The Relationship Between Self-Care Management and the Level of Blood Pressure Control in Elderly with Hypertension in the Work Area of Community Health Center X

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ABSTRACT

Background: Hypertension is a non-communicable disease that often occurs without symptoms and can cause serious complications in the elderly if not treated properly. One effort to keep blood pressure under control is through the implementation of effective self-care management. This study aims to determine the relationship between self-care management and the level of blood pressure control in elderly people with hypertension in the working area of Community Health Center X. This study used a descriptive correlational design with a cross-sectional approach. A total of 65 respondents who had undergone routine check-ups during the last three months were selected using a total sampling technique. Data were collected using the Hypertension Self-Management Behavior Questionnaire (HSMBQ) and observation sheets to assess the level of blood pressure control. The results showed that most elderly participants had good self-care management, with 36 people (92.3%) having controlled blood pressure. Statistical analysis using the Chi-Square test produced a p-value of 0.001 (α <0.05), which indicated a significant relationship between self-care management and blood pressure control. The conclusion of this study is that there is a significant relationship between self-care management and the level of blood pressure control in elderly patients with hypertension. Therefore, increasing education and motivation for the elderly in managing hypertension independently is very important to prevent further complications.

Keywords: hypertension, elderly, self-care management, blood pressure, control

INTRODUCTION

The decline in physiological function due to the aging process makes the elderly more susceptible to various physical complaints and other chronic diseases (Fenty et al., 2023). According to the WHO, elderly people are classified into several categories: those aged 45-59 are considered middle-aged, those aged 60-70 are categorized as elderly, those aged 75-90 are considered old, and those aged 90 and over are considered very old (Dayaningsih et al., 2021).

Data from the World Health Organization (WHO, 2024) predicts that one in six

people worldwide will be aged 60 or older by 2030. The global elderly population reached 1 billion in 2020, projected to increase to 1.4 billion in 2030 and 2.1 billion by 2050. The World Health Organization (WHO, 2024) also said that the prevalence of elderly in the Southeast Asia region will increase from 12.2% in 2024 to 22.9% in 2050. According to (Ministry of Health of the Republic of Indonesia, 2024) in 2023 showed that around 29 million people are classified as elderly and according to the deputy minister of health, prof. dr. Dante Saksono Harbuwono estimates that it will increase by around 50 million people in 2045. According to the Central Statistics Agency (BPS) of DKI Jakarta Province, (2022) the number of elderly people is more than 1 million people or around 10.13% of the total population. If seen based on the number, East Jakarta is the area with the largest elderly population of around 300.76 thousand people or 27.91% of the total elderly in DKI Jakarta (Muhammad Fuad Iqbal, 2025).

Hypertension in the elderly is a serious problem because it is associated with changes in cardiovascular function, including decreased blood vessel elasticity and disorders of vital organs such as the heart, kidneys, and brain (Prianahatin et al., 2023). This condition often occurs without obvious symptoms, thus being called "the silent killer" (M. T. Sari & Putri, 2023). Therefore, regular blood pressure monitoring is crucial to maintain blood pressure control and reduce the risk of complications such as heart disease, stroke, and kidney dysfunction (Ruqiah et al., 2025).

Self-care management skills in hypertensive patients can be determined by the individual's ability to perform self-care to control their health to prevent complications and maintain blood pressure within normal limits (Stefan Mendrofa et al., 2025). According to the American Heart Association (AHA) recommendations, self-management of hypertension is carried out by modifying lifestyle which includes limiting salt intake, a balanced diet, increasing physical activity, reducing smoking and alcohol consumption, and avoiding exposure to air pollution and extreme temperatures (Unger et al., 2020).

Fadilah et al.'s (2023) cross-sectional study examined the correlation between self-management and blood pressure in hypertensive patients with 208 respondents through simple random sampling. Data collection involved completing a self-management questionnaire. Spearman rank statistical analysis showed no significant relationship between self-care management practices and systolic ($p=0.800$) and diastolic ($p=0.988$) blood pressure values. This study concluded that self-care management behaviors are not directly effective in controlling blood pressure in hypertensive patients.

Another study by Juniadi et al.'s (2024) examined the relationship between self-care management and blood pressure in hypertensive elderly patients using a cross-sectional study involving 60 respondents using total sampling. Data collection included a self-care questionnaire and blood pressure measurements. The results of the study using Spearman's rho analysis showed a positive correlation between self-care management and systolic (r=0.802) and diastolic (r=0.494) blood pressure values with a p-value of 0.000. The conclusion of this study is that the better the self-care management, the better the blood pressure in the elderly.

Based on a preliminary study conducted by researchers in the X Health Center Working Area, there were 65 elderly with hypertension who had routine check-ups in March 2025. Based on interviews with the doctor in charge, there were still hypertensive patients who did not have routine check-ups, and interviews with 5 elderly with hypertension found that most of the elderly complained of dizziness. 2 out of 5 elderly said they often forgot to take their antihypertensive medication, and rarely exercised but controlled their diet. Meanwhile, 2 elderly said they regularly took their medication because their family members reminded them but rarely exercised and liked to eat fatty and salty foods. And 1 took his antihypertensive medication regularly and had routine check-ups according to the schedule from the health service. Based on this phenomenon, the researcher is interested in conducting a study entitled "The relationship between self-care management and the level of blood pressure control in elderly hypertensive patients in the work area of Community Health Center X".

The general objective of this study was to identify the relationship between self-care management and the level of blood pressure control in elderly hypertensive patients in the working area of Community Health Center X.

MATERIALS AND METHODS

This study used a quantitative design with a correlational analytical approach to examine the relationship between self-care management and blood pressure control levels in elderly people with hypertension. The study population was 65 elderly people who regularly checked their hypertension at the Matraman Community Health Center, East Jakarta, in March 2025. The sampling technique used was total sampling, so the entire population was sampled. The study was conducted from May to July 2025. Data analysis was performed bivariately using the chi-square test because both variables were ordinal. Results were considered significant if the p-value ≤ 0.05.

RESULTS

Based on table 1 The majority of respondents in this study were female (61.5%) and aged between 60 and 70 years (58.5%). Most of them had completed secondary education (53.8%) and were unemployed (86.2%). In terms of medical history, the majority had been diagnosed with hypertension for 1–5 years (55.4%).

Table 1: Frequency Distribution of Respondents

Characteristic	Frequency (f)	Percentage (%)
Gender		
Male	25	38.5
Female	40	61.5
Age		
60–70 years	38	58.5
>71 years	27	41.5
Last Education Level		
Primary Education	16	24.6
Secondary Education	35	53.8
Higher Education	14	21.5
Employment Status		
Employed	9	13.8
Unemployed	56	86.2
History of Hypertension		
1–5 years	36	55.4
>6 years	29	44.6
Total	65	100.0

Table 2. The majority of respondents in this study demonstrated good self-care management, with 60.0% (39 out of 65) falling into this category. This indicates that most elderly individuals with hypertension in the study were able to manage their condition effectively through appropriate self-care practices.

Table 2: Frequency Distribution of Self-Care Management in Elderly with Hypertension

Category	Frequency (f)	Percentage (%)	Mean	Standard Deviation
Poor	2	3.1%		
Fair	24	36.9%	**2.57**	**0.558**
Good	39	60.0%		
Total	**65**	**100.0%**		

Table 3 The table above presents the distribution of respondents based on their level of blood pressure control. It shows that out of 65 respondents, 42 individuals (64.6%) had controlled blood pressure, while 23 individuals (35.4%) had uncontrolled blood pressure. The mean value is 1.35 with a standard deviation of 0.482, indicating that the average respondent tends to have their blood pressure under control. These results suggest that most elderly patients with hypertension in this study were able to maintain

their blood pressure within normal limits, reflecting effective hypertension management in the majority of the population.

Table 3: Frequency Distribution of Blood Pressure Control Levels in Hypertensive

Category	Frequency (f)	Percentage (%)	Mean	Standard Deviation
Controlled	42	64.6%		
Uncontrolled	23	35.4%	**1.35**	**0.482**
Total	**65**	**100.0%**		

Table 4 The table shows a significant relationship between self-care management and blood pressure control in elderly patients with hypertension. Respondents with good self-care had the highest proportion of controlled blood pressure (92.3%), while those with fair or poor self-care were more likely to have uncontrolled blood pressure. The Odds Ratio (OR) of 0.027 and a P Value of 0.001 indicate a statistically significant association. This suggests that better self-care is strongly linked to improved blood pressure control.

Table 4: The Relationship Between Self-Care and Blood Pressure Control in Elderly with Hypertension"

Self-Care Management	Controlled	%	Uncontrolled	%	Total	%	OR Value	P Value
Poor	0	0.0%	2	100.0%	2	100.0%		
Fair	6	25.0%	18	75.0%	24	100.0%	0.027	0.001
Good	36	92.3%	3	7.7%	39	100.0%		
Total	**42**	**64.6%**	**23**	**35.4%**	**65**	**100.0%**		

DISCUSSION

The results of this study involving 65 elderly respondents with hypertension in the working area of Matraman Public Health Center, East Jakarta, show several trends that align with or differ from previous studies. More than half of the respondents were female (61.5%), suggesting that women are more vulnerable to hypertension, particularly due to hormonal changes after menopause. This finding is consistent with Alkautsar & Kartinah (2023), who reported that 73.4% of elderly hypertensive patients were female, linking the decline in estrogen levels to impaired vascular health. Women also tend to be more attentive to treatment and routine health control; however, Sari et al. (2023) found no significant relationship between gender and blood pressure management ($p = 0.306$), indicating that successful management depends more on behavior and lifestyle than gender alone. In terms of age, 58.5% of respondents were between 60 and 70 years old, highlighting the vulnerability of the elderly to hypertension due to degenerative changes such as arterial stiffness and reduced elasticity. This aligns with Alkautsar & Kartinah (2023). However, Sari et al. (2023) reported no significant correlation between age and

hypertension control ($p = 0.891$). It is assumed that with proper education and family support, elderly individuals can still perform effective self-care despite aging.

Regarding education level**,** 53.8% of respondents had a secondary education background. Education plays a crucial role in self-care understanding, medication adherence, and lifestyle adjustments. Sari et al. (2023) found a significant relationship between education level and hypertension management ($p = 0.000$), while Sonia et al. (2023) noted that not all individuals with lower education levels demonstrated good hypertension self-management, suggesting that individual awareness also influences outcomes. The majority of respondents (86.2%) were unemployed**,** which may contribute to reduced physical activity and increased psychological stress, both of which can worsen blood pressure control. This is in line with Alkautsar & Kartinah (2023)**,** who found that a large proportion of respondents were housewives or not working. Therefore, community-based activities such as elderly exercise or regular health education are recommended to keep elderly individuals active physically and socially. Finally, 55.4% of respondents had been living with hypertension for 1–5 years, indicating a chronic condition. While chronicity implies experience in managing the disease, it does not guarantee consistent self-care. Sonia et al. (2023) highlighted the issue of treatment fatigue, which can reduce medication adherence and lifestyle compliance over time. Hence, continued education and family support are essential to maintain motivation and effective self-care behavior among elderly hypertensive patients.

The univariate analysis in this study involved 65 elderly individuals with hypertension who routinely attended check-ups at the Matraman Public Health Center, East Jakarta. Based on Table 2, the findings show that more than half of the respondents had good self-care management (39 respondents or 60.0%)**,** less than half had moderate self-care management (24 respondents or 36.9%)**,** and a small portion had poor self-care management (2 respondents or 3.1%)**.** These results indicate that the majority of respondents demonstrated an optimal ability to manage their own care. Those in the "moderate" category likely faced challenges with consistency in self-care routines, such as maintaining dietary habits and engaging with healthcare providers. Meanwhile, respondents with "poor" self-care management showed greater difficulty in managing their hypertension, which may be attributed to irregular eating patterns, lack of physical activity, and low awareness of the importance of keeping blood pressure under control. This study supports the findings of Alkautsar & Kartinah (2023)**,** who reported that

elderly individuals with good self-care management generally had controlled blood pressure. In contrast, those with poor self-care faced difficulties, particularly in maintaining physical activity and adhering to medication regimens. Similarly, Sonia et al. (2023) found that the majority of respondents (62.9%, or 83 individuals) had moderate self-care abilities, indicating limited consistency in self-care practices and low engagement in health monitoring behaviors such as dietary regulation, blood pressure monitoring, and communication with healthcare professionals.

This study collected 65 samples of elderly people with hypertension from the working area of Community Health Center X. The analysis showed that more than half of the respondents had a controlled level of blood pressure, namely 42 individuals (64.6%). This finding indicates that the majority of elderly people have managed their hypertension quite effectively, as demonstrated by stable blood pressure over the past three months. This stability reflects regularity in maintaining diet, physical activity, regular blood pressure monitoring, and adherence to antihypertensive medication. These results align with research conducted by Alkautsar & Kartinah (2023) in the Kartasura Community Health Center area, which also showed that the majority of respondents (51.1%) had controlled blood pressure. This confirms that although elderly people are susceptible to increased blood pressure due to aging, with proper management, blood pressure can still be optimally controlled.

The relationship between self-care management and blood pressure control among elderly patients with hypertension at Public Health Center X was analyzed using a 3x2 contingency table. Based on the statistical test in Table 5.4, some expected values were found to be less than 5, violating the assumption for the chi-square test. Therefore, the likelihood ratio was used, yielding a p-value of 0.001 (<0.05)**,** indicating a significant relationship between self-care management and blood pressure control. The odds ratio (OR) was calculated at 0.027**,** which suggests that elderly individuals with good self-care management are significantly less likely to experience uncontrolled blood pressure. Good self-care management is associated with better blood pressure control among elderly individuals with hypertension. Conversely, poor self-care management is linked to uncontrolled blood pressure, largely due to inconsistencies in dietary regulation, lack of routine physical activity, poor medication adherence, infrequent use of health services, and inadequate monitoring. These behaviors have a significant impact on blood pressure stability (Alkautsar & Kartinah, 2023).

These findings are consistent with a study by Sonia et al. (2023), which also reported a statistically significant relationship between self-care management and blood pressure control in hypertensive patients at Panti Rini Hospital, with a p-value of 0.000. The study emphasized that elderly individuals capable of performing good self-care can reduce the severity of hypertension and prevent complications. However, the duration of having hypertension may negatively affect blood pressure control due to treatment fatigue, leading to decreased medication adherence and lifestyle management.

Further support is provided by Juniadi et al. (2024), who conducted a study using Spearman rho correlation at UPTD Ajung Health Center, Jember. Their findings revealed a strong negative correlation between self-care management and systolic blood pressure ($r = -0.802$) and a moderate negative correlation with diastolic pressure ($r = -0.494$), both with p-values of 0.000, reinforcing that self-care management is a key factor in controlling hypertension among the elderly.

The researchers assume that increasing awareness and consistency in self-care practices can significantly improve blood pressure control. However, this study also found a few cases where respondents with good self-care management still had uncontrolled blood pressure. This discrepancy may be explained by differences in healthcare service settings. Elderly patients enrolled in the Prolanis Clinic receive more comprehensive support including physical activity programs, health education, and regular monitoring compared to those visiting the general elderly clinic, which primarily provides episodic care during visits. This suggests that the healthcare delivery system acts as an external factor that influences the effectiveness of self-care management. This conclusion is supported by Aliffatunisa et al. (2021), who reported that social support plays a crucial role in helping elderly patients manage hypertension, with a correlation of $r = 0.598$ ($p = 0.000$). Thus, support from family and healthcare providers can enhance the elderly's awareness and consistency in practicing self-care management, ultimately leading to better blood pressure outcomes. Recent research suggests that self-care management plays a crucial role in controlling blood pressure in older adults with hypertension. A study by Kim et al. (2024) in South Korea found that increased involvement of older adults in self-care—such as medication adherence, a low-salt diet, and regular physical activity—was significantly correlated with lower systolic and diastolic blood pressure. Similar findings were reported by Ahmed et al. (2025) in Egypt, who confirmed that family-based health education can improve older adults' ability to recognize hypertension

symptoms and make appropriate self-care decisions, resulting in better blood pressure control. Meanwhile, research by Putri and Rahmawati (2025) in Indonesia showed that older adults with high levels of health literacy and good social support were better able to maintain consistent healthy lifestyle habits, such as reducing salt intake and self-monitoring their blood pressure, which ultimately significantly increased the proportion of older adults with controlled blood pressure. These three studies confirm that a sustainable and contextual approach to improving self-care management can be a key strategy in controlling hypertension in the elderly population.

Recent research supports the importance of self-care management in controlling blood pressure in hypertensive elderly. Kim et al. (2024) demonstrated that good self-care behaviors were significantly associated with better blood pressure control. This finding is supported by Ahmed et al. (2025), who reported improved blood pressure control after a family-based educational intervention. In Indonesia, Putri and Rahmawati (2025) found that health literacy and family support contributed to successful self-care in elderly individuals. Similarly, Santos et al. (2024) reported that self-care education programs can significantly lower blood pressure. Meanwhile, a study by Wijayanti and Sari (2025) confirmed that self-care behaviors such as a low-salt diet and regular check-ups are highly correlated with controlled blood pressure.

CONCLUSIONS

The results showed that the majority of respondents were female, aged 60–70 years, had secondary education, were unemployed, and had a history of hypertension for 1–5 years. More than half of the respondents had good self-care management and a controlled level of blood pressure control. Statistical tests showed a significant relationship between self-care management and the level of blood pressure control in elderly people with hypertension in the Matraman Community Health Center Working Area, East Jakarta (p-value = 0.001).

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