

Research article

Overview of Hypertension in the Elderly at the Health Center: A Descriptive Study

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Abstract

Hypertension is systolic blood pressure ≥ 140 mmHg and diastolic blood pressure ≥ 90 mmHg. An elderly person is over 60 years old. To find out the picture of hypertension in the elderly at the Kedungmundu Health Center. Design study is quantitative descriptive, and subjects are elderly with hypertension at the Kedungmundu Health Center, totaling 184. The variables hypertension in the elderly, with univariate analysis and questionnaire instruments. The research at the Kedungmundu Health Center in January-February 2024. Normal blood pressure was 59 (32.1%), and hypertension II was 36 (19.6%). There are 165 (89.7%) non-smoking and 9 (4.9%) smokers. There were 182 (98.9%) not consume alcohol and 2 (1.1%) consumed. There were 111 (60.3%) good physical activities, while 73 (39.7%) poor physical activities. Consuming good junk food was 102 (55.4%), while the bad was 82 (44.6%). There were 106 (57.6%) with a family history of non-communicable diseases, while no descendants with a family history of non-communicable diseases 78 (42.4%). The highest blood pressure is in the normal. Most people do not smoke. The majority do not consume alcohol. The most physical activity is in the good. Most of them consume junk food in the good. The majority have with a family history of non-communicable diseases. The Kedungmundu Health Center is expected to improve health services and hold Prolanis and gymnastics in each village to make it easier for the elderly to participate.

INTRODUCTION

Hypertension is an increase in blood pressure above normal, as shown by both systolic and diastolic values at the time of testing. Hypertension is defined as an increase in systolic blood pressure ≥ 140 mmHg and diastolic blood pressure ≥ 90 mmHg.¹ According to the World Health Organisation, annual deaths from heart disease and stroke as a complication of uncontrolled high blood pressure could

reach 20 million by 2020.² High blood pressure in the elderly is caused by reduced flexibility of the blood vessels, peripheral vascular resistance increases, the heart valves thicken and become stiff, and the heart's ability to pump blood decreases, reducing its volume and contractility.³ Age is a risk factor for high blood pressure. The risk of high blood pressure is higher for people aged 60 and over than for those aged 60 and under.⁴

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The World Health Organisation (WHO) recorded that 26.4% of the world's population, or 972 million people, had hypertension in 2019.⁵ Based on the 2018 Basic Health Research Report, the prevalence of hypertension is 45.3% in people aged 45-54 years, 55.2% in people aged 55-64 years, 63.2% in people aged 65-74 years, and 69.5% in people aged >75 years.⁶ According to the 2018 Central Java Provincial Basic Health Research Report, the prevalence of hypertension among the elderly 45-54 years old is 45.87%, the elderly 55-64 years old is 54.6%, the elderly 65-74 years old is 64.42%, and the elderly >75 years old is 71.31%.⁶ According to the Central Java Health Profile in 2021, the highest number of hypertension cases is in Semarang City, which is 67,101, and the prevalence is 19.56%.⁷ Kedungmundu Health Centre is ranked first for the highest hypertension in Semarang City.⁸ In 2022, there were 13,822 cases of hypertension at Kedungmundu Health Centre. This number increased compared to 2021 when there were 13,249 cases.⁷

Older people with hypertension can develop complications if not treated properly. In addition, older people have physical conditions that make them more susceptible to various diseases.⁹ Long-term high blood pressure can lead to complications such as coronary heart disease, stroke and kidney failure if it is not treated promptly. Hypertension occurs due to risk factors, namely age, gender, genetics, smoking habits, alcohol consumption, lack of physical activity, consumption of fast food and a family history of non-communicable diseases.¹⁰

It is important to control and treat high blood pressure in the elderly because of the benefits, such as optimal health. Hypertension in the elderly leads to declining health and physical weakness. The number of hypertension cases among the elderly in Indonesia is increasing every year. Therefore, based on the background and increasing hypertension every year,

researchers are interested in studying the picture of hypertension in the elderly at Kedungmundu Health Centre.

METHODS

This study uses a quantitative descriptive design. The variables used are elderly people with hypertension who are registered or recorded at the Kedungmundu Health Centre. The population of this study is all elderly people with hypertension at the Kedungmundu Health Centre, Semarang City, a total of 339 elderly people. The sampling technique used was non-probability sampling with purposive sampling and sample counting procedures with Slovin formula, so a sample of 184 respondents was obtained. The variables of this study were hypertension in the elderly, with univariate analysis and questionnaire instruments. This research was conducted at the Kedungmundu Health Centre, Semarang City, in January-February 2024. The data collection procedure is that the researcher conducts interviews with respondents using a hypertension overview questionnaire prepared by the researcher. Ethical considerations that become the basis for the researcher to conduct this research consist of informed consent, anonymity, confidentiality, self-determination, and fair treatment.

RESULTS

Respondent characteristics

From the results obtained in Table 1, the results of the study show that most of the respondents are elderly, namely 170 respondents (92.4%), while the elderly are only 14 respondents (7.6%). The majority of the respondents in this study were women, namely 121 people (65.8 per cent), while 63 people (34.2 per cent) were men. The highest number of respondents were those with primary school education, 54 people (29.3%). The fewest respondents were those with secondary education - only 25 people (13.6%). Dominated by inactive or

retired persons, namely 143 persons (77.7%), and the least by farmers or planters and civil servants or soldiers or police, 1 person each (0.5%). Dominated by the elderly suffering from hypertension > 10 years, namely 109 people (59.2%), and the least suffering from hypertension 1-5 years, only 9 people (4.9%). Dominated by older people who did not smoke, namely 165 people (89.7%), and the least had a smoking habit for > 10 years, only 9 people (4.9%).

This study was dominated by 182 people (98.9%) who did not consume alcohol, and the least consumed alcohol for 10 years was only 2 people (1.1%). Most of the elderly, 165 people (89.7%), are treated in health facilities, while only 19 people (10.3%) do not go to health facilities. This study was dominated by normal blood pressure, with 59 people (32.1%), while the lowest number of people had grade II hypertension, with 36 people (19.6%).

Table 1
Frequency distribution of elderly people with high blood pressure at the Kedungmundu Health Centre in December 2023 (n = 184)

Indicators	f	%
Age		
Elderly	170	92.4
Old	14	7.6
Gender		
Woman	121	65.8
Man	63	34.2
Education		
Didn't finish elementary school or didn't go to school	33	17.9
Primary School	54	29.3
Junior High School	25	13.6
Senior High School	42	22.8
Academies / Colleges	30	16.3
Work		
Not Working / Retired	143	77.7
Private Employees	14	7.6
Farmer / Planter	1	0.5
Self employed	16	8.7
Civil Servant / Soldier / Police	1	0.5
Other	9	4.9
Long History of Hypertension		
< 1 Year	41	22.3
1-5 Years	9	4.9
6-10 Years	25	13.6
> 10 Years	109	59.2
Long Smoking Habit		
No Smoking	165	89.7
10 Years	10	5.4
> 10 Years	9	4.9
Duration of Alcohol Consumption		
Not Consuming	182	98.9
10 Years	2	1.1
Use of Health Care Facilities		
Seeking Medical Treatment at a Health Service Facility	165	89.7
Not Seeking Medical Treatment at a Health Service Facility	19	10.3
Blood Pressure		
Normal	59	32.1
Grade I Hypertension	38	20.7
Grade II Hypertension	36	19.6
Isolated Systolic Hypertension	51	27.7
Total	184	100

Description of high blood pressure in the elderly at the health centre in Kedungmundu

From the results obtained in Table 10, this result is dominated by the elderly who do not smoke, namely 165 people (89.7%), and the fewest are heavy smokers, only 9 people (4.9%). The majority did not consume any alcohol. 182 people (98.9%) consumed no alcohol and at least 2 people (1.1%) consumed light alcohol. The majority of the elderly have good physical activity, namely 111 people (60.3%), while there are 73 people (39.7%) who have poor physical activity. Most of the elderly consumed junk food in the good category, namely 102 people (55.4%), while those who consumed junk food in the bad category were 82 people (44.6%). This study was dominated by respondents with a family history of NCDs, with 106 people (57.6%) and 78 people (42.4%) without a family history of NCDs.

Table 2

Description of high blood pressure in the elderly at the health centre in Kedungmundu in December 2023 (n = 184)

Smoking Habits	f	%
No Smoking	165	89.7
Light Smoker	10	5.4
Heavy Smoker	9	4.9
Alcohol Consumption		
Not Consuming Alcohol	182	98.9
Light Consumption	2	1.1
Physical Activity		
Good	111	60.3
Bad	73	39.7
Eating Junk or Instant Food		
Good	102	55.4
Bad	82	44.6
Family History of Noncommunicable Diseases		
No Descendants	78	42.4
There are descendants	106	57.6
Total	184	100

DISCUSSION

Respondent characteristics

The majority of the respondents are elderly, namely 170 respondents. There were 14

respondents. People with hypertension were found to be over 65 years of age, as arterial pressure increases with age and degenerative processes.¹¹ This has similarities with the family support research on the degree of hypertension in the elderly at Waplau Health Centre, Buru Regency. Most of the elderly, namely young elderly, are 32 people (53.3%), followed by middle elderly 20 people (33.3%) and elderly 8 people (13.4%).¹²

The gender in this study was predominantly female, with 121 women compared to 63 men. The cause of hypertension in women is greater than in men because the prevalence of hypertension in women increases when hormonal changes occur during menopause.¹³ This research is in line with the research on hypertensive elderly patients in the working area of Karangjati Health Centre, Ngawi Regency, where the majority of hypertensive patients are women, as many as 80 people (63.4%).⁴

Most of the respondents were in primary education, 54 people, and the least were in secondary education, only 25 people. Education is not a factor that directly triggers hypertension, but education is a factor that supports the development of hypertension due to the low understanding and knowledge of individuals about the problem of hypertension.¹⁴ The same results were found in the research on the level of knowledge about hypertension in the elderly, where the majority of the groups with the highest level of education in the elderly were primary school with as many as 33 people (47.8%), no school with 28 people (40.6%), junior high school with 4 people (5.8%), and high school and bachelor with only 2 people each.¹⁵

This survey was dominated by inactive or retired respondents, 143 people, and the least by farmers, planters and civil servants or soldiers or police, 1 person each. There are several reasons why the elderly do not work, one of which is physical weakness due to ageing. The discomfort experienced

by older people due to high blood pressure often interferes with activities, so older people consider themselves unable to work.¹⁶ The results of this study are similar to the study on the characteristics of hypertension in the elderly in Buku Village with a sample of 50 elderly people, and it was found that the elderly were predominantly not working or retired, namely 39 people (78%), and other occupations only 11 people (22%).¹⁷

More than half of the respondents, 109 people, had suffered from high blood pressure for more than 10 years. Having high blood pressure for a long time leads to complications of the disease. Functional and structural changes in the peripheral blood vessels are responsible for the increase in blood pressure in older people.¹⁸ This is in line with the long-term frequency of hypertension research, which is dominated by respondents over 60 years old and respondents with hypertension for more than 10 years or less than 10 years, namely 24 respondents.¹⁹

There were 165 respondents who did not smoke, 10 respondents who smoked only in the last 10 years and 9 respondents who smoked for more than 10 years. Among those who had smoked in the last 10 years, the young elderly were the most common, with 9 respondents, while the elderly (old) had only 1 respondent. Of those who have smoked for more than 10 years, all are elderly (old) or young elderly, namely 9 respondents. Daily smoking can increase systolic blood pressure by 10-25 mmHg and pulse by 5-20 beats per minute. Nicotine and carbon monoxide affect blood pressure in smokers.²⁰ This study is consistent with research looking at the long-term frequency of smoking habits in men. In the study, 87 people (94.6%) were heavy smokers for a long time or > 20 years, only 3 people (3.3%) were moderate smokers or 10-20 years, and only 2 people were light smokers for at least 10 years.²¹

Of the 182 people (98.9%) who did not drink alcohol and only 2 people (1.1%) who had been drinking for 10 years, there were two older people (61 and 65 years old). Alcohol increases blood pressure when consumed over a long period of time because of the increased activity of angiotensin and aldosterone. The duration of alcohol consumption is influenced by the individual's desire and interest and when they consume alcohol.²² This research is in line with that of Casmuti and Fibriana (2023). Regarding the incidence of hypertension, the results were that there were 31 respondents (14.5%) with the category of long alcohol consumption, while there were 182 people (85.5%) who did not consume alcohol.⁸

There were 165 respondents who sought care from health facilities and only 19 people who did not seek care from health facilities. Primary health facility services are implemented by the health centre at the forefront of community services with the Healthy Indonesia Programme with a Family Approach (PIS-PK) and the health centre policy, which has indicators on hypertension and elderly care.²³ This research is consistent with the research of Langingi et al. (2020). The elderly with hypertension mostly go to health facilities, namely 25 elderly people (62.5%), and 15 elderly people (37.5%) do not go to health facilities.²⁴ This research is inversely proportional to the research of Fauziah (2020). The results obtained are related to the affordability of access and the use of the Chronic Disease Management Programme.²⁵

Respondents with normal blood pressure dominated this study, with 59 people, followed by isolated systolic hypertension (51 people), while the lowest number had grade II hypertension (36 people). Most of the respondents had normal blood pressure due to adherence to treatment. More than some of the elderly with hypertension participated in Prolanis (Chronic Disease Management Programme) activities at

Kedungmundu Health Centre. The blood pressure of the elderly can be controlled with Prolanis activities. This activity consists of blood pressure checks, exercise and health education about chronic diseases, one of which is hypertension.²⁶ This research is in line with Pratiwi et al (2021). It includes the relationship between the level of knowledge about hypertension in elderly people with hypertension and blood pressure, and the results are that normal blood pressure dominates, namely 53 people (63.1%), and blood pressure in the hypertension category is 31 people (36.9%).²⁷

Overview of hypertension in the elderly at Kedungmundu Health Centre

In this study, data were obtained from 9 heavy smokers and 10 light smokers, and the population was dominated by non-smokers, namely 165 people. The majority of the light smokers are among the young elderly, namely 9 people, while the elderly (old) are only 1 person. Heavy smokers are all the elderly, nine people. Daily smoking increases systolic blood pressure by 10-25 mmHg per minute. The effects of smoking are visible after 10-20 years²⁸. This study is in line with the study on the lifestyle of hypertensive patients, which found that most of the respondents did not smoke, 54 people and 28 people who smoked.²⁹

Most of the respondents, 182 people, did not consume alcohol and only 2 people consumed light alcohol. The respondents who consumed light alcohol were all elderly, namely 2 elderly people aged 61 and 65 years. Drinking alcohol once a day can increase blood pressure. Excessive alcohol consumption significantly increases blood pressure. Drinking alcohol three times a day increases the risk of hypertension by 75%.³⁰ This research is in line with Nan et al (2021). Regarding the alcohol consumption habits of elderly people with hypertension, most of them do not consume alcohol, namely 380 people (72.6%), moderate alcohol consumption is

87 people (16.7%), and heavy alcohol consumption is 56 people (10.7%).³¹

The results of this study were 111 older people with good physical activity and 73 people with poor physical activity. From interviews with respondents at the Kedungmundu Health Centre, it was found that several older people exercised or did physical activities in the morning and light gymnastics. Exercise lowers blood pressure through sympathetic activity, weight loss and reduced body circumference.³² These findings are supported by research on the relationship between physical activity and the degree of hypertension, in which the majority of people had high physical activity, 117 people (48.1%), moderate physical activity, 101 people (41.6%), and low physical activity, 25 people (10.3%). Increased physical activity or exercise in older people is associated with lower blood pressure.³³

There are 102 people in the good category and 82 people in the bad category. Fast food is high in saturated fat and salt. Excess sodium retains water and increases blood volume, making the heart work harder to pump blood and raising blood pressure.³⁴ Eating junk food can raise blood pressure, while eating fruit and vegetables can lower blood pressure.³⁵ These findings agree with Pertiwi (2022), who found that among older people who did not consume junk food, there were 277 older people in the good category and 11 older people in the bad category.³⁶

There were 106 respondents with a family history of CVD, while 78 people had no family history of CVD. A family history of non-communicable diseases is a trigger for hypertension, as the majority of older people with hypertension have a family history of non-communicable diseases. A history of CVD from a father, mother, grandfather, grandmother, uncle or aunt can cause a person to develop hypertension.³⁷ These findings are supported by Ikrimah et al (2022). The

majority of older people with hypertension have a family history of non-communicable diseases, 58 people (63.7%), and those without a family history of non-communicable diseases are 33 people (36.3%).³⁸

CONCLUSION

The elderly with the highest prevalence of hypertension are the elderly or young elderly, namely 170 respondents. Most of them are female; there are 121 elderly people. The last education of the elderly is primary school. Most of the respondents are unemployed pensioners or housewives. Most have suffered from high blood pressure for more than 10 years. Most of the elderly do not smoke. Most of the elderly do not drink alcohol. Most of the elderly go to health facilities for treatment. The most common blood pressure is in the normal category, followed by isolated systolic hypertension, grade I and grade II. Most of the respondents do not smoke and only nine of the elderly are heavy smokers. Most of the respondents did not consume alcohol and only 2 respondents, aged 61 and 65, consumed light alcohol. Most of the older people had a good level of physical activity. The majority consumed junk food in the good category, namely 102 elderly people. Most of them have offspring with a family history of noncommunicable diseases, namely 106 elderly people, while 78 elderly people have no offspring with a family history of noncommunicable diseases.

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CONFLICTS OF INTEREST

Neither of the authors has any conflicts of interest that would bias the findings presented here.

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