The characteristics of the elderly with hypertension in Jatimulyo Village

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ABSTRACT

Background: Physical and psychological decline is a sign of aging. In addition, aging also increases the risk of diseases that can lead to death. Hypertension is a non-communicable but chronic disease with a very high prevalence rate in the elderly. Many changes occur during the aging process. These changes need special attention. In the elderly, some problems arise from physical, cognitive, social, and sexual feelings. One of the changes in the cardiovascular system in the elderly is hypertension.
Methods: The samples used were ten patients according to the inclusion and exclusion criteria. The research data is primary data obtained from interviews based on questionnaires. Of the ten research subjects, the proportion of hypertension was found in problems with the characteristics of age 60-74 years as much as 70%, female gender (70%), high school education level (60%), and existing housewife occupation (70%). In addition, most of the research subjects had grade 1 hypertension (90%).
Results: Of the ten research subjects, the proportion of hypertension was found in problems with the characteristics of age 60-74 years as much as 70%, female gender (70%), high school education level (60%), and housewife occupation (70%). In addition, most of the research subjects had grade 1 hypertension (90%).
Conclusion: Hypertension is also a non-communicable but chronic disease with a very high prevalence rate in the elderly. The prevalence of hypertension at the world level, especially in developed countries, in the elderly population > 60 years is estimated to reach two-thirds or around 60%-80%.

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INTRODUCTION

Two billion people worldwide are spread across 195 countries. Currently, these countries are competing with each other to improve the welfare of their residents with the resources they have. In developed countries, the shape of the population pyramid is constructive (old), namely having a small number of young age groups.[1,2] This is caused by decreasing birth and death rates, increasing life expectancy, population slowdown, and low dependency ratios. Meanwhile, developed countries have a picture of an expansive (young) population pyramid with characteristics: most of them are young, while the elderly population is tiny.[3] This also shows an increase in the birth rate rather than the death rate. Population growth is speedy, thus causing an increasing need for employment, and a vast dependency ratio.[4,5] In 2020, it will increase to 27 million people (10%)— the high elderly population results in

challenges that must be faced. Naturally, aging is a decline in body function, which is an accumulation of damage at the cellular and molecular level that occurs over a long time. Decreased physical and psychological abilities are a sign of aging. Also, aging creates an increased risk of disease that can lead to death.[6,7]

Changes occur during the aging process; these changes need special attention. In the elderly, some problems arise, namely changes in physical, cognitive, social, and sexual feelings.[8] Changes in the cardiovascular system, a significant disease, claim many elderly victims in developed countries because they impact other conditions, such as coronary heart disease, pulmonary heart disease, cardiomyopathy, stroke, hypertension, and kidney failure.[9]

High pressure or hypertension is a medical condition where blood pressure increases above average, namely 140/90 mmHg, and can cause pain (morbidity) and even death (mortality).[10]

Hypertension is also a type of disease that is not contagious but is chronic, with a very high prevalence rate in the elderly.[11] The prevalence of hypertension at the world level, especially in developed countries, in the elderly population > 60 years is estimated to reach two-thirds or around 60%-80%.4 Hypertension is often said to be the silent killer.4 Elevated blood pressure can cause complications such as kidney failure, stroke, and right ventricular hypertrophy.[12]

The World Health Organization (WHO) noted that in 2013, there were at least 972 million cases of hypertension, and it is estimated that this will increase to 1.15 billion points in 2025, or around 29% of the world's population. This means there will be 333 million in developed countries and 639 million in developing countries, including Indonesia.[13] According to Riskesdes (2018), hypertension measurement results reached 34.1%, a sharp increase from 25.8% in 2013.9. The highest prevalence of hypertension in

Indonesia in 2018 was in South Kalimantan Province at 44.1%, and the province with the lowest hypertension was the province of Papua, amounting to 22.2%. There are ten people with hypertension in South Kalimantan.[14,15]

Hypertension has risk factors, which are divided into two groups: hypertension, which cannot be changed, and hypertension, which can be changed. Hypertension that cannot be changed includes age, gender, ethnicity, and hereditary factors.[16] Meanwhile, hypertension that can be changed includes obesity, lifestyle, lack of physical activity or exercise, drinking coffee, smoking, sodium sensitivity, low potassium levels, alcohol, work, diet, and stress.[17] This study aims to determine the picture of hypertension in the elderly in RW 9 Jatimulyo.

METHODS

This study has used descriptive observational research using a cross-sectional design to determine the description of hypertension in the elderly in RW 9 Jatimulyo. The population of older adults in RW 9 Jatimulyo who have been recorded is 18. This population has been eliminated using the desired criteria. These criteria include the elderly aged 60 years and over, have a history of high blood pressure, and are residents of RW 9 Jatimulyo. After obtaining the desired sample, it was found that three older adults had high blood pressure. The location used for data collection was at the RW 9 Jatimulyo hall, which had been selected using the sequential sampling method. The data that has been collected is then processed, analyzed, and interpreted in the form of a descriptive narrative.

Data collection has been carried out in a way that is a measurement of blood pressure (systolic and diastolic) using an automatic Sphygmomanometer. For obesity data collection, researchers collected data using the Body Mass Index measurement method. Collecting data on factors such as gender, age, and education level that affect hypertension, researchers have taken measurements directly using interviews with respondents. This study used 2 data, namely primary data with a questionnaire in this questionnaire and secondary data through medical records at Kendalsari Health Center. The data analysis that has been done is univariate analysis to describe the frequency distribution of the independent variables (age, gender, obesity, and regularity of treatment) and the dependent variable (hypertension).

RESULTS

The distribution of respondents based on the age of the respondents can be seen in Table 1. Based on Table 1, it is known that hypertension sufferers in Jatimulyo have an age classification consisting of 3 classifications. Based on the middle-aged (45-59 years), there is one elderly (10%), the elderly (60-74 years) are seven elderly with a percentage of 70%, while among the elderly (75-90 years) there are two elderly with a percentage of 20%. The gender characteristics of Jatimulyo are known. In the male gender, there are three older adults, with a percentage of 30%, while in the female gender, there are seven older adults, with a percentage of 70%. The high school education level has six elderly with a percentage of 60%. In comparison, at the undergraduate education level, there are four elderly, with a ratio of 40%. Seven older adults worked as housewives, with a rate of 70%, while the job characteristics with the criteria for retirees are three older adults (30%). There are nine elderly (90%) with grade 1 hypertension (140/90 – 150/99 mmHg), while there is one elderly (10%) with grade 2 hypertension (blood pressure more than 160/100 mmHg).

The data in Table 2 shows the cross-tabulation between the independent variable (age) and the dependent variable (incidence of hypertension) using the Chi-Square statistical test from 10 respondents for the elderly age category, which is classified as middle-old age (45-59 years), There is one respondent (10%) had hypertension I. Meanwhile, among the elderly (60-79 years), of the seven respondents, it appeared that six respondents (60%) had grade I hypertension and one respondent (10%) had grade II hypertension. For the elderly age category, which is classified as elderly (75-90 years), of the two respondents (20%) who are classified as elderly, all of them have grade I hypertension. The cross-tabulation between the independent variable (gender) and the dependent variable (incidence of hypertension) using the *Chi-Square* statistical test from 10 respondents. For the gender category, which was classified as male, of the three respondents, there were two respondents. (20%) had hypertension I,

Table 1. Characteristics of elderly with hypertension

Variables	Components	Frequency	Percentage
Characteristic of Respondent	45 -59 years (middle advanced)	1	10%
	60 - 74 years (elderly)	7	70%
	75-90 years old seniors	2	20%
Distribution by gender	Man	3	30%
	Woman	7	70%
Distribution based on education level	Senior high school	6	60%
	College	4	40%
Distribution by occupation	Housewife	7	70%
	Retire	3	30%
Distribution based on hypertension	Grade 1 hypertension (140/90-159/99 mmHg)	9	90%
	Grade 2 hypertension (blood pressure more than 160/100 mmHg	1	10%

Table 2. Relationships between patients' characteristics and hypertension grades

Variables	Components	Blood pressure classifications				N	Total (%)
		Grade 1 hypertension		Grade 2 hypertension			
		N	percentage	N	presentation		
Age	45 -59 years (middle advanced)	1	10%	0	0%	1	10%
	60 - 74 years (elderly)	6	60%	1	10%	7	70%
	75-90 years old seniors	2	20%	0	0%	2	20 %
Sex	Male	2	20%	1	10%	3	30%
	Female	7	70%	0	0%	7	70%
Education	Senior high school	6	60%	0	0%	6	60%
	College	3	30%	1	10%	4	40%
Body mass index, kg/m^2	Normal (18.5-25.0)	7	70%	0	0%	7	70%
	Overweight (25.1-27.0)	2	20%	1	10%	3	30%
Employment	Housewife	6	60%	1	10%	7	70%
	Retire	3	30%	0	0%	3	30%

Kg/m^2, kilogram/meter squared; N, frequency.

and one respondent (10%) had grade II hypertension. Meanwhile, in women, it was seen that seven respondents (70%) had grade I hypertension. The cross-tabulation between the independent variable (level of education) and the dependent variable (incidence of hypertension) using the *Chi-Square* statistical test from 10 respondents for the education level category, which is classified as high school, there are six respondents (60%) experiencing hypertension I. Meanwhile, in the college level of the four respondents, it was seen that three respondents (30%) had grade I hypertension, and 1 respondent (10%) had grade II hypertension. Cross-tabulation between the independent variable (ideal body weight) and the dependent variable (incidence of hypertension) using the *Chi-Square* statistical test from 10 respondents for the ideal body weight category, which is classified as average body weight, there were seven respondents (70%) had hypertension I. Meanwhile, for the obese body weight of the three respondents, it was seen that two respondents (20%) had grade I hypertension, and one respondent (10%) had grade II hypertension. The cross-tabulation between the independent variable (occupation) and the dependent variable (incidence of hypertension) using the *Chi-Square* statistical test from 10 respondents for the job category belonging to IRT. Of the seven respondents, there were six respondents (60%) had hypertension I, and one respondent (10%) had hypertension II. Meanwhile, among retirees, it was seen that three respondents

(30%) had grade I hypertension.

DISCUSSION

From the results obtained, it is known that people with hypertension are more in the age criteria of 60-74 years. This is supported by previous research, which also states that 32 people (91.4%) in the elderly category aged 60-74 years experienced hypertension. The results for ancient age 75-90 years showed that three people (8.5%) experienced hypertension in a year.

Based on the results of research conducted on 50 respondents, it was found that 35 older adults experienced hypertension and were significantly at risk of developing hypertension in old age. Moreover, based on previous research confirmed that the older the age, the more at risk a person has hypertension.[18] Age 60-64 increases the risk of hypertension by 2.18 times, age 65-69 years by 2.45 times, and age> 70 years by 2.97 times. At this age, large arteries lose their flexibility and become stiff. Therefore, blood at each heartbeat is forced through blood vessels that are narrower than usual and cause blood pressure to increase.[18]

The results for it is known that more women suffer from hypertension. This is supported by previous research, which states that 29 women (82.8%) have hypertension. Based on the results of research conducted on 50 respondents, it was found that 35 older adults experienced hypertension. In contrast, older women

are significantly at risk of developing hypertension in old age, where 29 people experienced hypertension. For more on older women at risk of hypertension, research explains that women who have not reached menopause are protected by the hormone estrogen, which plays a role in increasing high-density lipoprotein (HDL) levels. Low HDL cholesterol levels and high LDL (low-density lipoprotein) cholesterol affect the process of atherosclerosis and result in high blood pressure.[18]

The results show that people with hypertension are more at the high school education level. This is in line with the results of research by Anbarasan (2015), the level of education of as many as 25 people (41.7%), the highest elementary school as many as 31 people (51.7%), junior high school as many as one person (1.7%) and high school as many as two people (3.3%).[19] The higher a person's level of education, the more life experience they have, so they will be better prepared to deal with problems that occur. Generally, older people with a higher education level can still be productive. They fill their spare time and make contributions. Higher education for the elderly is associated with a good quality of life, while lower education has a lower or worse quality of life.[20]

The results of the table regarding the distribution based on the work of respondents show that more older adults have jobs as housewives, namely as many as seven older adults (70%). In

comparison, three respondents (30%) are retirees. Previous research states that older adults who work as housewives who experience hypertension are 29 people (82.8%). The results for older adults who work as self-employed and who experience hypertension are six people. (17.1%).

Based on the results of other studies, it is said that with a sample of 50 respondents, the results of 35 older adults experiencing hypertension were obtained, whereas 29 older adults who worked as homemakers experienced hypertension. The results of someone's research explain that working as a housewife tends to cause severe hypertension due to stress. Sources of stress in the workplace include workload, inadequate work facilities, unclear work roles, unclear responsibilities, problems in relationships with others, work demands and family demands.[21]

The limitation of this study is the small number of respondents used, using only one measuring instrument used to measure tension. The subsequent research will use more respondents and more than one measuring device.

CONCLUSION

Hypertension is also a type of disease that is not contagious but is chronic, with a very high prevalence rate in the elderly. The prevalence of hypertension at the world level, especially in developed countries, in the elderly population > 60 years is estimated to reach two-thirds or around 60%-80%. Based on the research results, it was found that the criteria for age 60-74 years were 70%, female gender (70%), high school education level (60%), and housewife jobs were available (70%). In addition, most subjects had grade 1 hypertension (90%).

ETHICAL CLEARANCE

This study was approved by the Research Ethics Commission of the Faculty of Health Sciences, Muhammadiyah University of Malang. Ethical clearance with letter number 1099/UN14.2.2.VII.14/LT/2023 and protocol number 2023.01.0283.

CONFLICT OF INTEREST

This study has no conflicts of interest.

AUTHOR CONTRIBUTIONS

NNER is preparing study designs, collecting data, processing data, and writing manuscripts. NKAJA, IMNW, and MW are directing data collection and revising the manuscripts.

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