A Descriptive Study of Blood Pressure Among Hypertensive Patients with a 3–5 Year History of Antihypertensive Medication Use in the Working Area of Simpang IV Sipin Health Center, Jambi City

Wida Tri Marcelinda[1], Nurhusna[1], Rts Netisa Martawinarti[1], Andi Subandi[1], Putri Irwanti Sari[1]
Study Program of Nursing, Faculty of Medicine and Health Sciences, Jambi University, Jambi City, Indonesia
Correspondence: widatrimarcelinda1@gmail.com

Received : 16 November 2025, Revised : 1 December 2025, Accepted : 10 December 2025

ABSTRACT

Hypertension is a chronic condition characterized by a persistent increase in blood pressure that requires long-term therapy and risk factor control. This study aimed to describe the blood pressure profile of patients with hypertension who had a history of using antihypertensive medication for three to five years in the working area of Puskesmas Simpang IV Sipin, Jambi City. The study employed a quantitative descriptive design with a total sampling technique involving 40 respondents. Data were collected using a respondent characteristic questionnaire, interviews, and blood pressure measurements with a digital sphygmomanometer after participants rested for five minutes. The results showed that the majority of respondents were female (72.5%), had a college education (30%), worked as housewives (60%), and had suffered from hypertension for five years (62.5%). Based on blood pressure measurements, most respondents had systolic blood pressure in the moderate hypertension category (57.5%) and mild hypertension (42.5%). Meanwhile, diastolic blood pressure was predominantly in the mild hypertension category (62.5%), followed by high-normal (20%), normal (10%), and moderate hypertension (7.5%). The findings indicate that a portion of respondents still experienced uncontrolled blood pressure despite long-term antihypertensive medication use. Contributing factors include medication adherence, high-sodium diet, stress, and lack of physical activity. Continuous education, regular monitoring, and lifestyle modification efforts are necessary to achieve optimal blood pressure control.

Keywords: *Hypertension, Blood Pressure, Duration of Hypertension*

INTRODUCTION

Hypertension is a chronic disease characterized by an increase in blood pressure (Islamiaty, Ayu and Manto, 2020). It is defined as a consistent elevation of systolic and diastolic blood pressure above 140/90 mmHg (Suwandewi and Rizani, 2022). Hypertension has become one of the major health problems worldwide, affecting both developed and developing countries. Each year, the incidence of hypertension continues to increase steadily (Chasanah, 2022). Hypertension is one of the diseases that can lead to death, as it is known as a “silent killer.” In most cases, individuals with hypertension do not exhibit noticeable symptoms; however, if left untreated, it may lead to serious complications (Nany Suryani, Noviana, 2025). Blood pressure is a major risk factor for cardiovascular diseases, which are the leading causes of death in Indonesia. Data from the Ministry of Health of the Republic of Indonesia show that blood pressure levels tend to increase in line with lifestyles that are far from clean and healthy living behaviors. In addition, the high cost of hypertension treatment and the limited availability of healthcare facilities and infrastructure further hinder effective blood pressure management (Pratiwi, 2020).

Global data indicate that an estimated 1.28 billion people aged 30 to 79 years worldwide suffer from hypertension, with the majority living in low- and middle-income countries. It is estimated that 46% of adults with hypertension are unaware of their condition, 42% have been diagnosed and are receiving treatment, and only about 1 in 5 adults (21%) with hypertension are able to control their blood pressure effectively (WHO, 2021). In Indonesia, hypertension remains a serious public health challenge. According to the 2018 Basic Health Research (Riskesdas) survey, the prevalence of

hypertension among individuals aged ≥18 years reached 34.1%, with the highest rates observed among the elderly population. These data indicate that one in three adults in Indonesia suffers from hypertension, and most are unaware of their condition. The Ministry of Health of the Republic of Indonesia (2021) reported that only about 36.8% of individuals with hypertension have been diagnosed and receive regular treatment, while the remaining cases are not yet adequately monitored (Kemenkes, 2019). In Jambi Province, the number of people suffering from hypertension continues to increase each year. According to data from the Jambi Provincial Health Profile (2022), hypertension ranks second among the ten most common diseases in the province (Jambi, 2021). In 2018, the prevalence of hypertension cases in Jambi Province was 13.50%. This figure increased to 18.50% in 2019, 23.63% in 2020, and 31.70% in 2021. However, in 2022, the percentage of hypertension cases showed a slight decline to 25.48%. According to data from the Jambi City Health Office, the number of hypertension cases increased to 32,092 in 2023. Among all healthcare facilities in Jambi City, the Simpang IV Sipin Public Health Center recorded the highest number of hypertension cases, with a total of 6,673 cases in the same year.

Hypertension has a significant impact and can even lead to death and disability if not properly managed, primarily due to cardiovascular complications such as stroke, heart attack, heart failure, kidney failure, and others (Nurhayati and Kunci, 2020). The factors contributing to hypertension can be divided into two categories: uncontrollable and controllable factors. Uncontrollable factors include gender, age, family history, and genetic or hereditary influences. Controllable factors include dietary habits, smoking, excessive salt intake, coffee consumption, alcohol consumption, obesity, and lack of physical activity or exercise (Muchtar, R. S. U, Natalia. S, 2022).

Hypertension treatment can be categorized into two approaches, pharmacological and non-pharmacological approaches (Nggule, Sulistianir and Salawali, 2025). Pharmacological treatment involves the administration of medications such as diuretics, beta-blockers, calcium channel blockers, and vasodilators (Zulafiyah, Sukarmin, 2025). Pharmacological treatment may cause various side effects depending on the duration of medication use; for instance, long-term use of certain drugs can impair kidney function. Hypertension management through non-pharmacological approaches includes methods such as physical exercise and relaxation therapy (Septi Ardianty, Monaliza Kasumadewi, 2023).

The level of adherence among hypertensive patients in Indonesia to routine treatment and follow-up visits remains low. The longer a person suffers from hypertension, the greater the likelihood of noncompliance, often due to treatment fatigue and a lack of motivation to continue therapy, which ultimately leads to suboptimal recovery outcomes (Devi Listiana, S. Effendi, 2020). However, most patients still exhibit unstable blood pressure levels despite taking antihypertensive medications for several years. This indicates the need for an evaluation of the blood pressure profile among hypertensive patients with a history of long-term antihypertensive drug use (Maimunah, Rian Tasalim, 2023).

Based on this phenomenon, the researcher was interested in conducting a study entitled "A Descriptive Study of Blood Pressure Among Hypertensive Patients with a 3–5 Year History of Antihypertensive Medication Use in the Working Area of Simpang IV Sipin Health Center, Jambi City." This study is expected to provide information the blood pressure status of hypertensive patients who have undergone long-term antihypertensive therapy and to guide healthcare professionals in implementing appropriate nursing interventions and education.

METHODS

This study employed a quantitative descriptive design. The aimed to describe the blood pressure of hypertensive patients with a history of antihypertensive drug use for three to five years. The study was conducted in the working area of Simpang IV Sipin Health Center, Jambi City, from September to October 2025. The population in this study consisted of all hypertensive patients with a 3–5 year history of antihypertensive medication use who were registered in the working area of Simpang IV Sipin Health Center, Jambi City. Sampling was carried out using a total sampling technique, in which all members

of the population who met the inclusion criteria were included as research subjects, resulting in a total of 40 respondents.

The data used in this study were primary data obtained through direct interviews using observation sheets and blood pressure measurements with a digital sphygmomanometer. Respondents' characteristics—including gender, education, occupation, and duration of hypertension—were collected using a demographic questionnaire, while systolic and diastolic blood pressure data were obtained through direct measurement after respondents rested in a sitting position for at least five minutes. The collected data were checked for completeness and analyzed descriptively using univariate analysis. The results were presented in the form of frequency distribution tables and narrative descriptions illustrating the characteristics of respondents as well as systolic and diastolic blood pressure levels among hypertensive patients with a history of antihypertensive medication use for three to five years.

RESULTS

Based on Table 1, this study involved a total of 40 respondents. The majority of respondents were female, accounting for 29 individuals (72.5%). The highest level of education among respondents was university level, with 12 respondents (30%). Most respondents were housewives, totaling 24 individuals (60%). Furthermore, the duration of hypertension was predominantly five years, as reported by 25 respondents (62.5%).

Table 1. Frequency Distribution of Respondent Characteristics

Characteristics	Frequency (n)	Percentage (%)
Gender		
Male	11	27.5
Female	29	72.5
Education Level		
Elementary School	8	20.0
Junior High School	9	22.5
Senior High School	11	27.5
University	12	30.0
Occupation		
Housewife	24	60.0
Civil Servant	2	5.0
Entrepreneur	4	10.0
Laborer	5	12.5
Unemployed	5	12.5
Duration of Hypertension		
3 years	8	20.0
4 years	7	17.5
5 years	25	62.5

That study revealed that most respondents had blood pressure within the controlled category, while some experienced elevated levels in the range of ≥130–139 mmHg systolic and ≥85–89 mmHg diastolic. These findings reinforce the present study's results, indicating that blood pressure may be influenced by factors such as age, stress, and lifestyle, including workload and physical activity. Thus, this study supports the notion that high blood pressure is affected not only by physiological factors but also by psychosocial and lifestyle-related factors.

Based on Table 2, the results showed that most respondents had systolic blood pressure within the moderate hypertension category, totaling 23 individuals (57.5%), while 17 respondents (42.5%) were in the mild hypertension category. Meanwhile, based on diastolic blood pressure, the majority of respondents were categorized as having mild hypertension, with 25 individuals (62.5%), followed by 8 respondents (20%) with high-normal blood pressure, 4 respondents (10%) within the normal category, and 3 respondents (7.5%) classified as having moderate hypertension.

Table 2. Description of Respondents' Blood Pressure

Category	Frequency (n)	Percentage (%)
Systolic		
Mild Hypertension (140-159 mmHg)	17	42.5
Moderate Hypertension (160-179 mmHg)	23	57.5
Diastolic		
Normal (80-84 mmHg)	4	10.0
High Normal (85-89 mmHg)	8	20.0
Mild Hypertension (90-99 mmHg)	25	62.5
Moderate Hypertension (100-109 mmHg)	3	7.5

Source: ESC, 2018 (Williams, Mancia, Spiering, Agabiti Rosei, Azizi, Burnier, 2018).

The results of this study are also consistent with a previous study entitled "Description of Blood Pressure Among Elderly Individuals in Padukuhan Dogongan, Imogiri." That study showed that among 12 elderly respondents examined, 42% had blood pressure above normal levels (>140/90 mmHg), while 58% were within normal limits (<140/90 mmHg). These findings illustrate that most elderly individuals remain vulnerable to increased blood pressure due to factors such as age, dietary patterns, and unhealthy lifestyles (Salmiyati *et al.*, 2024).

This finding is consistent with the present study, in which respondents' blood pressure levels also showed both decreases and increases influenced by activity patterns, stress, and daily lifestyle habits. Thus, both studies emphasize the importance of regular blood pressure monitoring and the adoption of healthy lifestyle practices to maintain blood pressure stability among the elderly population.

DISCUSSION

Based on the results of the study, it was found that most respondents were female, totaling 29 individuals (72.5%). This finding indicates that women experience hypertension more frequently than men. This result is consistent with the theory proposed by Smeltzer and Bare (2010), which states that the risk of hypertension in women increases after menopause due to decreased estrogen levels, a hormone that plays a role in maintaining vascular elasticity and lipid metabolism. In addition, an inactive lifestyle, high-sodium dietary habits, and stress may also contribute to elevated blood pressure among adult and elderly women (Riyadina, 2019).

Regarding educational level, most respondents had completed higher education, totaling 12 individuals (30%). A person's level of education influences their ability to receive and process health-related information. According to Notoatmodjo (2018), higher an individual's educational attainment, the better their knowledge in managing a healthy lifestyle, including adherence to hypertension treatment and control of risk factors. However, despite the fact that some respondents had higher education, several still exhibited blood pressure levels within the hypertensive category. This may be attributed to behavioral and lifestyle factors such as lack of physical activity, stress, and high sodium intake (Aisyah Nur Safitri, 2022).

Most respondents were housewives, 24 individuals (60%). Occupation may influence a person's level of stress and physical activity. Housewives tend to have limited physical activity within the household and may experience psychological burdens related to family responsibilities, both of which can contribute to increased blood pressure. Emotional stress and lack of physical activity are important factors that play a significant role in the elevation of blood pressure among individuals with hypertension (Elsi Setiandari, 2022).

Based on the duration of hypertension, the majority of respondents had suffered from hypertension for five years, totaling 25 individuals (62.5%). This condition indicates that most respondents had been undergoing antihypertensive treatment for a relatively long period. Chronic hypertensive patients receiving long-term therapy remain at risk of elevated blood pressure if not accompanied by proper

medication adherence, a low-sodium diet, and effective stress management. This finding emphasizes that blood pressure control depends not only on pharmacological treatment but also on comprehensive lifestyle modification (Dalfian, Festy Ladyani Mustofa, 2024).

Based on the blood pressure measurements, most respondents had systolic blood pressure within the moderate hypertension category, totaling 23 individuals (57.5%), while 17 respondents (42.5%) were in the mild hypertension category. Meanwhile, the majority of respondents' diastolic blood pressure fell within the mild hypertension category, with 25 individuals (62.5%), followed by 8 respondents (20%) in the high-normal category, 4 respondents (10%) in the normal category, and 3 respondents (7.5%) in the moderate hypertension category. These results indicate that most patients still experience above-normal blood pressure levels despite undergoing antihypertensive treatment for 3–5 years.

This condition may be attributed to several factors, including medication adherence, age, stress, dietary patterns, physical activity, and resistance to certain antihypertensive drugs. The effectiveness of hypertension treatment may decrease over time if not supported by a healthy lifestyle. In addition, the body's physiological response to medication may vary among individuals depending on metabolic differences and the condition of target organs such as the kidneys and heart (Novita *et al.*, 2021).

Overall, the results of this study indicate that although the respondents have undergone antihypertensive therapy for three to five years, most of them still fall into the categories of mild to moderate hypertension. This finding highlights the importance of regular evaluation of ongoing treatment, as well as the need for continuous education regarding medication adherence and lifestyle modification among individuals with hypertension. Promotive and preventive efforts by healthcare professionals, particularly nurses at community health centers, are expected to play a vital role in improving blood pressure control among hypertensive patients in the community (Aditya *et al.*, 2024).

CONCLUSIONS

Based on the results of the study conducted among patients with a history of antihypertensive medication use for 3–5 years in the service area of public health care, it can be concluded that most respondents were female, had a higher education level, worked as housewives, and had been suffering from hypertension for five years.

The results of blood pressure measurements showed that most respondents had systolic blood pressure in the moderate hypertension category, while the majority of diastolic blood pressure values were in the mild hypertension category. These findings indicate that although respondents had been regularly taking antihypertensive medications for a relatively long period, some still experienced blood pressure levels that were not yet fully controlled.

This condition may be influenced by several factors, including adherence to medication, lifestyle patterns, stress levels, and high sodium intake. Therefore, regular blood pressure monitoring and enhanced health education on hypertension management are essential. In addition, a nursing approach that focuses on behavioral modification, the adoption of a healthy lifestyle, and increased physical activity is crucial to help patients achieve and maintain optimal blood pressure levels.

REFERENCES

Aditya, M. *et al.* (2024) 'Hubungan antara Kepatuhan Minum Obat dengan Tekanan Darah pada Pasien Hipertensi di Fasilitas Kesehatan Tingkat Pertama © 2022 Program Studi S-1 Kesehatan Masyarakat Universitas Muhammadiyah Semarang', *Jurnal Kesehatan Masyarakat Indonesia*, 19, pp. 14–19. Available at: https://doi.org/https://doi.org/10.26714/jkmi.19.2.2024.14-19.

Aisyah Nur Safitri, Y.A.R. (2022) 'Pengaruh Tingkat Pendidikan Dan Usia Terhadap Tekanan Darah Pada Lansia Kecamatan Gatak', pp. 1–11. Available at: http://eprints.ums.ac.id/id/eprint/133051.

Chasanah, S.U. (2022) 'The Relationship Between Physical Activity And The Degree Of Hypertension In The Elderly At Berbah Puskesmas Sleman', *Jurnal Kesehatan Masyarakat*, 9(2). Available at: https://doi.org/10.31602/ann.v9i2.6683.

Dalfian, Festy Ladyani Mustofa, F. (2024) 'Hubungan Kepatuhan Minum Obat Antihipertensi Dan Diet Rendah Garam Terhadap Tekanan Darah Pasien Hipertensi Di Poliklinik Rumah Sakit Pertamina Bintang Amin', *Jurnal Ilmu Kedokteran dan Kesehatan*, 11(3), pp. 477–485.

Available at: https://doi.org/https://doi.org/10.33024/jikk.v11i3.11570.

Devi Listiana, S. Effendi, Y.E.S. (2020) 'Factors Who Associated With Obedience Of Hypertension Patient On Doing Treatment In Karang Dapo Primary Health Care Muratara District', 8(1), pp. 11–22. Available at: https://doi.org/https://doi.org/10.37676/jnph.v8i1.1005.

Elsi Setiandari (2022) 'Knowledge, Work and Genetic Relationship (family history of hypertension) to Hypertensive Disease Prevention Behavior', *The Indonesian Journal of Health Promotion*, 5(4), pp. 457–462. Available at: https://doi.org/https://doi.org/10.56338/mppki.v5i4.2386.

Fatma Yulia, A. and Syukrianti, S. (2024) 'Gambaran Karakteristik Tekanan Darah Dosen di Universitas Pahlawan Tuanku Tambusai', *Jurnal Pahlawan Kesehatan*, 01, pp. 360–366. Available at: https://doi.org/https://doi.org/10.70437/jpk.v1i4.804.

Islamiaty, I.N., Ayu, O. and Manto, D. (2020) 'Efektivitas Pendidikan Kesehatan Pada Pasien Hipertensi Studi Narrative Review', *Journal of Nursing Invention*, 1(2), pp. 130–137. Available at: https://doi.org/10.33859/jni.v1i2.45.

Jambi, P.D.P. (2021) *Profil Kesehatan Provinsi Jambi Tahun 2022. Pemerintah Daerah Provinsi Jambi*. Jambi.

Kemenkes, R. (2019) *Laporan Nasional Riskesdas 2018*. Available at: https://repository.kemkes.go.id/book/1323.

Maimunah, Rian Tasalim, A.H. (2023) 'Efektivitas Media Poster Terhadap Kepatuhan Minum Obat Pasien Hipertensi Di Puskesmas Rawat Inap Alabio'. Available at: https://doi.org/http://dx.doi.org/10.32419/jppni.v7i2.355.

Muchtar, R. S. U, Natalia. S, P.L. (2022) 'Pengaruh Slow Deep Breathing Terhadap Penurunan Tekanan Darah Pada Pasien Hipertensi', *Jurnal Keperawatan Abdurrab*, 6(1), pp. 85–93. Available at: https://doi.org/10.36341/jka.v6i1.2555.

Nany Suryani, Noviana, O.L. (2025) 'Relationship Status Of Nutrition, Physical Activity, Consumption Of Fruits And Vegetables With The Incidence Of Hypertension In Clinic Of Medicine In RsdIdaman Kota Banjarbaru', *The Indonesian Journal of Health*, X(2), pp. 100–107.

Nggule, A.B., Sulistianir, I. and Salawali, S.H. (2025) 'Pengaruh Latihan Slow Deep Breathing Terhadap Penurunan Tekanan Darah Pada Pasien Hipertensi Di Uptd Puskesmas Patilanggio Kabupaten', *Jurnal Keperawatan*, 8, pp. 1–15. Available at: https://www.jurnal.karyakesehatan.ac.id/JK/article/view/1521.

Novita, D. *et al.* (2021) 'Studi Korelasi Gaya Hidup terhadap Efektivitas Obat Antihipertensi pada Pasien di Salah Satu Puskesmas di Wilayah Surabaya Selatan Correlation Study of Lifestyle on the Effectiveness of Anti- hypertensive Drugs in Patients of One of Community Health Cente', *Journal Of Pharmacy Science And Practice*, 8(1), pp. 41–53. Available at: https://media.neliti.com/media/publications/458222-none-aadb7b25.pdf.

Nurhayati, I. and Kunci, K. (2020) 'Hubungan Tingkat Pengetahuan Keluarga Tentang Hipertensi dengan Klasifikasi Hipertensi The Carrelation of A Family Knowledge Level of Hypertension With Hypertension Classification', 18(2). Available at: https://doi.org/https://doi.org/10.26576/profesi.v18i2.50.

Pratiwi, A. (2020) 'The Effect Of Slow Deep Breathing On Blood Pressure In Hypertension Patients', *Jurnal Masker Medika*, 8, pp. 263–267. Available at: https://doi.org/https://doi.org/10.52523/maskermedika.v8i2.414.

Riyadina, W. (2019) *Hipertensi pada Wanita Menopause*. 1st edn. Jakarta: LIPI Press, anggota Ikapi. Available at: https://eprints.triatmamulya.ac.id/572/1/10. Hipertensi pada Wanita Menopause.pdf.

Salmiyati, S. *et al.* (2024) 'Gambaran tekanan darah pada lansia di Padukuhan Dogongan Imogiri Overview of blood pressure in the elderly in Dogongan Imogiri Village', 2(13), pp. 1682–1686. Available at: https://proceeding.unisayogya.ac.id/index.php/prosemnaslppm/article/view/707.

Septi Ardianty, Monaliza Kasumadewi, S. (2023) 'The Effect Of Slow Deep Breathing (Sdb) Technique On Blood Pressure In Elderly With Hypertension', *Jurnal Masker Medika*, 12(2), pp. 484–492. Available at: https://doi.org/https://doi.org/10.52523/maskermedika.v12i2.717.

Sugiyono (2018) *Metode Penelitian Kuantitatif Kualitatif dan R&D*. Alfabeta. Available at: https://digi-lib.stekom.ac.id/assets/dokumen/ebook/feb_35efe6a47227d6031a75569c2f3f39d44fe2db43_1652079047.pdf.

Suwandewi, A. and Rizani, K. (2022) 'The Effect of Therapy Modality of Warm Water Foot Soak on

Blood Pressure in the Elderly', *Journal of Nursing and Health Education*, 1(2), pp. 19–25.

WHO (2021) *Hypertension, World Health Organization 2021*, *World Health Organization*. Available at: https://www.who.int/health-topics/hypertension/.

Williams, Mancia, Spiering, Agabiti Rosei, Azizi, Burnier, et al. (2018) '2018 ESC/ESH Guidelines for the Management of Arterial Hypertension', *European Heart Journal*, 39, pp. 3021–3104. Available at: https://doi.org/10.1093/eurheartj/ehy339.

Zulafiyah, Sukarmin, M.P. (2025) 'Hubungan Jenis Terapi Obat Hipertensi Terhadap Tekanan Darah Pada Hipertensi Di Puskesmas Welahan I', *Jurnal Keperawatan Sisthana*, 10(1), pp. 37–42. Available at: https://doi.org/https://doi.org/10.55606/sisthana.v10i1.1676.