



Relationship between Lifestyle and Hypertension in the Elderly at Puskesmas Andalas Padang West Sumatera

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Abstract

The prevalence of hypertension in the elderly nationally reached 25,16% in 2019. The incidence of hypertension is related to the lifestyle of the elderly. The purpose of this study was to determine the relationship between lifestyle and the incidence of hypertension in the elderly at Puskesmas Andalas. This type of research is quantitative with a cross-sectional study method. This research was conducted in March - August 2023 with a population of all elderly people visiting the Puskesmas Andalas Kota Padang. The sample in this study was 96 elderly people who were taken using accidental sampling technique with the research instrument used was a questionnaire. Analysis was carried out univariate and bivariate using the chi-square statistical test. The results showed that 51.0% of the elderly had a negative diet, 74.0% of the elderly had light physical activity and 55.2% of the elderly did not have a smoking habit. There is a relationship between diet (p value = 0.031) and physical activity (p value = 0.040) with the incidence of hypertension in the elderly. While smoking habits do not have a significant relationship with the incidence of hypertension in the elderly at Puskesmas Andalas (p value = 0.379). Diet and physical activity affect the incidence of hypertension in the elderly. It is expected that the Puskesmas Andalas needs to carry out health promotion and education to the elderly about the elderly lifestyle, especially diet and physical activity to minimize the incidence of hypertension in the elderly.

Keywords : Elderly, Hypertension, Lifestyle

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INTRODUCTION

Hypertension is a disease with a very high prevalence of disability and death rates from year to year, also known as the silent killer disease. Hypertension is often experienced by elderly people aged ≥ 60 years (Widianto et al., 2019). Hypertension is a state of increased blood pressure above normal or called high blood pressure, hypertension is an increase in systolic blood pressure of 140 mmHg and diastolic blood pressure of more than 90 mmHg in two

measurements with an interval of five minutes in a state of adequate rest and calm (Kemenkes RI, 2018).

According to the World Health Organization (WHO), the current global prevalence of hypertension is 22% of the total world population. Southeast Asia is in the 3rd highest position with a prevalence of 25% of the total population (Kemenkes RI, 2019). WHO data in 2019 reported there were 1.13 billion people with hypertension worldwide, two-thirds of cases

in lower-middle-income countries. This number is expected to increase in 2025, which is estimated to reach 1.5 billion cases, and the death rate from hypertension and its complications is estimated to reach 9.4 million people each year (WHO, 2019).

According to the Health Research and Development Agency through Basic Health Research (Riskesdas) data in 2018, the prevalence of hypertension in Indonesia has increased by 8.31%. The national prevalence of hypertension reached 34.11% while the prevalence of West Sumatra province was 25.1%, and Padang City 21.7% was ranked 18th per Regency / City (Kemenkes RI, 2018). Based on age groups, hypertension occurs in the age group 31-44 years (31.6%), age 45-54 years (45.3%), age 55-64 years (55.2%). Based on the data, the elderly group aged 55-64 years has the highest prevalence of hypertension (Kemenkes RI, 2018).

The phenomenon of the increasing incidence of hypertension in the elderly is related to the lack of elderly compliance in maintaining a healthy lifestyle. Changes in people's lifestyles globally today, such as the ease of getting fast food, reduce the consumption of fresh vegetables and fiber, then the consumption of salt, fat, sugar and calories continues to increase, which plays a major role in increasing the incidence of hypertension. The results of the study obtained 53.8% of respondents were not compliant in undergoing a hypertension diet, 56.4%. there is a relationship between family support and hypertension diet compliance in the elderly with a p-value (0.000). (Rindu, 2022).

The American Heart Association (AHA) states that to control hypertension it is necessary to make lifestyle changes and control risk factors such as: a balanced diet, not consuming alcohol, managing stress, quitting smoking, regular exercise and maintaining a healthy weight. The government has made various efforts to control hypertension, including health promotion (Astuti et al., 2021).

According to P2PTM Kemenkes RI (2019), there are 2 risk factors that affect hypertension, namely risk factors that cannot be changed and

risk factors that can be changed. Of these factors, one of the factors that can be changed is lifestyle. Lifestyle is a basic phenomenon that is important for life such as diet, physical activity, smoking and alcohol consumption (Kemenkes RI, 2019). Diet is a person's eating habits. Everyone needs a healthy and balanced diet to maintain their health. An unbalanced diet such as high-fat foods, lack of consumption of vegetables and fruits, foods high in sodium, can increase the risk of hypertension (Harun, 2019).

According to Widiyanto's research on the Relationship between Diet and Lifestyle with the Incidence of Pre-Elderly and Elderly Hypertension in the Kembaran 1 Health Center Working Area, it shows that there is a relationship between diet and lifestyle with the incidence of hypertension in pre-elderly and elderly people in the Kembaran 1 Health Center Working Area with an analysis of dietary variables obtained $P = 0.003$. Poor diet and lifestyle trigger the incidence of hypertension, the results of this study also showed that 41.4% of elderly people with hypertension had an unfavorable diet (Widiyanto et al., 2019). Apart from diet, physical activity also has a big role in the incidence of hypertension. Today's modern lifestyle tends to make people like instant things, as a result they tend to be lazy to do physical activity. The results showed that most respondents had less lifestyle behavior as many as 55 respondents with a percentage of 79.7% with a coefficient value of 0.787 indicating that the strength of the correlation was strong (Syah Putra, 2022). According to Mouliza's research (2018) on the Relationship between Elderly Lifestyle and the Incidence of Hypertension in Paya Bujok Tunong Village, Langsa Baro District, Langsa City shows that there is a relationship between physical activity and the incidence of hypertension where the pvalue = 0.021. The results of this study also showed that 53.9% of elderly people with hypertension had poor physical activity (Mouliza et al., 2018).

Another lifestyle factor that is a risk for hypertension is smoking. According to research

by Damanik and Sitompul (2020) on the relationship between lifestyle and hypertension in the elderly, it shows that elderly people who are at risk of hypertension occur in elderly people who have a bad lifestyle, one of which is smoking. After carrying out statistical tests (chi-square test) obtained p value = 0.028 which means that there is a relationship between smoking habits and hypertension. The results of this study also showed that 36.7% of elderly people with hypertension have a smoking habit (Damanik & Sitompul, 2020).

Based on data from the Padang City Health Office (2021), it was found that of the 23 health centers in Padang City, the highest hypertension cases were found in the Andalas Health Center, namely 14,914 people. Puskesmas Andalas is also the area with the highest number of elderly people 4,103 people (Padang City Health Office, 2021), of these elderly 968 (23%) suffer from hypertension (Puskesmas Andalas, 2022).

Based on an initial survey conducted by researchers on February 20, 2023 on 10 elderly people visiting the Andalas Health Center, it was found that as many as 8 out of 10 elderly people (80%) said they did not maintain a diet and did light physical activity and none of them did heavy physical activity. In addition, as many as 5 elderly people (50%) have heavy smoking habits and as many as 6 elderly people (60%) who have hypertension.

Therefore, it is necessary to conduct research on hypertension to find out whether there is a relationship between lifestyle and the incidence of hypertension in the elderly at the Andalas Health Center, Padang City in 2023.

METHODS

This research is a quantitative study. This study uses the Cross Sectional method to see the relationship of independent variables (diet, physical activity, and smoking habits) with the dependent variable (incidence of hypertension in the elderly) at the same time. This research was conducted at Puskesmas Andalas Padang City in March-August 2023. The population in this study

were elderly people who visited the Andalas Health Center, Padang City. The sample in this study is a small part of the population members obtained according to several procedures that can represent the population, because the population in this study cannot be determined with certainty how much the population is classified as an infinite population.

RESULTS AND DISCUSSION

Based on the results of research that has been obtained through interviews and observations of the Relationship between Lifestyle and the Incidence of Hypertension in the Elderly at Puskesmas Andalas Padang City in 2023, the following results were obtained:

Table 1. Frequency Distribution of Respondent Characteristics

No	Characteristics	Frequency (f)	Percentage (%)
1	Age		
	60 - 65	46	47,9
	66 - 70	34	35,4
	71 - 75	12	12,5
	76 - 80	2	2,1
	81 - 85	2	2,1
	Total	96	100,0
2	Gender		
	Male	51	53,1
	Femele	45	46,9
	Total	96	100,0
3	Education		
	Not in school	13	13,5
	Elementary school	25	26,0
	Junior school	19	19,8
	High elementary school	24	25,0
	PT	15	15,6
	Total	96	100,0
4	Occupation		
	Civil servant	2	2,1
	Private	2	2,1
	Laborer/Farmer	1	1,0
	Self- Employed	36	37,5
	Retired	18	18,8
	Housewife/Not	37	38,5

Working		
Total	96	100,0

Based on table 4.2, it is known that most of the respondents in this study were aged 60-65 years, namely 46 people (47.9%). most of the genders are male, male, namely 51 people (53.1%). According to the level of education, the most respondents have elementary school education as many as 25 people (26.0%) and seen from the work of the most respondents working as housewives / not working as many as 37 people (38.5%) at Puskesmas Andalas Padang.

Table 2. Frequency Distribution of Hypertension Incidence, Diet, Physical Activity, Smoking Habit

Hypertension	Frequency (f)	Percentage (%)
Yes	68	70,8
No	28	29,2
Total	96	100,0
Diet	Frequency (f)	Percentage (%)
Negative	49	51,0
Positive	47	49,0
Total	96	100,0
Physical activity	Frequency (f)	Percentage (%)
Heavy	4	4,2
Moderate	21	21,9
Light	71	74,0
Total	96	100,0
Smoking Habit	Frequency (f)	Percentage (%)
Heavy	11	11,5
Moderate	18	18,8
Light	14	14,6
No smoking	53	55,2
Total	96	100,0

Incidence of Hypertension at Puskesmas Andalas Padang City in 2023

Based on the results of the study, it was found that out of 96 respondents, 68 respondents (70.8%) experienced the incidence of hypertension at the Andalas Health Center, Padang City in 2023. This is in line with research

conducted by Putra (2022) in the Anak Air Health Center Work Area of Padang City, which shows that many elderly people experience hypertension (52.7%). While research by Burhan et al (2020) The Relation Between Lifestyle and Risk Of Hypertension in Elderly in The Layang Health Center Working Area Makasar City showed that 69.8% of respondents experienced hypertension. Hypertension in the elderly is abnormally high blood pressure with systolic and diastolic numbers showing numbers higher than 140/90 mmHg. Increased and prolonged blood pressure can damage blood vessels in target organs such as the kidneys, heart, brain and eyes so that hypertension becomes one of the main factors as the number one cause of death in the world or known as the silent killer (Putra, 2022). Hypertension in the elderly can be influenced by several factors, these factors are grouped into factors that can be changed such as lifestyle (diet, physical activity, smoking habits), dyslipidemia and sters and factors that cannot be changed such as age, gender, and gentics (Suiraoaka, 2012). Based on gender characteristics, respondents who experienced the most hypertension were found in male respondents (39 people). the male sex is more likely to be at risk for increased blood pressure because the male sex does not have hormones like those found in the female sex such as the hormone estrogen, so men do not have protection against hypertension and its complications. Based on age characteristics, respondents who experienced the most hypertension were found in respondents in the age range 60-65 (46 people). In the elderly, changes occur in the arteries in the body to become wider and stiffer which results in reduced capacity and recoil of blood accommodated through blood vessels. This reduction causes systole pressure to increase peripheral plasma concentration and also the presence of glomerulosclerosis due to aging and intestinal fibrosis resulting in increased vasoconstriction and vascular resistance, resulting in increased blood pressure (hypertension) (Nuraeni, 2019).

According to the assumption of researchers at Puskesmas Andalas Padang City, the high incidence of hypertension in the elderly is caused by poor lifestyles such as many elderly people who consume meat, offal, namely 62 people (64.6%) and also smoking habits in elderly men. It is hoped that the health center will further optimize health promotion for the elderly regarding hypertension because there are still many elderly people at Puskesmas Andalas Padang City who do not understand how or steps to overcome hypertension.

Diet at Puskesmas Andalas Padang City Year 2023

Based on the results of the study, it is known that the elderly at the Andalas Health Center have a negative diet as many as 49 people (51.0%) at the Andalas Health Center, Padang City in 2023. This is in line with research conducted by Mustofa et al (2022) on the Relationship between Dietary Patterns and the Incidence of Hypertension in the Elderly at UPTD Tresna Werdha Social Home, Natar District, South Lampung, which shows that the respondents had a poor diet as much as 74.6%. Meanwhile, according to Hamzah et al (2021) Analysis of the Relationship Between Diet And the Incidence of Hypertension in the Elderly showed that respondents had a poor diet of 67.7%. The food patterns of the high population in big cities are changing where fast food and cholesterol-rich foods are part of daily consumption. The recommended fat-containing food pattern in this case can be in the form of coconut milk foods whose intensity is < 3 times a week, while for foods with cholesterol, namely in the form of meat and offal, the recommended intensity of consumption is < 5 pieces a week (Gusti, 2018). According to research, 35 elderly people (36.5%) always eat meat and offal. Diet is also very closely related to hypertension. The types of foods that cause hypertension are ready-to-eat foods that contain preservatives, too high salt levels in food, excess fat consumption (Arifin et al., 2020). Based on age characteristics,

respondents who have a negative diet are found to have the most eating patterns of respondents with an age range of 60 - 65 years (26 people). Age is one of the important factors in affecting a person's health, where the older the age, it will also be accompanied by a decrease in the function of the organs in the body, one of which is in controlling diet and blood pressure if it is not balanced with a bad lifestyle, it will cause various cardiovascular diseases due to increased blood pressure (Hamzah et al., 2021).

According to the researcher's assumption, less than half of the elderly have a negative diet seen from the answers to the questionnaire questions given to the elderly, this is because the elderly have a habit of consuming coconut milk and salty foods. From the results of interviews with several elderly people, they said that they often consume coconut milk foods because of the customs and culture of the local community which always serves coconut milk dishes when holding important events such as kenduri, weddings, circumcision, bathing and other traditional events. This is also due to the habits in their homes that often provide food menus that contain coconut milk. It is hoped that the health center can increase the understanding of the elderly about the right diet, so that the elderly suffering from hypertension can control the food consumed so as not to trigger an increase in blood pressure.

Physical Activity at Puskesmas Andalas Padang City Year 2023

Based on the results of the study, it was found that the elderly at the Andalas Health Center had mild physical activity as many as 71 people (74.0%). This study is in line with Jasmin et al's research (2021) on the Relationship between Physical Activity and Hypertension Levels in the Elderly at the Pancasan Health Center, West Bogor District in 2021, the elderly obtained with mild physical activity were 64 respondents, while according to Maulitanisa's research (2018) Factors Associated With the Occurance of Hypertension in Community

Hamlet 009 Bojong Menteng Village, Bekasi 2018 with mild activity were 86 respondents (53.4%). According to Damanik (2020) physical activity is the movement of limbs that causes energy expenditure which is very important for maintaining physical, mental health and maintaining quality of life to stay healthy and fit throughout the day. Physical activity that can be done can be in the form of daily activities, namely walking, gardening, washing clothes, mopping the floor, going up and down stairs, carrying groceries or in the form of sports, namely: push ups, light running, playing ball, swimming, gymnastics (Damanik & Sitompul, 2020). one of the causes of NCDs, especially hypertension, is the lack of physical activity which is categorized as sufficient if someone does physical exercise for 30 minutes every day or at least 3 - 5 days a week (P2PTM Kemenkes, 2019). The higher the cardiac output, the greater the oxygen required by body cells. Lack of physical activity causes less energy burning by the body so that excess energy in the body will be stored in the form of fat in the body. Excessive storage will result in hypertension (Damanik & Sitompul, 2020). Based on age characteristics, respondents who had mild physical activity were mostly found at the age of respondents with an age range of 60 - 65 years (27 people). Lack of physical activity increases the risk of suffering from high blood pressure (hypertension) (Mustofa et al, 2020).

According to the assumption of researchers, the number of elderly people who experience mild physical activity at the Andalas Health Center, Padang City in 2023 is seen from the answers to the questionnaire questions given to the elderly, this happens because many elderly people at the Andalas Health Center, Padang City are not aware that the importance of maintaining physical activity such as exercise. If physical activity is lacking, it will be easy to develop hypertension, on the other hand, if people's physical activity is good, it will be difficult to develop hypertension. Physical activity can be done well if you do physical activity 3 - 5 times a week. It is hoped that the health center will collaborate with other

agencies to implement the importance of physical activity so that collaboration can reduce the incidence of hypertension in the elderly.

Smoking Habits at Puskesmas Andalas Padang City in 2023

Based on the results of the study, it is known that the elderly at the Andalas Health Center in Padang City in 2023 do not have a smoking habit, namely 53 people (55.2%). This study is in line with the results of research conducted by Taufiq et al (2020) on the relationship between lifestyle and the incidence of hypertension in the elderly in the Meo-Meo Health Center Working Area, Bau Bau City, showing that the elderly do not have a smoking habit as many as 97 respondents (74.6%). Meanwhile, according to Mustofa et al (2022) the relationship between diet and the incidence of hypertension in the elderly at the UPTD Tresna Werdha Social Home, Natar District, South Lampung. Shows that the elderly do not have a smoking habit as many as 19 respondents (63.3%). Nicotine contained in cigarettes is very harmful to health besides being able to increase blood clots in blood vessels, nicotine can cause calcification of the walls of blood vessels. Consuming alcohol is also harmful to health because it can increase the synthesis of catecholamines. The presence of catecholamines triggers an increase in blood pressure (Suiraka, 2012a). A person is said to be a smoker if they have smoked at least 100 cigarettes. Someone smoking more than a pack of cigarettes a day is twice as prone to hypertension as those who do not smoke (Saiful, 2018). Based on gender characteristics, respondents who have heavy smoking habits are mostly found in the gender of male respondents (13 people). The high number of smokers in men because they have more complex difficulties to quit smoking than women (Nurhalina, 2019).

According to the assumption of researchers, the number of elderly people who do not experience smoking habits at the Andalas Health Center, Padang City in 2023 is seen from the answers to the questionnaire questions given to

the elderly, this happens because of the many risks of diseases that come in old age so that the elderly stop smoking. If someone smokes 2 packs per day or more it will be at risk of hypertension otherwise. And based on the respondents' statements at the time of the interview, on average, at a young age they had a smoking habit and they were even able to smoke at a young age as much as 2 packs per day. It is hoped that the elderly at the Andalas Health Center in Padang

City will conduct health promotion regarding the dangers of smoking in the elderly. the need for continuous and planned education to the elderly about the impact caused by smoking. In addition, policies are needed that contain sanctions against KTR violations.

The Relationship between Diet and the Incidence of Hypertension in the Elderly at Puskesmas Andalas Padang City in 2023

Table 3. The Relationship between Diet and the Incidence of Hypertension in the Elderly at Puskesmas Andalas Padang City in 2023

Diet	Hipertension				Total	p-value
	Yes		No			
	f	%	f	%	f	%
Negative	40	81,6	28	59,6	9	18,4
Positive			19	40,4	47	100
Total	68		28		96	100

Table 4. The Relationship between Physical Activity and the Incidence of Hypertension in the Elderly at Puskesmas Andalas Padang City in 2023

Physical activity	Hipertension				Total	p-value
	Yes		No			
	f	%	f	%	f	%
Heavy	49	69,0	22	31,0	71	100
Moderate	18	85,7	3	14,3	21	100
Light	1	25,0	3	75,0	4	100
Total	68		28		96	100

Table 5. The Relationship between Smoking Habits and the Incidence of Hypertension in the Elderly at Puskesmas Andalas Padang City in 2023

Smoking Habit	Hipertension				Total	p-value
	Yes		No			
	f	%	f	%	f	%
Heavy	8	72,7	3	27,3	11	100
Moderate	14	77,8	4	22,2	18	100
Light	12	85,7	2	14,3	14	100
No smoking	34	64,2	19	35,8	53	100
Total	68		28		96	

Based on the results of the study, it can be seen that the proportion of respondents with hypertension in the elderly was found more in respondents with a negative diet (86.6%) than in respondents with a positive diet level (59.6%). The results of the study obtained a value of p value = 0.031, which means that there is a significant relationship between the relationship between diet and the incidence of hypertension in the elderly of Puskesmas Andalas Padang City in 2023. The results of this study are also in line with Gusti's research (2018) where the results of the study obtained a p value of 0.00, which means that there is a significant relationship between dietary patterns (diet) and the incidence of hypertension in the elderly in the Anak Air Health Center Working Area of Padang City. In addition, research conducted by Mustofa et al (2022) also obtained a p value of 0.00, which means that there is a significant relationship between diet and the incidence of hypertension in the elderly at the UPTD Tresna Werdha Social Home, Natar District, South Lampung. According to Harun's theory (2019) Diet is a person's eating habits every day seen from the type and frequency of eating. Every individual needs a healthy and balanced diet to maintain health. An unbalanced diet in terms of quantity, frequency and type of food, such as high-fat foods, lack of vegetable and fruit consumption, high-sodium foods, can increase the risk of hypertension. A poor diet can lead to hypertension. Poor diet such as foods that contain high saturated fat, high salt, lack of vegetables and fruit and canned foods and drinks trigger hypertension because these foods do not match the calories needed and contain many preservatives (Widianto et al., 2019). The dietary patterns of the high population in big cities are changing where fast food and cholesterol-rich foods are part of daily consumption. The recommended fat-containing food pattern in this case can be coconut milk foods whose intensity is < 3 times a week (Gusti, 2018). A balanced and safe daily diet is useful for achieving and maintaining optimal nutritional and health status. The habit of eating unhealthy foods increases the

incidence of various degenerative diseases, one of which is hypertension. Some types of foods that need to be avoided or reduced in quantity because they can cause hypertension include foods that are low in fat, excessive salt (Damanik & Sitompul, 2020).

According to the assumption of researchers, the diet at the Andalas health center in Padang city in 2023 is still not good because based on the results of the questionnaire there are still many elderly people consuming salty foods. If the diet is good, it will not be at risk of hypertension, on the contrary, if the diet is bad or negative, it will easily be at risk of hypertension. A good diet can be done by consuming enough salt with 1 teaspoon per day. It is hoped that respondents can be accompanied by going to the health center for a health check once a month to reduce the incidence of hypertension at the Andalas Health Center, Padang City in 2023.

The Relationship between Physical Activity and the Incidence of Hypertension in the Elderly at Puskesmas Andalas Padang City in 2023

Based on the results of the study, it can be seen that the proportion of respondents with hypertension in the elderly was found more in respondents with mild physical activity (69.0%) than in respondents with heavy physical activity (25.0%). The results of the study obtained a value of p value = 0.040, which means that there is a significant relationship between the relationship between physical activity and the incidence of hypertension in the elderly Puskesmas Andalas Padang City year. The results of this study are in line with the research of Mouliza (2018) where the results of the study obtained a p value of 0.021, which means that there is a relationship between physical activity and the incidence of hypertension in Paya Bujuk Tunong Village, Langsa Baro District, Langsa City. Likewise with Maulitanisa (2018) where the results of the study obtained a p value of 0.029, which means that there is a significant relationship between physical activity and the incidence of hypertension in RW 009

Kelurahan Bojong Menteng Bekasi 2018. According to Suiraoaka (2012) People who are less active in doing sports generally tend to be overweight and will increase blood pressure. With exercise we can improve the work of the heart. So that blood can be pumped properly throughout the body. Physical activity such as: regular exercise, not only maintains body shape and weight, but also lowers blood pressure. Types of physical exercise that are easy to do are walking, cycling, swimming and aerobics (Arifin et al., 2020). Physical activity is one of the controllable risk factors for hypertension. Lack of physical activity increases the risk of high blood pressure. Inactive people tend to have faster heart rates and their heart muscles have to work harder with each contraction, the harder and more often the heart has to pump the greater the force that presses on the arteries (Jasmin et al 2021).

According to the assumption of researchers, physical activity at the Andalas Health Center, Padang City in 2023 is still not good 71% because from the results of interviews many elderly people do daily activities at home, not many exercise such as cycling and jogging, even though the Andalas Health Center carries out morning gymnastics activities every Saturday to increase the frequency of elderly people doing physical activity but there are still many elderly people who do not participate in these activities. If physical activity is lacking, it will risk hypertension, on the other hand, if physical activity is sufficient, the risk of hypertension is reduced. Physical activity is sufficient if doing physical exercise for 30 minutes per day or at least 3 - 5 times a week. It is hoped that Puskesmas Andalas can promote morning gymnastics activities and educate the elderly about good physical activity so that the elderly can take part in the gymnastics program at Puskesmas Andalas Padang City.

The Relationship between Smoking Habits and the Incidence of Hypertension in the Elderly at Puskesmas Andalas Padang City in 2023

Based on the results of the study, it can be seen that the proportion of respondents with the

incidence of hypertension in the elderly was found more in respondents with light smoking habits (85.7%) than in respondents with heavy smoking habits (72.7%). The results of the study obtained a value of ρ value = 0.379, which means that there is no significant relationship between the relationship between smoking habits and the incidence of hypertension in the elderly Puskesmas Andalas Padang City year. The results of this study are also in line with the research of Taufiq et al (2020) where the results of the study obtained a p value of 0.93, which means that there is no relationship between smoking habits and the incidence of hypertension in the elderly in the Meo-Meo Health Center Working Area, Bau Bau City. Meanwhile, according to the results of research by Sjaaf & Paf (2019), the p value is 0.84, which means that there is no relationship between smoking habits and the incidence of hypertension in the elderly at the Air Cold Lubuk Minturun Health Center.

According to Saiful (2018) a person is said to be a smoker if he has smoked at least 100 cigarettes. Someone smoking more than a pack of cigarettes a day becomes 2 times more susceptible to hypertension than those who do not smoke. Smoking behavior is smoking tobacco smoke that has become a cigar and then ignited. According to him, there are two types of smoking. The first is to smoke cigarettes directly which is called active smoking, and the second is those who indirectly smoke cigarettes. But also inhaling cigarette smoke is called passive smoking (Umbas et al, 2019). The relationship between smoking and hypertension is nicotine which causes an increase in blood pressure because nicotine in cigarettes is absorbed by small blood vessels in the lungs so that it is circulated by blood vessels to the brain, the brain will react to nicotine by signaling the adrenal glands so that they can release epinephrine (Adrenaline) (Umbas et al, 2019).

According to the assumption of researchers, smoking habits in the elderly at the Andalas Health Center in Padang City are quite good because it can be seen from the results of interviews that the elderly feel the many risks of

diseases that come in old age so that the elderly stop smoking. If someone smokes more than 2 packs per day, they will be at risk of hypertension. Based on the results of the questionnaire, many former smokers were found and some even smoked for more than 10 years, elderly people who used to smoke stopped when complications such as heart disease and diabetes occurred. It is hoped that the Puskesmas can conduct health promotion regarding smoking to the elderly to reduce the incidence of hypertension in the elderly.

CONCLUSIONS

Based on the results obtained about the relationship between lifestyle and the incidence of hypertension at the Andalas Health Center in Padang City in 2023. 68 people (70.8%) of the elderly have hypertension, 49 people (51.0%) of the elderly have a negative diet, 71 people (74.0%) of the elderly have light physical activity, 18 people (18.8%) of the elderly have moderate smoking habits and 11 people (11.5%) of the elderly have heavy smoking habits at the Andalas Health Center, Padang City Year 2023, There is a relationship between diet and the incidence of hypertension in the elderly at Puskesmas Andalas Padang City in 2023 with a p value = 0.031 ($p < 0.05$), There is a relationship between physical activity and the incidence of hypertension in the elderly at Puskesmas Andalas Padang City in 2023 with a p value = 0.040 ($p < 0.05$), There is no relationship between smoking habits and the incidence of hypertension in the elderly at Puskesmas Andalas Padang City in 2023 with a p value = 0.379 ($p < 0.05$).

REFERENCES

- Aryatiningsih, D. S. and Silaen, J. Br. (2018). Hypertension in the Community in the Working Area of Harapan Raya Health Center Pekanbaru. *Journal of Applied Science and Education Research*, 12(1): 64-77.
- Arifin, B., Zaenal, S., & Irmayani. (2020). Relationship between Lifestyle and Hypertension Incidence at Sabutung Health Center, Pangkep Regency. *Scientific Journal of Diagnosis Health*, 15(3), 227-231.
- Astuti, V. W., Tasman, T., & Amri, L. F. (2021). Prevalence and Analysis of Hypertension Risk Factors in the Nanggalo Padang Health Center Working Area. *BIMIKI (Scientific Periodical of Indonesian Nursing Science Students)*, 9(1), 1-9. <https://doi.org/10.53345/bimiki.v9i1.185>
- B, Hamzah., Akbar, H., Langingi, A. R. C., & Hamzah, S. R. (2021). Analysis of the Relationship Between Diet and the Incidence of Hypertension in the Elderly. *Journal Health & Science: Gorontalo Journal Health and Science Community*, 5(1), 194-201. <https://doi.org/10.35971/gojhes.v5i1.10039>
- Burhan, dwi yulinar, Mahmud, N. U., & Sumiaty. (2020). The Relation Between Lifestyle and Risk Of Hypertension in Elderly in The Layang Health Center Working Area Makasar City. *Window of Public Health Journal*, 01(03), 188-197.
- Damanik, S., & Sitompul, L. N. (2020). Relationship between Lifestyle and Hypertension in the Elderly. *Nursing Arts*, 14(01), 30-36.
- Padang City Health Office. (2021). health profile of Padang City. 4(1), 88- 100.
- Gusti, D. (2018). The Relationship between Dietary Patterns and Smoking Status with the Incidence of Hypertension in the Elderly in the Working Area of the Anak Air Health Center, Padang City. *MENARA Ilmu*, XII(4), 10-19.
- Harun, O. (2019). The Relationship of Diet with the Incidence of Hypertension in Outpatients. *Budi Luhur Health Journal: Journal of Public Health Sciences, Nursing, and Midwifery*, 12(2), 164-171.
- Jasmin, R., Avianty, I., & Prastia, T. N. (2021). The Relationship between Physical Activity and Hypertension Levels in the Elderly at Puskesmas Pancasan, West Bogor District,

2021. 6(1), 49-52. <https://doi.org/10.32832/pro>
- Ministry of Health RI. (2012). Guidelines for Elderly Nutrition Services.
- Ministry of Health RI. (2018). Basic Health Research Results 2018. Ministry of Health, 53(9), 1689-1699.
- Lindayani, A., Urifah, S., & Suwandi, E. W. (2018). Overview of hypertension in the elderly in the working area of the cukir jombang health center. *Journal of Edunursing*, 2(2), 63-69.
- Maulitanisa, H. (2018). Factors Associated With the Occurance of Hypertension in Community Hamlet 009 Bojong Menteng Village, Bekasi 2018. *ARKESMAS (Public Health Archives)*, 4(1), 143-148. <https://doi.org/10.22236/arkesmas.v4i1.3143>
- Melania, F. (2020). Identification of Factors Causing Elderly Inactivity in Participating in Posyandu in the Era of the Covid-19 Pandemic. *International Journal of Hypertension*, 1(1), 1-171.
- Mouliza, N., Sarumpaet, I. H., & Correspondence, P. (2018). Relationship between Elderly Lifestyle and Hypertension Incidence in Paya Bujok Tunong Village, Langsa Baro District, Langsa City. *Journal STIKES Pemkab Jombang*, 1-oai:ojs2.journal.stikespemkabjombang.ac.id:article/219
- Mustofa, F. L., Febriyani, A., Prasetya, T., & Hasriza, I. A. (2020). The Relationship of Characteristics and Physical Activity with Hypertension Levels in the Elderly at the Natar Socialtresna Werdha Home 2019. *Medika Malahayati Journal*, 4(2), 87-94. <https://doi.org/10.33024/jmm.v4i2.2522>
- Mustofa, F. L., Hasbie, N. F., & Roynaldo, M. D. (2022). The Relationship between Diet and the Incidence of Hypertension in the Elderly at UPTD Tresna Werdha Social Home, Natar District, South Lampung. *MAHESA: Malahayati Health Student Journal*, 2(2), 361-370. <https://doi.org/10.33024/mahesa.v2i2.4756>
- Nuraeni, E. (2019). Correlation of age and gender risk with the event of hypertension at Clinic X, Tangerang City. *JKFT Journal*, 4(1), 1-6.
- Nurhalina, N. (2019). Social Determinants and Smoking Behavior in Indonesia (Analysis of 2013 Riskesdas Data). *Borneo Journal of Medical Laboratory Technology*, 1(2), 67-76. <https://doi.org/10.33084/bjmlt.v1i2.714>
- Rindu, S. (2022). The Relationship of Family Support with Hypertension Diet Adherence in the Elderly at Puskesmas Andalas Padang in 2022. *Journal Information*, 10, 1-16.
- Saiful, N. (2018). The Relationship of Smoking Frequency with the Incidence of Hypertension in the Community. *Mesencephalon Health Journal*, 4(1). <https://doi.org/10.36053/mesencephalon.v4i1.71>
- Sjaaf, F., & Paf, P. (2019). Factors Associated with the Incidence of Hypertension in the Elderly at the Air Cold Lubuk Minturun Health Center. November, 68-77.
- Sofia Rhosma Dewi, S. K. N. (2015). *Gerontic Nursing Textbook*. Deepublish. <https://books.google.co.id/books?id=3FmA CAAQBAJ>
- Suiraoaka, I. putu. (2012a). *Degenerative Diseases (Recognizing, Preventing and Reducing Risk Factors for 9 Degenerative Diseases) (Nuha Medik)*.
- Suiraoaka, I. putu. (2012b). *Degenerative Diseases (Recognizing, Preventing and Reducing Risk Factors of 9 Degenerative Diseases (Nuha Medika (ed.); 2012th ed.)*.
- Syah Putra, S. (2022). *Influence of Lifestyle with the Incidence of Hypertension in Indonesia (A: Systematic Review)*. *Tambusai Journal of Education*, 6(2), 15794-15798.
- Taufiq, L. O. M., Diliyanti, S., Taswin, & Muriman, Y. (2020). *Relati*