



FACTORS ASSOCIATED WITH SELF-MANAGEMENT IN ELDERLY HYPERTENSIVE PATIENTS

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ABSTRACT

Hypertension is a non-communicable disease that remains a major health problem in Indonesia and is a major risk factor for cardiovascular disease. The prevalence of hypertension in the elderly continues to increase, making self-management of this disease very crucial. One approach that has been proven effective is self-management, that includes adherence to medication, blood pressure monitoring, diet management, physical activity, and stress management. This study have to analyze the connection among demographic factors and the stage of self-management among elderly hypertensive patients at the Gabus District Health Center. The study employed a quantitative approach with a cross-sectional design. The study population consisted of all elderly hypertensive patients registered at the Gabus District Health Center. Purposive sampling was used, resulting in a total sample of 96 respondents. Data were collected using a questionnaire covering demographic characteristics and self-management components. The data were analyzed using descriptive statistics to summarize sample characteristics, Chi-square tests to examine relationships between variables, and logistic regression to identify the most dominant factors influencing self-management among elderly hypertensive patients. The outcome showed that age, education, income, in the process of of hypertension, and the presence of complications were substantially associated by the stage of self-management ($p < 0.05$). by the logistic regression test, income was proven to be the most dominant variable affecting self-management in elderly people by hypertension (OR = 7.082; 95% CI = 1.806-27.769). Health workers need to have appropriate education and support, whilst future researchers can having more effective self-management programs by considering these factors.

Keywords: demographic factors; elderly; hypertension; self-management

How to Cite (in APA Style)

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INTRODUCTION

Hypertension, or high blood pressure, is a chronic disease that commonly occurs in older adults and is one of the main factors contributing to the global health burden (Wang et al., 2025). This situation is diagnosed when test outcome have systolic blood pressure >140 mmHg and diastolic blood pressure >90 mmHg in two measurements taken five minutes apart whilst the patient is calm or at rest (Elisabeth et al., 2023). In Indonesia, the prevalence of hypertension also have an increasing trend. Based on the (Riskesdas et al., 2018), the prevalence of hypertension reached 34.1% in the adult population. Central Java, as one of the provinces by the largest elderly population, has a prevalence of 37.57%, by a higher proportion of women (40.17%) than men (34.83%) (Dinas Kesehatan Provinsi Jawa Tengah, 2021).

The elderly are a group that is very vulnerable to various health problems due to the aging process that have their physiological situation (Putri et al., 2021). Hypertension is identified as a major risk factor for cardiovascular diseases, including heart failure, atrial fibrillation, and stroke (Guasti et al., 2022). Non-compliance among the elderly by hypertension, that is often triggered by asymptomatic hypertension, cognitive decline, lack of trust in medical treatment, psychosocial factors, or high treatment costs, can hinder self-management of elderly patients by hypertension (Putri et al., 2021).

Self-management in managing hypertension involves various aspects, including taking medication regularly, maintaining a healthy lifestyle such as not smoking, managing weight, eating a low-salt and low-fat diet, exercising, limiting alcohol, monitoring blood pressure, regular check-ups by a doctor, and reducing stress (Nagarjuna et al., 2023). The success of self-management has been proven to reduce the risk of complications and improve the standard of life of hypertensive patients (Andayani et al., 2023). This study also has that self-management interventions in elderly hypertensive patients substantially reduce blood pressure, increase treatment adherence, and strengthen patients' ability to manage their own disease (Alsaqer et al., 2022)

Most of these studies focus on the effectiveness of interventions or health literacy, whilst demographic factors and health situations that influence self-management in the elderly are rarely studied. This study was conducted at the Gabus District Health Center, Indonesia, and did have to explore the connection among age, education, income, in the process of of hypertension, and complications by the stage of self- s in elderly hypertensive patients, thereby filling a gap in the local literature and having a basis for having interventions tailored to the characteristics of Indonesian elderly people. Therefore, the objective of this study was to analyze the relationship between demographic factors and the level of self-management among elderly patients with hypertension.

METHOD

This study is a descriptive analytical study using a cross-sectional approach conducted at the Gabus 1 and Gabus 2 community health centers in August 2025. The sample size was determined using the Slovin formula by a precision stage of 5%, outcome in 96 respondents. The sampling technique used was purposive sampling by the following inclusion criteria: elderly people aged ≥ 60 years diagnosed by hypertension by health workers, residing in the working area of the Gabus I and Gabus 2 health centers, able to communicate well, and willing to be respondents. The exclusion criteria were elderly individuals by severe cognitive impairment, acute situations or severe complications having intensive care, and respondents who did not complete the questionnaire.

The research instrument consisted of two parts, namely a demographic questionnaire (covering age, gender, education, occupation, income, marital status, in the process of of hypertension, and history of complications) and a Hypertension Self-Management Behaviour Questionnaire (HSMBQ), that has been tested for validity by a calculated r value ranging by 0.423 to 0.812 by an r table of 0.361, so that all items are declared valid, whilst the Cronbach's Alpha reliability value of 0.89 have good consistency. This instrument consists of 25 items covering five aspects: self-integrity, self-regulation, interaction by health workers, self-monitoring, and adherence to treatment. This instrument uses a 5-point Likert scale, namely 1 = never, 2 = very infrequently, 3 = infrequently, 4 = frequently, and 5 = very frequently.

Data analysis was conducted in three stages, namely univariate analysis to describe the frequency distribution and percentage of each variable, bivariate analysis using the Chi-Square test by a 95% confidence stage ($\alpha=0.05$) to determine the connection among demographic factors and self-management, and multivariate analysis using multiple logistic regression to determine the effect of independent variables on related variables.

RESULT

Univariate Analysis

Based on Table I, it can be seen that of the 96 respondents, the majority had low *self-management* scores , by 67 respondents (69.8%). The majority of respondents were female, by 69 respondents (71.9%). The age group by the most respondents was 60-70 years old, by 77 respondents (80.2%). Most respondents worked as farmers, totaling 54 respondents (56.3%). Meanwhile, most respondents earned an income of < Rp. 1,000,000, totaling 74 respondents (77.1%). Most

respondents had completed elementary school, by 62 respondents (64.6%). The marital status of the respondents was mostly married, by 73 respondents (76.0%). The length of time diagnosed by hypertension was mostly in the range of > 5 years, by 65 respondents (67.7%). The majority of respondents had never smoked, totaling 77 respondents (80.2%). Meanwhilst, the majority of respondents did not have complications, totaling 54 respondents (56.3%). Meanwhilst, the respondents' *self-management* stage was dominated by the low category, totaling 67 respondents (69.8%).

Table 1.
Frequency distribution of *self-management* and demographics of respondents

Variable	f	%
Self-Management		
Low	67	69.8%
High	29	30.2
Respondent Demographics		
Gender		
Male	27	28.1
Female	69	71.9
Age		
60-70	77	80.2%
71-80 years	19	19.8
Occupation		
Not working	20	20.8
Self-employed	22	22.9
Farmer	54	56.3
Income		
<Rp.1,000,000	74	77.1
Rp.1.000.000-2.999.999	22	22.9
Education		
Elementary	62	64.6
Junior High School	11	11.5
High School	10	10.4%
No schooling	13	13.5%
Marital status		
Married	73	76.0%
Widow/widower	23	24.0
in the process of of hypertension		
< 1 year	9	9.4
1-5 years	22	22.9
> 5 years	65	67.7%
Smoking history		
Never	77	80.2%
Ever	19	19.8
Complications		
Yes	42	43.8
No	54	56.3

Bivariate Analysis

Based on the outcome of Table 2, it have that of the 9 variables tested using the *Chi-Square* test, there are 6 variables that are related to *self-management*. These include age by a p-value of 0.008, occupation by a p-value of 0.004, income by a p-value of 0.005, education by a p-value of 0.002, in the process of of hypertension by a p-value of 0.010, and complications by a p-value of 0.017.

Table 2.
Connection among demographic factors and *self-management*

Demographics	<i>Self-Management</i>				Total		P-value
	Low		High		f	%	
	f	%	f	%			
Gender							
Male	21	77.8%	6	22.2%	27	100%	0.286
Female	46	66.7	23	33.3	69	100	
Age							
60-70 years	49	63.6	28	36.4	77	100	0.008
71-80 years	18	94.7%	1	5.3	19	100	
Occupation							
Not working	11	55	9	45	20	100	0.004
Self-employed	11	50	11	50	22	100	
Farmer	45	83.35	9	16.7	54	100	
Income							
<1,000,000	57	77	17	23	74	100	0.005
1,000,000-2,999,999	10	45.5	12	54.5	22	100	
Education							
Elementary	47	75.8	15	24.2	62	100	0.002
Junior High School	5	45.5	6	54.5	11	100%	
High School	3	30	7	70	10	100%	
No schooling	12	92.3	1	7.7	13	100%	
Marital status							
Married	52	71.2	21	28.85	73	100%	0.584
Widow/widower	15	65.2	8	34.8	23	1005	
in the process of of hypertension							
<1 year	3	33.3	6	66.7	9	1005	0.010
1-5 years	13	59.1	9	40.9	22	100	
>5 years	51	78.5	14	21.5	65	100	
Smoking history							
Never	52	67.5	25	32.5	77	100	0.332
Ever	15	78.9	4	21.1	19	100	
Complications							
Yes	24	57.1	18	42.9	42	100	0.017
No	43	79.6	11	20.4	54	100	

Multivariate Analysis

Based on the outcome of multiple logistic regression analysis, the variable by the greatest influence in increasing the likelihood of *self-management* among elderly people by hypertension is income, by an OR value of 7.082 (p=0.005). This have that elderly people by high incomes are seven times more likely to improve their self-management than elderly people by low incomes. Conversely, the age variable has an OR = 0.018 (p=0.004), that means that advanced age substantially reduces the likelihood of good *self-management*.

Table 3.
Outcome of Multiple Logistic Regression Analysis of Factors Associated by Self-Management in Elderly Hypertensive Patients

Variable	B	p-value	OR	95% CI	
				Lower Bound	Upper Limit
Age	-3,993	0.004	0.018	0.001	0.318
Occupation	-1,091	0.003	0.336	0.162	0.698
Income	1,958	0.005	7.082	1.806	27.769
Education	-0.035	0.914	0.966	0.510	1.830
in the process of of hypertension	-1.253	0.013	0.286	0.106	0.774
Complications	-1.771	0.006	0.170	0.048	0.604

DISCUSSION

Connection among Gender and *Self-Management*

The outcome of the study based on Table 2 show that there is no substantial connection among gender and self-management. This outcome differs by the study by Abza et al. (2024), that reported that gender influences self-care compliance in hypertensive patients. However, this outcome is in line by the report by (Fitriani et al., 2024) in Jayapura City, that also have that gender is not a major determinant of hypertension self-management, so educational interventions and health support should be did have equally devoid of distinguishing gender.

The connection among Age and *Self-Management*

The outcome of the study based on Table 2 show that there is a substantial connection among age and self-management. by increasing age, physiological, cognitive, and psychological changes occur that can affect self-care behaviors, such as regular medication intake, diet management, and physical activity (Jung et al., 2023). This outcome is in line by research conducted by (Zhang et al., 2020) in China, that have that age is an crucial factor in influencing self-management behavior in elderly patients by hypertension. Research (Bakar et al., 2024) in Indonesia have that the connection among age and self-management is not statistically substantial, indicating that age is not the only determining factor but interacts by other psychosocial factors.

Connection among Employment and *Self-Management*

The outcome of the study based on Table 2 show that there is a substantial connection among employment and self-management. Patients by permanent jobs or jobs by controlled workloads are usually more disciplined in monitoring their own blood pressure, taking medication on schedule, and performing recommended physical activities than patients who have temporary jobs or jobs that require heavy physical activity (Abza et al., 2024). This outcome is in line by research conducted in Addis Ababa, Ethiopia, that have that employment or employment status is substantially related to self-management practices in hypertensive patients (Sahile et al., 2023).

The connection among Income and *Self-Management*

The outcome of the study based on Table 2 show that there is a substantial connection among income and self-management. According to (Wondmieneh et al., 2021), people by higher income stages tend to be more disciplined in measuring their blood pressure, taking medication on time, and performing physical activities recommended by health workers. This outcome is in line by a study conducted in Nanjing, China (Qin et al., 2022), that reported that higher socioeconomic status is associated by patients' ability to control hypertension, partly through better access to resources, health information, and social support.

The connection among Education and *Self-Management*

The outcome of the study based on Table 2 show that there is a substantial connection among education and self-management. Patients by higher education tend to exhibit better self-care behaviors—including medication adherence, diet management, and regular blood pressure monitoring (Azmiardi et al., 2023). These outcomes are consistent by previous demographic studies that found that education stage is an crucial predictor of self-management behavior in hypertensive patients (Sinaga et al., 2025).

The connection among Marital Status and *Self-Management*

The outcome of the study based on Table 2 show that there is no substantial connection among marital status and self-management. This outcome differs by the study by Sarfika et al. (2023), that showed a connection among marital status and self-care practices among hypertensive patients, where married patients tended to be more consistent in practicing self-management than single or divorced patients. These outcomes are in line by a study in rural Kenya by (Schwarz et al., 2024),

that reported that marital status had no substantial connection by the self-care behavior of patients by hypertension or type 2 diabetes.

Connection among in the process of of Hypertension and *Self-Management*

Table 2 have that there is a substantial connection among the in the process of of hypertension and self-management. Older adults who have lived longer by hypertension tend to have more experience in recognizing symptoms and managing a healthy lifestyle, thus demonstrating better self-management behaviors, including medication adherence, diet management, and regular blood pressure monitoring (Guo et al., 2022). This outcome is in line by a study in Indonesia that found that patients by a in the process of of hypertension ≥ 5 years had higher self-care behavior scores than patients by a shorter in the process of, indicating that long experience by the disease can improve self-management skills (Azmiardi et al., 2023).

Connection among Smoking History and *Self-Management*

Table 2 have that there is no substantial connection among smoking history and self-management. Based on Social Cognitive Theory (Bandura, 2004), health behaviors such as *self-management* are the result of interactions among personal, behavioral, and environmental factors. A social environment that is permissive of smoking can weaken the motivation of hypertensive patients to exercise self-control, thereby rendering the connection among smoking history and *self-management* insubstantial. The outcome of this study are in line by the outcomes (Kunutsor et al., 2025) that show that the connection among smoking history and blood pressure is not always substantial when smoking status is measured based on *self-reported smoking*. This indicates that the variable of smoking history needs to be measured more objectively to obtain an accurate picture of *self-management* behavior in hypertensive patients.

Connection among Complications and *Self-Management*

Table 2 have that there is a substantial connection among complications and self-management. This outcome is in line by research by (Pahria et al., 2022), that reported that the presence of complications can affect self-management behavior in hypertensive patients. This is because patients by complications often experience physical limitations, fatigue, or dependence on medication, that makes them less able to perform self-care activities consistently.

CONCLUSION

This study have that there is a substantial connection among age, occupation, income, education, in the process of of hypertension, and complications by the stage of self-management in elderly hypertensive patients at the Gabus District Health Center. Income is the most dominant variable affecting self-management ability, whilst advanced age and the presence of complications are proven to reduce the likelihood of good self-management.

The outcome of this study confirm that self-management in elderly hypertensive patients is influenced by various demographic factors and the clinical situation of the patient. Therefore, health workers, especially nurses, are expected to play an active role in having continuous health education, conducting routine monitoring, and having psychosocial support to elderly patients preventing complications, and improving their standard of life.

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