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FACTORS RELATED TO THE INCIDENT OF HYPERTENSION IN THE ELDERLY IN TEUPIN KUYUN VILLAGE, SEUNUDDON DISTRICT, NORTH ACEH DISTRICT, 2024

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ABSTRACT

Hypertension can be defined as persistent blood pressure where the systolic pressure is above 120 mmHg and the diastolic pressure is above 90 mmHg. This study aims to determine the factors associated with the incidence of hypertension in the elderly in Teupin Kuyun Village, Seunuddon District, North Aceh Regency. This research design uses *cross sectional*. In determining the sample using the total sampling technique. The number of samples taken was 42 respondents. The variables studied were age, hereditary history, salt consumption. Hypertension data was obtained through blood pressure measurements, age and salt consumption data were obtained through questionnaires. This research uses statistical tests *Chi-Square* with *p-value* (< 0.05). Based on the research results, it was found that 40 people (95%) of elderly respondents had hypertension, based on tests *Chi-Square value is obtained* $P=0.088$, which means there is no significant relationship between age and the incidence of hypertension. In the hereditary variable, 30 people (71%) were found. There are offspring who have hypertension, based on tests *Chi-Square value is obtained* $P=0.001$, which means there is a significant relationship between heredity and the incidence of hypertension. In the salt consumption variable, 35 people (83%) found Those who consumed more salt experienced hypertension, according to tests *Chi-Square value is obtained* $P=0.001$, which means there is a significant relationship between salt consumption and the incidence of hypertension.

Keywords: Hypertension, Elderly, Heredity, Salt consumption

INTRODUCTION

According to WHO (2020) Hypertension is a serious medical condition and can increase the risk of heart, brain, kidney and other diseases. Hypertension is the leading cause of premature death worldwide with more than 1 in 4 men and 1 in 5 women and more than one billion people experiencing the condition ((Putri et al., 2022)

The Ministry of Health (2018) stated that the prevalence of hypertension in Indonesia, obtained through questionnaires and blood pressure measurements, tends to be higher in low education groups and non-working groups, possibly due to ignorance about good eating patterns. Based on the analysis of hypertension, it was found that the national prevalence was 5.3 percent (men 6.0% and women 4.7%), urban areas (5.6%) were higher than urban areas (5.1 (Muslimah et al., 2023)

According to the Ministry of Health (2019), the death rate in Indonesia due to hypertension is 427,218 deaths. Hypertension based on age occurs in the age group 31-44 years (31.6%), age 45-54 years (45.3%), and mostly in the age group 55-64 years (55.2%) (Rizkiyanti & Trisnawati , 2021)

Aceh Health Office (2018) stated that the number of hypertension sufferers based on City Districts in Aceh Province was 8.72% Simeulu, 8.19% Aceh Singkil, 11.33% South Aceh, 4.94% Southeast Aceh, 8.21% East Aceh, 8.22% Central Aceh, 10.92 West Aceh, 8.21% Aceh Besar, 10.67% Pidie, 11% Bireuen, 10.29% North Aceh, 9.77% Southwest Aceh, 5.38% Gayo Lues, 9.41% Aceh Tamiang, 10.32% Nagan Raya, 11.54% Aceh Jaya, 9.94 % Bener Meriah, 9.31% Pidie Jaya, 8.35% Banda Aceh, 10.81% Sabang, 7.55% Langsa, 8.96% Lhokseumawe, 5.61% Subulussalam ((Muslimah et al., 2023)

Riskesdas (2018) states that as humans age, physiological functions will decrease due to the aging process so that various non-communicable diseases often appear in the elderly and elderly, one of which is hypertension. Hypertension is a non-communicable disease which is one of the main causes of death in the world (Oktaviana et al., 2022)

Hypertension is often referred to as *The Silent Killer* (silent killer) because usually sufferers do not know that they have hypertension and only find out that they have hypertension after complications occur. The consequences that occur if hypertension is not treated immediately include stroke, retinopathy, coronary heart disease and heart failure and chronic kidney disease (Kurniadi & Nurrahmani, 2014)

The impact of hypertension that is not treated properly will cause various complications. If it hits the heart, heart failure and coronary heart disease can occur, if it hits the kidneys, chronic kidney failure can occur, and if it hits the eyes, vision problems will occur. The various complications that may arise are very serious illnesses and have an impact on the sufferer's psychology because their quality of life is low, especially in cases of stroke, kidney failure and heart failure (Zaim Anshari, 2020)

Risk factors that can influence the occurrence of hypertension in a person are divided into two, namely risk factors that cannot be changed and risk factors that can be changed. Risk factors that cannot be changed include age, gender and genetics. Risk factors that can be changed are smoking, excessive salt consumption, obesity, lack of physical activity, excessive alcohol consumption, coffee consumption and stress. The occurrence of hypertension requires the interaction of various risk factors together (Ledoh et al., 2024)

The number of cases of hypertension in the elderly in Seunuddon District in 2022-2023 is 150 cases. Based on the results of a preliminary survey conducted on 10 respondents aged > 60 years in Teupin Kuyun Village, it was found that there were 10 elderly respondents who ate foods containing salt with a frequency of > 1 x / day or 3-6 x/week. And out of 10 there were 6 respondents who had a family history of hypertension, namely their mother and father.

METHODS

This type of research is analytical observational research using a research design *Crosssectional*. This research design is used to find the relationship between the independent variable (risk factor) and the dependent variable (effect) by taking momentary measurements (Aziz Alimul Hidayat, 2014). Location: This research was conducted in Teupin Kuyun Village, Seunoddon District, North Aceh Regency from March to July 2024. The samples in this study were all elderly people in Teupin Kuyun Village, Seunoddon District, using a sampling technique using the method *total sampling* totaling 42 people.

The variables in this research consist of dependent and independent variables. The dependent variable is the incidence of hypertension. The independent variables are Age, Heredity and Salt Consumption. Data collection methods to determine factors related to the incidence of hypertension in the elderly use tests *chi square*.

RESULTS AND DISCUSSION

1. Respondent Characteristics

No	Characteristics	Frequency	%
1.	Hypertension		
	Yes	37 People	88 %
	No	5 People	12 %
	Total	42 People	100 %
2.	Age		
	Elderly	40 People	95 %
	Old Age	2 People	5 %
	Total	42 People	100 %
3.	Ancestry History		
	There is	30 People	71 %
	There isn't any	12 People	29 %
	Total	42 People	100 %
4.	Salt Consumption		
	Not enough	2 People	5 %
	Enough	5 People	12 %
	More	35 People	83 %
	Total	42 People	100 %

Based on table 1 above, it shows that the majority of elderly people studied were Yes, Hypertension, 37 people (88%), most of the people studied were elderly, 40 people (95%), most of those studied had a hereditary history, 30 people (71%) , the majority of those studied consumed excess salt, 35 people (83%).

2. The relationship between age and the incidence of hypertension in the elderly in Teupin Kuyun Village, Seunuddon District, North Aceh Regency.

Table 2: Relationship between age and the incidence of hypertension in the elderly in Teupin Kuyun Village, Seunuddon District, North Aceh Regency.

Age	Hypertension Percentage (%)				P Value
	Yes	%	No	%	
Elderly	36	86 %	4	10%	0,088
Old Age	1	2%	1	2%	
Total	37	88 %	5	12 %	

Source: Research Data Processing Results, 2024

The results of the analysis of the relationship between the age factor and the incidence of hypertension in the elderly showed that of the 42 respondents, more elderly people experienced hypertension, namely 36 people (86%). Based on the table above using the Chi Square test, the statistical test results show that the value of $p = 0.088 > \alpha = 0.05$, which means that H_0 is accepted and H_1 is rejected, that there is no relationship between age and the incidence of hypertension in the elderly in Teupin Kuyun Village, Seunuddon District, Aceh Regency. North.

2. Relationship between heredity and the incidence of hypertension in the elderly in Teupin Kuyun Village, Seunuddon District, North Aceh Regency.

Table 3. Relationship between heredity and the incidence of hypertension in the elderly in Teupin Kuyun Village, Seunuddon District, North Aceh Regency.

Descendants	Hypertension Percentage (%)				P Value
	Yes	%	No	%	
Yes	30	71 %	0	0%	0,001
No	7	17%	5	12%	
Total	37	88 %	5	12 %	

Source: Research Data Processing Results, 2024

The results of the analysis of the relationship between hereditary factors and the incidence of hypertension in the elderly showed that of the 42 respondents, elderly people who experienced hypertension had more hereditary histories, namely 30 people (71%). Based on the table above using the Chi Square test, the results of the statistical test show that the value of $p = 0.001 > \alpha = 0.05$, which means that H_1 is accepted and H_0 is rejected, that there is a relationship between hereditary history and the incidence of hypertension in the elderly in Teupin Kuyun Village, Seunuddon District, Aceh Regency. North.

4. The relationship between salt consumption and the incidence of hypertension in the elderly in Teupin Kuyun Village, Seunuddon District, North Aceh Regency.

Table 4. Relationship between salt consumption and the incidence of hypertension in the elderly in Teupin Kuyun Village, Seunuddon District, North Aceh Regency.

Salt Consumption	Hypertension Percentage (%)				P Value
	Yes	%	No	%	
Not enough	0	0 %	2	5%	0,001
Enough	3	7%	2	5%	
More	34	81%	1	2%	
Total	37	88 %	5	12 %	

Source: Research Data Processing Results, 2024

The results of the analysis of the relationship between salt consumption factors and the incidence of hypertension in the elderly showed that of the 42 respondents, elderly people who experienced hypertension consumed more salt, namely 34 people (81%). Based on the table above using the Chi Square test, the results of the statistical test show that the value of $p = 0.001 > \alpha = 0.05$, which means that H_1 is accepted and H_0 is rejected, that there is a relationship between salt consumption and the incidence of hypertension in the elderly in Teupin Kuyun Village, Seunuddon District, Aceh Regency. North.

DISCUSSION

A. Relationship between age and the incidence of hypertension in the elderly

Based on the results of statistical tests using the test *Chi Square* showed that there was no significant relationship between age and the incidence of hypertension as proven by the results $p\text{-value} = 0.088$, this is not in line with research by Idha Kurniasih, et al, 2021 with a multivariate test and obtained a significance value ($p=0.010$), which means that there is a statistically significant relationship between age and the incidence of hypertension.

According to Kaplan, increasing a person's age will be accompanied by changes in the structure of large blood vessels, the lumen becomes narrower and the blood vessel walls become stiff, the result is an increase in systolic blood pressure. In essence, the prevalence of hypertension increases with age because the elderly require an increased blood condition to pump blood to the brain and other vital organs (Azhari, 2017)

B. Relationship between heredity and the incidence of hypertension in the elderly

Based on the results of statistical tests using the test *Chi Square* shows that there is a significant relationship between heredity and the incidence of hypertension as proven by the results $p\text{-value} = 0,001$.

The research results of Nanang et al., (2020) using statistical bivariate analysis tests revealed that of the 29 respondents who did not have hereditary factors, the majority experienced hypertension as many as 17 people (58.6%). Likewise, of the 59 respondents who had hereditary factors, the majority experienced hypertension, 48 people (81.4%). Using the Chi Square test, it shows $p\text{-value} = 0.023$, which is less than the significance value, namely 5% (0.05), this shows that there is a significant relationship between hereditary factors and the incidence of hypertension. From the

analysis above, the value of OR = 3.08 is obtained, which indicates that the respondent's hereditary factors are 3.08 times at risk of experiencing hypertension (Nanang et al., 2019)

Based on the results of the ChiSquare test analysis, significant results were obtained with a value of $p(0.002) \leq p \alpha (0.05)$, which means that there is a significant relationship between hereditary factors or a history of heredity and hypertension and the risk of hypertension in the elderly in the Pandak II Bantul Health Center Work Area. DIY in 2019 (Khotimah et al., 2021)

Relationship between hereditary factors and the incidence of hypertension. Based on the results of the Chi-square test, $p = 0.000$, which means there is a relationship between hereditary factors and the incidence of hypertension (Situmorang, 2015)

Hereditary history is an inherited factor that triggers hypertension, especially primary hypertension. If someone in the family has hypertension, there is a 25% chance that person will develop hypertension. If both parents have hypertension, the chance of suffering from hypertension increases to 60%. The research results prove that hereditary factors play an important role and determine how likely people are to suffer from hypertension. If you know you have hypertensive parents, you should regularly check your blood pressure and avoid a lifestyle that can increase blood pressure. According to researchers' assumptions, 30 people (71%) have a greater family history of hypertension than people who do not have family members who suffer from hypertension. This was supported when researchers conducted interviews with elderly people regarding the family history of hypertension. The results of the questionnaire questions stated that 71% of all respondents had a family history of hypertension, but healthy lifestyle changes can reduce the incidence of hypertension in the family. Based on the research results, it can be concluded that family history is related to the incidence of hypertension in the elderly in Teupin Kuyuen Village, Seunuddon District, North Aceh Regency.

C. Relationship between salt consumption and hypertension in the elderly

Based on the results of statistical tests using the test *Chi Square* shows that there is a significant relationship between heredity and the incidence of hypertension as proven by the results $p\text{-value} = 0.001$. The results of this study show that there is a relationship between salt consumption and the incidence of hypertension because excessive salt intake resulted in hypertension in 34 people (81%) because at the time of the interview the average salt intake was obtained from seafood, table salt, seasonings, soy sauce, ready-to-eat food. and salted fish.

According to (Triandini, 2022) Research conducted on 89 respondents in the work area of the Twenty Three Ilir Health Center, Palembang City. The incidence of hypertension is divided into three categories, namely mild, moderate and severe hypertension. The results of the bivariate analysis showed that of the 46 respondents who consumed high salt and suffered from mild hypertension, there were 11 respondents (12.4%), moderate hypertension, there were 28 respondents (31.5%) and those with severe hypertension were 7 respondents (7.9%) . Test results *Chi-Square* value obtained $p\text{-value} 0.007 < \alpha = 0.05$ in the work area of the Twenty Three Ilir Health Center, Palembang City. So the hypothesis which states that there is a relationship between high salt consumption and the incidence of hypertension is statistically proven.

Increased sodium intake causes the body to retain fluid, which increases blood volume. The heart has to pump hard to push the increasing volume of blood through an increasingly narrow space, the result of which is hypertension (Muliyati et al., 2011)

CONCLUSION

Based on the results of research and analysis of factors related to hypertension in elderly people in Teupin Kuyun Village, Seunuddon District, North Aceh Regency, the following conclusions can be drawn:

1. Distribution of Blood Pressure in the Elderly is in Hypertension as many as 37 people (88%)
2. The distribution of elderly people is in the Old Age category as many as 40 people (95%)
3. Distribution of the Ancestry History of the Elderly is in the category of There are Descendants as many as 30 people (71%)
4. The distribution of salt consumption is in the category of more than 35 people (83%)
5. There is no significant relationship between age and the incidence of hypertension (p value = 0,088) among the elderly in Teupin Kuyun Village, Seunuddon District
6. There is a significant relationship between heredity and the incidence of hypertension (p value = 0,001) among the elderly in Teupin Kuyun Village, Seunuddon District
7. There is a significant relationship between salt consumption and the incidence of hypertension (p value = 0,001) among the elderly in Teupin Kuyun Village, Seunuddon District

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