et al., 2019).

Dietary habit

Based on research that has been conducted, it is known that more than half of the respondents (57.1%) have poor eating patterns. The results of this study are in line with Aprilia's (2019) research entitled The Relationship between Diet and the Incident of Hypertension in Kadipiro Village RT 05 RW 04 Kadipiro Banjarsari Surakarta, ($p < 0.000$) which shows that there is a relationship between diet and the incidence of hypertension (Roza, 2019). Diet is a way or effort to regulate the amount and type of food eaten to maintain health and nutritional status and prevent or cure disease. The diet consists of three parts consisting of type of food, frequency and amount of food. This type of food is the staple food eaten every day and consists of animal side dishes, vegetables, fruit and rice. Eating frequency refers to how many times you eat. Food intake is the amount of food eaten by each person (Roza, 2019). The results of the SQ-FFQ interview showed that 69% of pre-elderly people consumed a variety of foods, 76.2% of pre-elderly people consumed appropriate sodium, 59.5% of pre-elderly people consumed appropriate potassium, and 95.2% of pre- elderly people consumed 3 times a day. Foods high in sodium that are often consumed by the elderly are salted fish 1-3 times/week, instant noodles 2-3 times/week, and on average housewives interviewed cook using more than 5 grams of table salt/day, foods high in sodium. Potassium that is often consumed by the elderly is bananas 2-3 times/week, spinach 3-4 times/week, and sweet potatoes 1-3 times/week.

Relationship between Knowledge and the Incident of Hypertension

The research results showed that respondents with high blood pressure (hypertension) mostly had a poor level of knowledge (69.6%) compared to a good level of knowledge. Meanwhile, respondents without hypertension who had a good level of knowledge were (68.4%). Based on the chi square statistical test, a p value of 0.032 ($p < 0.05$) was obtained, which shows that there is a significant relationship between knowledge and the incidence of hypertension in the elderly. The results of this study are in line with Wahyuni and Susilowati

(2018) who stated that there is a relationship between the level of knowledge and hypertension ($p < 0.001$) (24). Based on the results of interviews with questionnaires, on average respondents did not have good knowledge. Respondents were less able to answer correctly questions related to hypertension. So it can be concluded that pre-elderly hypertension sufferers in Jorong Sikabu Hilir, Ulakan Tapakis District, Padang Pariaman Regency have poor knowledge regarding hypertension. Then, based on table 6, it can be concluded that good and poor knowledge can influence respondents in the incidence of hypertension. Someone who has poor knowledge tends to get hypertension. People's knowledge about hypertension motivates them to better maintain their blood pressure so that their blood pressure remains under control. This good behavior can be realized through lifestyle changes, for example. limit fatty foods, reduce salty foods, don't smoke, don't drink alcohol, exercise regularly and avoid stress (Wahyuni & Susilowati, 2018).

Relationship between eating patterns and the incidence of hypertension

The results of the study showed that more than half of respondents with high blood pressure (hypertension) had a poor diet (73.9%) compared to a good diet. Meanwhile, respondents without hypertension who had a good diet were (63.2%). Based on the chi square statistical test, a p value of 0.035 ($p < 0.05$) was obtained, which shows that there is a significant relationship between diet and the incidence of hypertension in the elderly. Bad eating patterns such as consuming foods high in sodium such as salted fish and instant noodles and rarely consuming foods that contain high potassium such as avocado, tomatoes and milk. Foods high in sodium can cause high blood pressure because sodium in the body retains water in amounts that exceed the body's normal limits, which can cause an increase in blood volume and an increase in blood pressure, while potassium plays a role in the body in functioning to balance fluids, electrolytes and acids and bases. Potassium works the opposite of sodium. Potassium acts as a regulator of intracellular fluid, preventing the accumulation of fluid and sodium in cells, which can increase blood pressure. High potassium intake increases intracellular fluid concentration, so that extracellular fluid tends to increase and blood pressure decreases (Dan & Fisik, 2022; Gizi et al., 2022). The results of this research are in line with the research of Ajikwa, et al. (2018) entitled The Relationship between Diet and Lifestyle and the Incidence of Hypertension in the Pre-Elderly and the Elderly in the Work Area of Puskesmas I Kembaran, the results ($p < 0.003$) show that there is a relationship between diet and the incidence of hypertension in the Pre-Elderly and the Elderly. Poor diet can cause hypertension. Bad eating habits such as foods high in saturated fat, salt, lack of vegetables and fruit, and canned foods and drinks trigger high blood pressure because these foods do not meet the necessary calorie needs and contain lots of preservatives (Widianto et al., 2019).

CONCLUSION

Based on the research that has been conducted, the following conclusions can be drawn: There is a significant relationship between knowledge and diet with the incidence of hypertension in pre-elderly people in Jorong Sikabu Hilir. It is hoped that the Puskesmas will emphasize more on knowledge about the link between hypertension and cardiovascular disease and the community, especially the pre elderly population (45-54 years) will better maintain their diet and consume foods high in potassium and maintain an ideal body weight to prevent the occurrence of hypertension.

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