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Factors Associated with the Incidence of Hypertension in the Elderly at the Millenium Clinic in Medan

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ABSTRACT

Hypertension is a non-communicable disease which is still a global health problem. Hypertension is a condition in which systolic blood pressure ≥ 140 mmHg and diastolic pressure ≥ 90 mmHg on two measurements with an interval of five minutes in a resting state (1). Uncontrolled disease can cause a 7 times greater chance of having a stroke, 6 times greater congestive heart disease, and 3 times greater heart attack is a non-communicable disease which is a very serious health problem today called hypertension.(2). "Silent killer" One of the PTM which is a very serious health problem is hypertension and can be called an iceberg phenomenon. The diagnosis of hypertension is made if a systolic blood pressure (TDS) ≥140 mmHg and / or diastolic blood pressure (TDD) ≥ 90 mmHg is obtained on two measurements at different times (3). Based on WHO data, in 2014 there were around 600 million hypertension sufferers worldwide. The highest prevalence occurs in the African region, which is 30%. The lowest prevalence is in the American region at 18%. In general, men have a higher prevalence of hypertension than women. The highest prevalence occurs in the African region, which is 30%. The lowest prevalence is in the American region at 18%. In general, men have a higher prevalence of hypertension than women (4). The results of the 2018 Riskesdas reported that the prevalence of hypertension in North Sumatra was 45.69% in the age group over 60 years for outpatients. Based on the disease that causes the death of inpatients at the District / City Hospital of North Sumatra Province, hypertension is in the first rank with the proportion of deaths of 27.02% (1,162 people), in the age group ≥ 60 years of 20.23% (1,349 people) (5).

1. Introduction

Indonesia is one of the largest countries in Southeast Asia. Indonesia is rich in agricultural products and a diverse population so that health development in Indonesia is a health effort to achieve the ability to live a healthy life for every population in realizing an optimal health degree. The government's success in the medical field has been able to improve the quality of population health and life expectancy (UHH). This can be seen from the increasing number of elderly people in Indonesia(1).

Hypertension is a non-communicable disease which is still a global health problem. Hypertension is a condition in which systolic blood pressure ≥ 140 mmHg and diastolic pressure ≥ 90 mmHg on two measurements with an interval of five minutes in a resting state (1). Uncontrolled disease can cause a 7 times greater chance of having a stroke, 6 times greater congestive heart disease, and 3 times greater heart attack is a non-communicable disease which is a very serious health problem today called hypertension.(2). "Silent killer" One of the PTM which is a very serious health problem is hypertension and can be called an iceberg phenomenon. The diagnosis of hypertension is made if a systolic blood pressure (TDS) ≥140 mmHg and / or diastolic blood pressure (TDD) ≥ 90 mmHg is obtained on two measurements at different times (3).

Based on WHO data, in 2014 there were around 600 million hypertension sufferers worldwide. The highest prevalence occurs in the African region, which is 30%. The lowest prevalence is in the American region at 18%. In general, men have a higher prevalence of hypertension than women. The highest prevalence occurs in the African region, which is 30%. The lowest prevalence is in the American region at 18%. In general, men have a higher prevalence of hypertension than women (4). The results of the 2018 Riskesdas reported that the prevalence of hypertension in North Sumatra was 45.69% in the age group over 60 years for outpatients. Based on the disease that causes the death of inpatients at the District / City Hospital of North Sumatra Province,

The initial survey conducted at the Millenium Primary clinic was obtained from September 2020 for 311 elderly people visiting. Then the researchers conducted interviews with several

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elderly people and most of the elderly did not really understand the food intake that must be consumed because the patient only wanted to eat what he wanted, not what he considered because of the illness he was experiencing. Patients still cannot keep away from eating delicious and tasty food in the mouth. Consumption of foods that trigger hypertension include the consumption of salty foods, consumption of sweet foods, consumption of fatty foods because of the good taste of eating so that the patient's weight increases.

Based on the background description above, the researchers wanted to know the factors associated with hypertension in the elderly at the Millennium Clinic in Medan.

2. Research methods

The research used is analytical survey, research that tries to explore how and why this phenomenon occurs. Then perform a dynamic analysis of the correlation between phenomena, both between risk factors and effect factors. The approach used is cross sectional to determine the factors associated with the incidence of hypertension (6). The sampling technique used was the incidental technique by looking at the inclusion criteria, namely 35 elderly people.This research was conducted at the Primary Millenium clinic on the street: Jl. Captain Muslim No.58c Medan.

3. Research result

3.1 Respondent Characteristics

This section describes the characteristics of the respondents resulting from the research using processed questionnaires, the characteristics of the respondents who were the subjects in this study, namely all elderly patients who came to the Millennium Primary Clinic who carried out the examination. Based on the gender of the respondent it can be seen through the following table:

Table 1

Distribution of Frequency based on Age in the elderly at the Primary Clinic of Millenium Medan

Age	**amount**	
	F	**%**
Middle Age	2	5.80
Elderly	13	88.40
Very Old Age	2	5.80
Total	35	100

It shows that out of 35 (100%) respondents, most of the respondents were elderly, with a total of 13 people (88.40%), 2 respondents (5.80%) with middle age and 2 respondents with very old age (5.80%).

Table 2

Frequency Distribution based on Gender in the elderly at the Primary Clinic of Millenium Medan

Gender	**amount**	
	F	**%**
Man	16	45.7
Women	19	54.3
Total	35	100

It shows that out of 35 (100%) respondents, most of the respondents were female with a total of 19 people (54.3%), and 16 respondents (45.7%) were male.

Table 3

Distribution of Gender Frequency with Incidence of Hypertension in the Elderly at the Millenium Primary Clinic, Medan

Gender	**amount**	
	f	**%**
Man	16	45.7
Women	19	54.3

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Total	35	100

It shows that out of 35 (100%) respondents, most of the respondents were female, with a total of 19 people (54.3%), and 16 respondents (45.7%) with male gender.

Table 4
Distribution of BMI Frequency with Incidence of Hypertension in the Elderly at the Primary Clinic of Millenium Medan

BMI	**amount**	
	f	**%**
Normal	24	68.6
Obesity	11	31.4
Total	35	100

Knowing that out of 35 (100%) respondents, 24 people (68.6%) have a Normal BMI while 11 people (31.4%) have an overweight BMI.

Table 5
Frequency Distribution of Fast food with Incidence of Hypertension in the Elderly at the Primary Millenium Medan Clinic

fast food	**amount**	
	f	**%**
Low	16	45.7
Moderate	19	54.3
Total	35	100

It shows that from 35 (100%) respondents, most respondents eat medium fast food with 19 people (54.3%), and respondents who eat low fast food are 16 people (45.7%).

Table 6
Distribution of Genetic Frequency with Incidence of Hypertension in the Elderly at the Primary Clinic of Millenium Medan

Genetic	**amount**	
	f	**%**
No Children	21	60.0
Heredity	14	40.0
Total	35	100

It shows that of the total 35 (100%) respondents, 21 people (60.0%) had no diabetes mellitus disease while 14 (40.0%) had diabetes mellitus.

Table 7
Distribution of Frequency of Hypertension in the Elderly at the Primary Clinic of Millenium Medan

Hypertension	**amount**	
	f	**%**
Normal	17	48.6
Hypertension	18	51.4
Total	35	100

It shows that out of 35 (100%) respondents, 17 people (48.6%) did not have hypertension or normal, while 18 people (51.4%) had hypertension.

3.2 Bivariate Analysis

Bivariate analysis is to test the presence or absence of influence between the dependent variable and the independent variable, the researcher uses the difference test, namely the chi-square test p <0.05.

Table 7
Cross Tabulation of Sex with the Incidence of Hypertension in the Elderly at the Millenium Primary Clinic, Medan

Gender	Hypertension				amount		Significant
	Normal		Hypertension				
	f	%	f	%	F	%	

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Man	11	31.4	5	14.3	16	45.7	0.044
Women	6	17.1	13	37.1	19	54.3	
Total	17	48.6	18	51.4	35	100	

Based on the cross tabulation between sexes and the incidence of hypertension mentioned above, it is known that of the total 35 respondents (100%), who have male gender and do not have hypertension or normal, 11 (31.4%) respondents and male respondents who are hypertension as much as 5 (14.3%). Meanwhile, those who had female gender with no hypertension or normal were 6 (17.1%) respondents, 13 respondents (37.1%) who were female and experienced hypertension.

Table 8

Cross-tabulation of BMI with the Incidence of Hypertension in the Elderly at the Millenium Primary Clinic, Medan

BMI	Hypertension				amount		Significant
	Normal		Hypertension				
	f	%	f	%	F	%	
Normal	15	42.9	9	25.7	24	68.6	0.031
Obesity	2	5.7	9	25.7	11	31.4	
Total	17	48.6	18	51.4	35	100	

Cross tabulation between BMI and the incidence of hypertension mentioned above, it is known that of the total 35 respondents (100%), 15 (42.9%) had normal BMI and no hypertension or normal, and 9 (25.7%) respondents with normal BMI and hypertension. %). Meanwhile, 2 (5.7%) respondents who have overweight BMI and do not have hypertension or normal, 9 respondents (25.7%) who have an overweight BMI and have hypertension.

Table 9

Genetic Cross Tabulation with the Incidence of Hypertension in the Elderly at the Millenium Primary Clinic, Medan

Genetic	Hypertension				amount		Significant
	Normal		Hypertension				
	f	%	f	%	F	%	
Not	14	40	7	20	21	60	0.010
There is	3	8.6	11	31.4	14	40	
Total	17	48.6	18	51.4	35	100	

The cross tabulation between genetics and the incidence of hypertension mentioned above, it is known that of the total 35 respondents (100%), 14 (40%) of those who did not have hypertension genetics and were not hypertensive or normal were 14 (40%) respondents and 7 (20%) had hypertension. whereas there were 3 (8.6%) genetic hypertension and no hypertension and 11 (31.4%) respondents who had hypertension.

3.3 Discussion

a. Gender with Incidence of Hypertension in the Elderly at the Primary Clinic of Millenium Medan

"Gender" are physiological and anatomical attributes that differentiate between men and women, while "gender" is used to denote differences between men and women being studied. Gender is part of the social system, such as social status, age, and ethnicity, it is an important factor in determining the roles, rights, responsibilities and relationships between men and women. Appearances, attitudes, responsible personality are behaviors that will shape gender (7)

Based on research conducted at the Primary Clinic Millenium Medan using the chi-square test with the Asimp. Sign p-value 0.004 <α 0.05, it means that the p value of 0.004 is smaller than the value of 0.05, meaning that Ha is accepted and Ho is rejected. This means that there is a significant relationship between gender and the occurrence of hypertension in the elderly.

In the results of this study, it was found that according to gender, women experienced hypertension more than men and this study was in line with the research conducted by Sundari alumni of the Tanjungkarang Nursing Department with the title of factors related to

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Science Midwifery

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the incidence of hypertension. who said that the majority of respondents experienced essential hypertension 31 people (60.6%) with female gender had more hypertension than men - 94 people (39.4%) with a p-value of 0.0004 <α 0.05 (8)

According to the assumption of the researcher, women generally dominate the pattern of decision making in the field of family expenditure, men are in production expenditure, while in the field of family formation and social activities, decision making is joint and equal. The difference in the allocation of time in productive and reproductive activities correlates with the pattern of decision making that occurs in the family, in which reproductive activities tend to be patterned on women and men who are dominant in productive activities.

b. BMI with the Incidence of Hypertension in the Elderly at the Primary Clinic of Millenium Medan 2020.

Body Mass Index (BMI) is a numerical calculation of a person's height and weight. The BMI value is obtained from the weight in kilograms divided by the square of the height in meters (kg / m2). The value of BMI in adults is independent of age or sex. But BMI may not correspond to the degree of obesity in different populations due to differences in patient body proportions. Based on research conducted by the Medan Millennium Primary Clinic in 2020 using the chi-square test with an Asimp. Sign p value of 0.031 <α 0.05, it means that the p value of 0.031 is smaller than the value of 0.05 meaning that Ha is accepted and Ho is rejected. This means that there is a significant relationship between BMI and the occurrence of hypertension in the elderly.

This study is in line with research conducted by Mardani with the results that the proportion of hypertension in the obese respondent group was much higher than that of respondents whose BMI was classified as normal / underweight (40.8% versus 25.3%). The test results obtained p value = 0.018 and OR = 2.0 (95% CI: 1.164-3.561), which means that there is a significant relationship between BMI and blood pressure and respondents who are obese are twice as likely to experience hypertension than normal respondents. thin

According to Nurmalina in the book obesity prevention and management, obesity is one of the factors of hypertension. When a person is obese or in other words overweight, then that person will need more blood to supply oxygen and food to the body's tissues, so that the volume of blood circulating through the blood vessels increases, cardiac output increases, and finally blood pressure follows. increase (9)

c. Genetics with the Incidence of Hypertension in the Elderly at the Primary Clinic of Millenium Medan

This research is in line with research conducted by Suparta. Based on the Chi Square test, it was found that p = 0.004 with a significance level of = 0.05. This shows that the p value <⍰ . From this analysis it can be interpreted that Ha failed to be rejected, so it can be concluded that there is a significant relationship between genetics and the incidence of hypertension in the Internal Medicine Department of the Nene Mallomo Hospital, Sidenreng Rappang Regency (10).

According to the assumption of researchers that what causes genetics is related to the incidence of hypertension, it can be seen from the answers of respondents where the number of respondents who have genetics is more than those without genetics. When the researchers conducted the study, several respondents revealed that they had a history of hypertension from their parents, either from the father / mother, and some even revealed that from both parents. The existence of genetic factors in certain families will also cause that family to have the risk of suffering from hypertension. This is associated with increased levels of intracellular sodium and a low ratio of potassium to sodium.

4. Conclusion

After conducting research conducted by researchers at the Primary Clinic Millenium Medan regarding the factors associated with the incidence of hypertension in the elderly, the researchers concluded that:

a. Based on data obtained from the Millenium Primary Clinic in Medan, the number of elderly who visited in September was 311 people.

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Science Midwifery

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b. Based on the results obtained from research that has been conducted, the frequency distribution based on the gender of men is 16 respondents (45.7%) and women are 19 (54.3%) respondents and the chi-square results α 0.031.
c. Based on the results obtained from research that has been conducted based on the frequency distribution based on normal BMI of 24 (68.6%) respondents and overweight BMI of 11 (31.4%) respondents and chi-square α 0.018
d. Based on the frequency distribution based on Genetics, there were 21 (60%) respondents who did not have a history of hypertension and 14 (40%) respondents who had a genetic or a history of hypertension and chi-square α 0.010
e. Based on the frequency distribution based on fast food fast food, 16 people (45.7%) low fast food and 19 people (54.3%) high fast food with chi-square α 0.010
f. Based on the statistical results in the Pearson chi-square section, the Asimp.Sig value for gender is 0.031, BMI is 0.018 and genetics is 0.010 and fast food is 0.010 because of the Asimp value. Sigρ (0.000) <α (0.05), it can be concluded that the results obtained are that there is a significant relationship between sex, BMI and genetics with the incidence of hypertension in the elderly at the Primary Clinic of Millennium Medan.

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