
THE RELATIONSHIP BETWEEN SELF CARE MANAGEMENT AND BLOOD PRESSURE AMONG HYPERTENSIVE PATIENTS AT SEI LANGKAI PUBLIC HEALTH CENTER, BATAM CITY, IN 2025

Amanda Ocktarissya Sofwan¹, Nurhafizah Nasution² Cica Maria³

^{1,2,3}Nursing Study Program, Faculty of Health Sciences, University of Batam
Riau Islands, Batam 29464, Indonesia.

*Corresponding Author: Amanda Ocktarissya Sofwan
Email: Amandaocktarissya@gmail.com

Abstract

Hypertension is a clinical condition characterized by a persistent blood pressure of $\geq 130/80$ mmHg. It is classified as a non-communicable disease with a high prevalence and contributes significantly to morbidity and mortality rates. Based on a preliminary survey conducted by the researcher at Sei Langkai Public Health Center in 2024, there were 19,796 recorded hypertension cases. This study aimed to determine the relationship between self-care management and blood pressure among patients with hypertension at Sei Langkai Public Health Center, Batam City, in 2025. This research employed a quantitative design with a cross-sectional approach. The population consisted of 115 patients with hypertension recorded in April, with a sample of 54 respondents selected using purposive sampling. Data on self-care management were collected using the H-SCALE questionnaire, while blood pressure data were obtained from medical records through observation sheets. Data were analyzed using the Chi-Square statistical test. The univariate analysis showed that more than half of the respondents (61.1%) had poor self care management, and most respondents (81.5%) had blood pressure classified as stage 2 hypertension. The bivariate analysis revealed a significant relationship between self-care management and blood pressure p-value = 0.009. It is recommended that healthcare professionals enhance education regarding self care management for patients with hypertension, and that patients consistently implement self care practices in daily life by adhering to prescribed medications, maintaining a healthy diet rich in fruits and vegetables, and engaging in regular physical activity to help stabilize blood pressure.

Keywords: Self Care Management, Blood Pressure, Hypertension

Introduction

Hypertension, commonly referred to as high blood pressure, is defined as a sustained increase in arterial blood pressure, characterized by a systolic pressure of ≥ 130 mmHg and a diastolic pressure of ≥ 80 mmHg (Arikah T, 2020).

The World Health Organization (WHO) estimates that 1.28 billion adults aged 30 to 79 years are living with hypertension. Among this population, approximately 46% of adults with hypertension are unaware of their condition. The global target for 2010–2030 is to reduce the prevalence of noncommunicable diseases, including hypertension, by 33% (WHO, 2023).

Findings from the Indonesia Health Survey (SKI) 2023 indicate a decline in the prevalence of hypertension among individuals aged 18 years and older based on blood pressure measurements. In both the productive age group (18–59 years) and the older age group (>60 years), there remains a notable gap between the number of respondents diagnosed with hypertension and those receiving treatment or follow-up care at health facilities (Kemenkes, 2024).

According to the 2023 Health Profile of Riau Islands Province, 385,361 individuals aged over 15 years were reported to have hypertension. The data show that hypertension service coverage in the province is generally adequate but has yet to reach 100%. This suggests that a proportion of the population still lacks access to care or does not seek clinical services (Dinkes Kepri, 2023).

According to data collected by the Batam City Health Office in January 2024, hypertension ranked first among the ten most prevalent diseases, with 9,304 reported cases out of a total of 185,001 cases documented across all community health centers (puskesmas) in Batam City.

Three community health centers recorded the highest number of cases: Sei Langkai Health Center (19,796 cases), Baloi Permai Health Center (16,697 cases), and Sei Pancur Health Center (14,413 cases) (Dinas Kesehatan Kota Batam, 2024).

The high number of hypertension cases is attributed to the presence of various risk factors. These include non-modifiable risk factors such as genetics, sex, and age, as well as modifiable factors such as obesity, insufficient physical activity, smoking, stress, and the consumption of alcohol and salt (Nadir, 2019). One of the most effective approaches to controlling blood pressure in individuals with hypertension is adopting healthier lifestyle behaviors and attending regular medical check-ups (Sarfika, 2024). Lifestyle modification constitutes a key component of self-care management among hypertensive patients, including maintaining a healthy diet and engaging in regular exercise (Sagala, 2025).

Self-care management aims to assess an individual's ability to engage in health-promoting behaviors, such as adhering to dietary recommendations, performing physical activity, managing stress, complying with medication regimens, and monitoring signs and symptoms. Despite this, hypertension remains associated with high morbidity and mortality rates due to limited knowledge of self-care practices in many communities. Self-care plays a crucial role as it is directly linked to the success of adopting a healthy lifestyle through positive beliefs and behaviors (Suprayitno, E., 2019).

Effective self-care management in individuals with hypertension is essential to prevent health deterioration caused by recurrent episodes of elevated blood pressure. Self-care management involves the appropriate use of prescribed medications, adherence to dietary and

physical activity recommendations, personal health maintenance, and the regulation of emotions associated with the condition being treated. Orem posits that every individual possesses a natural ability for self-care, and that nursing care should focus on how these inherent capabilities influence the patient's overall health outcomes (Zakiya, 2022).

Findings from previous studies indicate that self-care management is significantly associated with blood pressure control among patients with hypertension. A study conducted by Sriwana (2025) at the Gerunggang Health Center reported a highly significant relationship between self-care behaviors such as medication adherence, physical activity, and smoking habits and blood pressure regulation in hypertensive patients ($p = 0.000$). Similar results were reported by Juniadi (2024) at the Ajung Community Health Center in Jember, which demonstrated a strong negative correlation between the level of self-care and blood pressure values.

Based on a preliminary study conducted by the researcher at the Sei Langkai

Community Health Center through interviews with healthcare providers, it was found that most individuals diagnosed with hypertension do not routinely monitor their blood pressure. The researcher also interviewed ten hypertensive patients, and the results showed that six respondents reported regularly taking antihypertensive medications, while the remaining four did not take their medications or had not adhered to the recommended regimen during the past week. Furthermore, four respondents reported not maintaining a proper diet, which resulted in weight gain, and three respondents stated that they did not engage in regular physical activity. Two respondents also reported having a smoking habit. All respondents stated that they did not consume alcohol.

Based on the aforementioned background, the researcher intends to conduct a study entitled "The Relationship Between Self-Care Management and Blood Pressure Among Hypertensive Patients at Sei Langkai Community Health Center in 2025."

Research Methods

This study was conducted at the Sei Langkai Community Health Center in Batam City in 2025, from July 28 to August 21, 2025. The research employed a quantitative design with a cross-sectional approach. The study population consisted of 115 hypertensive patients recorded in April. The sample was selected using a purposive sampling technique, and the sample size was determined using the Slovin formula, resulting in a total of 54 respondents. The independent variable in this study was self-care management, while the

dependent variable was blood pressure.

Data collection instruments included the Hypertension Self-Care Activity Level Effects (H-SCALE) questionnaire and medical record data obtained through observation sheets. Data analysis consisted of univariate analysis to determine the frequency distribution of the independent and dependent variables, and bivariate analysis to examine the relationship between the two variables. Data processing was carried out using SPSS version 26 with the chi-square test.

Research Results

The results of the study entitled "The Relationship Between Self-Care Management and Blood Pressure Among Hypertensive Patients at Sei Langkai Community Health Center,

Batam City, in 2025” showed that the frequency distribution of respondents was as follows:

- **Univariate Analysis**

The results of the univariate analysis are presented in frequency tables, providing a comprehensive overview of self-care management and blood pressure variables:

Table 4.1
Frequency Distribution of Self-Care Management Among Hypertensive Patients at Sei Langkai Community Health Center, Batam City, 2025

<i>Self Care Management</i>	Frequency	Percentage
Good	21	38.9%
Poor	33	61.1%
Total	54	100.0%

Based on Table 4.1, of the 54 respondents with hypertension, more than half demonstrated poor self-care management, totaling 33 respondents (61.1%), while 21 respondents (38.9%) had good self-care management.

Table 4.2
Frequency Distribution of Blood Pressure Among Hypertensive Patients at Sei Langkai Community Health Center, Batam City, 2025

Blood Pressure	Frequency	Percentage
Stage 1 Hypertension	10	18.5%
Stage 2 Hypertension	44	81.5%
Total	54	100.0%

Based on Table 4.2, it can be seen that most hypertensive patients were categorized as having stage 2 hypertension, totaling 44 respondents (81.5%), while 10 respondents (18.5%) were classified as having stage 1 hypertension.

- **Bivariate Analysis**

The bivariate analysis in this study was performed to determine the relationship between self-care management and blood pressure among hypertensive patients at the Sei Langkai Community Health Center, Batam City, in 2025.

Table 4.3
Relationship Between Self-Care Management and Blood Pressure Among Hypertensive Patients at Sei Langkai Community Health Center, Batam City, 2025

<i>Self Care Management</i>	Blood Pressure				Total	P Value
	Stage 1 Hypertension		Stage 2 Hypertension			
	f	%	f	%		
Good	8	38.1	13	61.9	21	100
Poor	2	6.1	31	93.9	33	100
Total	10	18.5	44	81.5	54	100

Based on Table 4.3, among the 54 respondents, those with good self-care management showed that 8 respondents (38.1%) were classified as having stage 1 hypertension, while 13 respondents (61.9%) were categorized as having stage 2 hypertension. Meanwhile,

respondents with poor self-care management included 2 respondents (6.1%) with stage 1 hypertension and 31 respondents (93.9%) with stage 2 hypertension.

The chi-square statistical test yielded a p-value of 0.009, indicating that $p < 0.05$. This result demonstrates that the null hypothesis is rejected and the alternative hypothesis is accepted, meaning there is a significant relationship between self-care management and blood pressure among hypertensive patients at the Sei Langkai Community Health Center, Batam City, in 2025.

Discussion

Research Findings on Self-Care Management Among Hypertensive Patients

The findings of this study indicate that the majority of hypertensive patients at the Sei Langkai Community Health Center exhibited poor self-care management (57.4%), suggesting that their ability to manage blood pressure effectively remains inadequate. The weakest components were dietary behavior and physical activity, while medication adherence was relatively good. The low implementation of healthy dietary practices was largely attributed to habitual consumption of high-sodium foods and limited understanding of nutritional requirements. Meanwhile, inadequate physical activity was associated with a lack of awareness regarding the benefits of exercise in controlling blood pressure.

In terms of medication adherence, approximately 55.6% of respondents did not take their antihypertensive medications regularly, which can hinder optimal blood pressure control. This aligns with the statement of the Indonesian Kemenkes (2024), which emphasizes that medication adherence plays a crucial role in hypertension management. Moreover, efforts to maintain an ideal body weight were still insufficient, as reflected in the frequent consumption of fast food and the lack of routine weight monitoring. Rasdiyanah (2022) reported that weight reduction of approximately 1–5 kg can decrease blood pressure by 1–5 mmHg through dietary

adjustments and increased physical activity.

These findings are consistent with studies by Rantedontok (2024) and Warren-Findlow (2013), which revealed that hypertensive patients are generally more adherent to medication use compared to non-pharmacological management such as diet and exercise. Sriwana (2025) further emphasized that physical activity, medication adherence, and smoking habits significantly influence blood pressure control.

Overall, the low level of self-care management can be attributed to a combination of internal factors such as knowledge, motivation, age, and educational background and external factors such as family support, access to healthcare services, and environmental conditions. These findings are in line with Orem's self-care theory, which highlights that successful self-care depends on an individual's ability to meet self-care demands and the availability of supportive environmental resources.

Therefore, enhanced education and guidance from healthcare professionals are required to strengthen self-care behaviors among hypertensive patients, particularly in the areas of dietary management and physical activity. Additionally, involving family support is essential to achieve better blood pressure control and reduce the risk of complications.

Blood Pressure Findings Among Hypertensive Patients

The findings of this study indicate that most respondents were classified as having stage 2 hypertension (81.5%), suggesting that blood pressure control among hypertensive patients remains suboptimal. According to the American Heart Association (American Heart Association, 2017), stage 2 hypertension carries a significantly elevated risk of cardiovascular complications, including stroke, coronary heart disease, and kidney failure.

The high proportion of individuals with stage 2 hypertension is presumed to be influenced by several factors, such as older age, longer duration of disease, stress, excessive salt intake, lack of physical activity, and genetic as well as environmental factors that do not support healthy lifestyle practices. These findings are consistent with the study by Sari (2023), which reported that most hypertensive patients in primary health care settings fell into the stage 2 category due to inadequate and irregular blood pressure monitoring.

In terms of age, the majority of respondents were within the 46–55 age group (38.9%), indicating that the risk of hypertension increases with age as a result of decreased vascular elasticity and changes in cardiac function. This finding aligns with Sari (2023), who reported that most hypertensive patients were over 40

Relationship Between Self-Care Management and Blood Pressure in Hypertensive Patients

The statistical analysis using the Chi-square test showed a p-value of 0.009 ($p < 0.05$), indicating a significant relationship between self-care management and blood pressure among hypertensive patients at the Sei Langkai Community Health Center, Batam City. This finding suggests that better self-care management is associated with improved

years old.

Regarding sex, most respondents were female (68.5%), which is consistent with the findings of Rosadi and Hildawati (2022). They explained that postmenopausal women are more susceptible to hypertension because of an increased pressor response mediated by the Renin–Angiotensin–Aldosterone System (RAAS) following a decline in estrogen and progesterone levels.

Additionally, the majority of respondents had a senior high school–level education or equivalent (51.9%), suggesting that educational attainment influences an individual’s ability to understand and adopt healthy lifestyle behaviors. This observation is supported by Ovita (2023) and Simbolon (2020), who reported that higher education is associated with better knowledge and awareness regarding health management, including blood pressure control.

Overall, the high prevalence of stage 2 hypertension in this study reflects inadequate adherence to antihypertensive medications, low compliance with a low-salt diet, and irregular monitoring of blood pressure. Therefore, the role of healthcare professionals is crucial in providing education, promoting healthy lifestyles, and encouraging family support to enhance patient adherence to treatment and healthy behaviors, ultimately achieving better blood pressure control.

blood pressure control.

These results are consistent with previous studies by Juniadi (2024), Prakoso (2022), Mufidah (2021), and Isnaini and Lestari (2018), which also identified a significant association between self-care management and blood pressure. Patients with good self-care management tend to be more adherent to antihypertensive medication, maintain a low-salt and low-fat diet, engage in regular physical

activity, and effectively manage stress. Conversely, inadequate self-care management often results in poor blood pressure control.

However, the findings of this study differ from those of Nofenisma (2019) and Martiningsih (2015), who reported no significant relationship between self-care management and blood pressure. These contrasting results may be influenced by other contributing factors such as family support, motivation levels, and patients' perceptions of their illness. When family support is lacking or patients have limited awareness of hypertension risks, effective self-care management may not be achieved even when adequate knowledge is present.

In this study, most respondents demonstrated poor self-care management (61.1%). Their behaviors were suboptimal, as seen in the high proportion of respondents who were non-adherent to medication (55.6%) and did not engage in regular physical activity (82.3%). These

Conclusion

Based on the findings of the study entitled "The Relationship Between Self-Care Management and Blood Pressure Among Hypertensive Patients at Sei Langkai Community Health Center, Batam City, in 2025," the following conclusions can be drawn:

- a. More than half of the hypertensive patients at Sei Langkai Community Health Center in 2025 (61.1%) had

Suggestion

Based on the conclusion above, the author can propose the following suggestions:

a. For Respondents

This study is expected to encourage hypertensive patients to apply self-care management consistently in their daily lives by adhering to prescribed medications, adopting a healthy diet with increased consumption of fruits

findings indicate that the implementation of self-care behaviors in daily life remains limited, resulting in inadequate blood pressure control.

From a physiological perspective, effective self-care practices can reduce cardiac workload and improve blood flow, ultimately lowering both systolic and diastolic blood pressure. This aligns with Orem's Self-Care Theory, which emphasizes that an individual's ability to meet self-care demands significantly influences overall health status.

In conclusion, self-care management plays a crucial role in controlling hypertension. Enhancing patients' self-care abilities can help maintain blood pressure within normal limits and prevent complications. Therefore, healthcare providers should strengthen patient education, motivation, and family support to ensure consistent and comprehensive implementation of self-care behaviors among individuals with hypertension.

- poor self-care management.
- b. The majority of hypertensive patients (81.5%) were classified as having stage 2 hypertension.
- c. There was a significant relationship between self-care management and blood pressure among hypertensive patients, with a p-value of 0.009 ($p < 0.05$).

and vegetables, and engaging in regular light to moderate physical activity to maintain stable blood pressure.

b. For Sei Langkai Public Health Center

The findings of this study are expected to encourage healthcare providers to enhance education on

self-care management for patients with hypertension, emphasizing medication adherence, low-salt dietary practices, physical activity, weight control, and routine blood pressure monitoring to improve patients' consistency in managing their condition.

c. For Batam University

The results of this study are expected to serve as reference material for libraries and as reading

resources for students.

d. For the next researcher

The findings of this study may serve as baseline data and valuable information for future research. Subsequent studies are recommended to be conducted in hospital settings with larger sample sizes and more diverse clinical conditions.

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