



**RELATIONSHIP BETWEEN COMPLIANCE IN TAKING MEDICATION AND THE  
INCIDENCE OF HYPERTENSION COMPLICATIONS AT RSAU dr. EFRAM  
HARSANA LANUD ISWAHJUDI**

Lutfi Nur Muhammadin<sup>1</sup>, Saiful Nurhidayat<sup>2</sup>, Dianita Rifqia Putri<sup>3</sup>, Laily Isro'in<sup>4</sup>, Sulistyo Andarmoyo<sup>5</sup>

Muhammadiyah University of Ponorogo<sup>1,2,3,4</sup>,

Penulis korespondensi: rifqiaputri@umpo.ac.id

**ABSTRACT**

One non-communicable disease that plagues the health sector, particularly in hospitals, is hypertension. The goal of treatment for hypertension patients is to improve the quality of life, so patient compliance is needed for those who are undergoing hypertension treatment in order to obtain a better quality of life for patients and avoid complications of the disease. This study was conducted to determine compliance with taking medication with the incidence of hypertension complications. This research method uses descriptive correlation with a cross-sectional approach to 93 respondents at RSAU Dr. Efram Harsana with purposive sampling using the MMAS questionnaire. The data analysis will be used is the chi-square correlation statistical test. For the results, if the  $p$  value  $\geq 0.05$ , then  $H_0$  is accepted, and if the  $p$  value  $\leq 0.05$ , then  $H_a$  is accepted. For the results, if the  $p$  value  $\geq 0.05$ , then  $H_0$  is accepted, and if the  $p$  value  $\leq 0.05$ , then  $H_a$  is accepted. The results of the study showed that the majority of respondents had compliance with taking medication in the moderate category, as many as 50 people (53.8%); high compliance, as many as 26 people (28.0%); and low compliance, as many as 17 people (18.3%). The majority of respondents in this study were female, as many as 57 people (61.3%), and male respondents were as many as 36 people (38.7%). The data were processed and analyzed using the chi-square test with  $\alpha = 0.05$ . The results of the study obtained a moderate level of compliance of 53.8% of 93 respondents. Based on statistical tests, it is known that a P-value of  $0.000 < 0.05$  indicates that  $H_1$  is accepted, which means that there is a relationship between medication compliance and the study of hypertension complications. From the research above, respondents are expected to be able to understand the importance of being obedient in taking medication so that they can prevent complications from hypertension in the future.

**KEYWORDS**

Hypertension, Medication, Compliance, Incidence, Complications

**INTRODUCTION**

One non-communicable disease that plagues the health sector, particularly in hospitals, is hypertension. Hypertension can be said to be a silent killer because the condition does not have specific symptoms and is asymptomatic. Sufferers are usually not aware of hypertension before complications occur (Harahap *et al.*, 2019). Because the blood pressure generated during heart contractions affects the walls of blood vessels, hypertension is considered a major cause of cardiovascular or heart disease worldwide (Haryanto, Anshari and Kartikasari, 2023).

The main factor affecting blood pressure equality is drug compliance. One of the main factors in the failure of hypertension therapy, which is also one of the main causes of high mortality rates in Indonesia, is patients who do not comply with their hypertension pharmacological therapy to get good results from hypertension treatment (Syamsudin, Salman and Sholih, 2002). Compliance of hypertensive patients in taking antihypertensive drugs is still low, ranging from 50-70% (Haryanto, Anshari and Kartikasari, 2023). There are many things that cause non-compliance in taking antihypertensive drugs, such as patients who already feel healthy and do not have complaints, do not routinely go to health care facilities, drink herbal medicine/traditional medicine, often forget, cannot

afford to buy medicine continuously, worry about the side effects of the drug, drugs are not available at health care facilities, or other causes (Ihwatun *et al.*, 2020). Based on Riskesdas 2018, the prevalence of hypertension based on measurement results in the population aged  $\geq 18$  years was 34.1%, and East Java was ranked seventh at 36.3%. From the prevalence data, it is known that 8.8% were diagnosed with hypertension, and 13.3% of those diagnosed with hypertension did not take medication, and 32.3% did not routinely take medication. The data above shows an increase when compared to the 2013 Riskesdas data. According to data from the Magetan Health Office, hypertension sufferers in 2019 were 40,022 people per year. While in 2020 it was 25,011 at the age of over 55 years. From data from the Magetan Health Office in 2018, there were 45,031 hypertension sufferers. Because it shows that most hypertension sufferers do not know that they have hypertension, so they do not get treatment (Depkes RI, 2020).

Based on the results of a preliminary study in the work area of the RSAU, Dr. Efram Harsana found that the incidence of hypertension from January to December 2022 was 2,281 cases. In January there were 159 cases, in February 180 cases, in March 187 cases, in April 178 cases, in May 196 cases, in June 202 cases, in July 215 cases, in August 287 cases, in September 270 cases, in October 251 cases, in November 238 cases, and in December 229 cases.

Compliance can be used as a parameter of the patient's level of knowledge in carrying out instructions from medical personnel in the form of knowledge about prescriptions, taking medication regularly and correctly, and changing lifestyle. The goal of treatment for hypertension sufferers is to improve the quality of life, but many stop taking medication when their bodies improve slightly, so patient compliance is needed for those who are undergoing hypertension treatment in order to obtain a better quality of life for patients. Factors that influence patient compliance in taking medication include education level, knowledge level, income level, ease of access to health facilities, and the availability of health insurance that makes it easier for patients to pay for medical expenses (Dewi and Wardani, 2022). Compliance with taking medication in patients with hypertension is very important because taking antihypertensive drugs regularly can control blood pressure in patients with hypertension so that in the long term the risk of damage to organs such as the heart, kidneys, and brain can be reduced. Antihypertensive drugs that are currently available have been proven to control blood pressure in patients with hypertension and play a very important role in reducing the risk of developing cardiovascular complications such as stroke (Harahap *et al.*, 2019).

The Aim research is want to conduct a study on the relationship between the level of compliance with taking medication and the incidence of hypertension complications in patients with the Neurology Polyclinic in the work area of Dr. Efram Harsana Lanud Iswahjudi Hospital.

## **MATERIALS AND METHODS**

This study used a cross-sectional approach with a population The population in this study were all hypertensive patients at RSAU Dr. Efram Harsana Lanud Iswahjudi Magetan, totaling 625 patients. The sample was calculated using the Slovin Formula, where the number of samples was 93 respondents. The inclusion criteria for this study were hypertensive patients who underwent examinations at the neurology polyclinic or inpatient RSAU Dr. Efram Harsana Lanud Iswahjudi and hypertensive patients whwere willing to participate in the study and were proven by informed consent. The research instrument used was the Morisky Medication Adherence Scale (MMAS-8) questionnaire, which is a standard questionnaire to measure medication adherence. The data analysis that will be used in this study is the chi-square correlation statistical test because the measurement scale in this study uses an ordinal and ordinal scale. For the results, if the  $p$  value  $\geq 0.05$ , then  $H_0$  is accepted, and if the  $p$  value  $\leq 0.05$ , then  $H_a$  is accepted.

## RESULTS

General data from respondents are as follows:

Table 1. General Data From Respondents

Category	Description	Frequency	Percentage (%)
Gender	Perempuan	57	61,3
	Laki-laki	36	38,7
Education	Elementary School	11	11,8
	Junior High School	16	17,2
	High School	56	60,2
	College	10	10,8
Age	<20	4	4,3
	20-30	20	21,5
	31-40	17	18,3
	41-50	20	21,5
	51-60	19	20,4
	>60	13	14,0
Occupation	Housewife	22	23,7
	Employee	24	25,8
	Civil Servant	9	9,7
	Farmer	14	15,1
	Labor	11	11,8
	Other	13	14,0
Duration Of Treatment	1 Month	19	20,4
	2 Month	13	14,0
	3 Month	1	1,1
	4 Month	18	19,4
	5 Month	22	23,7
	6 Month	20	21,5
Total		93	100

Based on Table 1, it is known that the gender of the majority of respondents is female, as many as 57 people (61.3%), and male respondents as many as 36 people (38.7%). From the education data, it is known that most respondents have high school education—as many as 56 people (60.2%)—and college—as many as 10 people (10.8%). From the age data, it is known that the majority of respondents are 20-30 years old and 41-50 years old, with 20 people (21.5%) in each group, and <20 years old, with as many as 4 people (4.3%). From the occupation data, it is known that the majority of respondents have jobs as employees (as many as 24 people, or 25.8%) and civil servants (as many as 9 people, or 9.7%). From the treatment duration data, it is known that the majority of respondents have undergone a treatment period of 5 months (as many as 22 people, or 23.7%) and 3 months (as many as 1 person, or 1.1%).

Table 2. Medication Compliance Frequency Distribution of Respondents Based on Medication Compliance in RSAU dr. Efram Harsana Lanud Iswahjudi

Medication Compliance	Frequency	Percentage (%)
Low	17	18,3
Medium	50	53,8
High	26	28,0
Total	93	100

Table 3. Frequency Distribution of Respondents Based on the Incidence of Hypertension Complications in RSAU dr. Efram Harsana Lanud Iswahjudi

Incidence of Hypertension Complications	Frequency	Percentage (%)
Yes	50	53,8
No	43	46,2
Total	93	100

Table 4. Frequency Distribution of Respondents Based on Complicated Diseases in RSAU dr. Efram Harsana Lanud Iswahjudi

Complicated Diseases	Frequency	Percentage (%)
None	43	46,2
Stroke	13	14,0
Kidney failure	8	8,6
Heart failure	2	2,2
Diabetes Mellitus	27	29,0
Total	93	100

Table 5. Cross Tabulation of the Relationship between Medication Compliance and the Incidence of Hypertension Complications in RSAU dr. Efram Harsana Lanud Iswahjudi

Medication Compliance	Incidence of Hypertension Complications				Total		Asymp. Sig. (2-sided) (p)
	Yes		No				
	N	%	N	%	N	%	
Low	16	94,1	1	5,9	17	100	0.000
Medium	32	64,0	18	36,0	50	100	
High	2	7,7	24	92,3	26	100	
Total	50	53.8	43	46.2	93	100	

From Table 5, it shows that out of 17 respondents, 16 people (94.1%) had low medication adherence and experienced hypertension complications, and 1 respondent (5.9%) had low medication adherence but did not experience complications. Of the 50 respondents, it is known that 32 people (64.0%) had moderate medication adherence and experienced hypertension complications, while 18 people (36.0%) had moderate medication adherence and did not experience hypertension complications. Meanwhile, from 26 respondents, it is known that 2 people (7.7%) had high medication adherence with hypertension complications and 24 people (92.3%) had high medication adherence and did not experience hypertension complications. From the results of the statistical test, the sig value was obtained

= 0.000, which means P-value < 0.05. This study shows that there is a relationship between medication adherence and the incidence of hypertension complications.

## DISCUSSION

The study also found a correlation between compliance and gender, namely women at 73.1% and men at 26.9%. In theory, according to Dharmadhikari et al., (2012) women tend to be more afraid to break the rules because women are basically affectionate and have a sense of responsibility. Looking at the results of this study, the researcher argues that the correlation between the level of compliance with hypertension management and gender seems to show a significant difference in the response between women and men. The theory proposed by Dharmadhikari et al., (2012)) provides an interesting view of this difference. From the results of the statistical test, the sig value was obtained = 0.000, which means P-value < 0.05. This study shows that there is a relationship between medication compliance and the incidence of hypertension complications.

Hypertension is the most common cardiovascular disease, which is classified as a degenerative disease and is referred to as the "silent killer" disease. One of the risk factors that can cause an increase in the incidence of complications in hypertension sufferers is patient non-compliance in taking antihypertensive drugs (Pratiwi, Hendra and Virginia, 2024). If uncontrolled hypertension is not treated optimally, it will result in the recurrence of hypertension symptoms, which are usually called hypertension recurrence. If hypertension sufferers do not prevent and treat their hypertension optimally, hypertension sufferers will be at risk of complications. The obligation of hypertension sufferers to comply when undergoing treatment is one of the basic things to do with the aim that blood pressure can be controlled regularly. The success of hypertension management is also supported by the compliance of hypertension sufferers in taking medication regularly (Jamtoputri et al., 2024).

Based on the results of the frequency distribution, the most common complications experienced by hypertension sufferers in this study were diabetes mellitus, as many as 27 people (29.0%); followed by stroke, as many as 13 people (14.0%); kidney failure, as many as 8 people (8.8%); and heart failure, as many as 2 respondents (2.2%). Hypertension accompanied by comorbidities is one of the number one causes of death in the world. Blood vessel complications caused by hypertension can cause coronary heart disease, heart infarction (tissue damage), stroke, and kidney failure. It is also known that the relationship between hypertension and diabetes mellitus is very strong because several criteria are often present in hypertensive patients, namely increased blood pressure, obesity, dyslipidemia, and increased blood glucose (Wirakhmi and Purnawan, 2021). Diabetes mellitus is also defined as a metabolic disease that is included in the group of blood sugar that exceeds normal limits, or hyperglycemia (more than 120 mg/dl or 120%). Therefore, DM is often referred to as sugar disease. Now, sugar disease is not only protein and fat metabolism. As a result, DM often causes complications that are chronic, especially in the structure and function of blood vessels. If this is left untreated, other complications will arise that are quite fatal, such as heart disease, kidney disease, blindness, and atherosclerosis, and even part of the body can be amputated (Saragih, 2021).

The results of this study are supported by the research of Barkah and Agustina (2022) in their study entitled "The Relationship between Compliance in Taking Medication and the Incidence of Complications in Patients with Hypertension." The results of the study showed that there was a relationship between compliance in taking antihypertensive drugs and the incidence of complications in hypertensive patients with a P value = 0.000 (<0.05).

## CONCLUIONS

Based on the discussion in this study, the following conclusions can be drawn, Compliance with taking medication for hypertensive patients at RSAU dr. Efram Harsana Lanud Iswahjudi is mostly in the moderate compliance category of 53.8%. The incidence of hypertension complications in hypertensive patients at RSAU dr. Efram Harsana Lanud Iswahjudi is mostly in the moderate category of 53.8%. There is a relationship between medication compliance and the incidence of hypertension complications in the neurology polyclinic of RSAU dr. Efram Harsana Lanud Iswahjudi.

## REFERENCE

- Depkes RI (2020) 'Direktorat Jenderal Pencegahan dan Pengendalian Penyakit', *Kementerian Kesehatan RI*, pp. 1–2.
- Dewi, A.I. and Wardani, E. (2022) 'Occupational health and safety management system and work-related accidents among hospital nurses', *Enfermeria Clinica*, 32, pp. S6–S10. Available at: <https://doi.org/10.1016/j.enfeli.2022.03.008>.
- Dharmadhikari, A.S. *et al.* (2012) 'Surgical face masks worn by patients with multidrug-resistant tuberculosis: Impact on infectivity of air on a hospital ward', *American Journal of Respiratory and Critical Care Medicine*, 185(10), pp. 1104–1109. Available at: <https://doi.org/10.1164/rccm.201107-1190OC>.
- Harahap, D.A. *et al.* (2019) 'JURNAL NERS Research & Learning in Nursing Science DENGAN KEPATUHAN MINUM OBAT ANTIHIPERTENSI DI WILAYAH KERJA PUSKESMAS KAMPA TAHUN 2019', 3, pp. 97–102.
- Haryanto, E., Anshari, A.M. and Kartikasari, R. (2023) 'Kepatuhan Minum Obat Hipertensi Pada Peserta Prolanis di Puskesmas Sukawarna Kota Bandung', *Jurnal Ilmiah JKA (Jurnal Kesehatan Aeromedika)*, 9(1), pp. 44–47. Available at: <https://doi.org/10.58550/jka.v9i1.197>.
- Ihwatun, S. *et al.* (2020) 'Faktor-faktor yang Berhubungan dengan Kepatuhan Pengobatan pada Penderita Hipertensi di Wilayah Kerja Puskesmas Pudakpayung Kota Semarang Tahun 2019', *Jurnal Kesehatan Masyarakat*, 8(3), pp. 352–359. Available at: <http://ejournal3.undip.ac.id/index.php/jkm>.
- Pratiwi, V.D., Hendra, P. and Virginia, D.M. (no date) 'Ketaatan Terapi Antihipertensi dengan Terkontrolnya Tekanan Darah pada Pasien Hipertensi Komorbid DM Tipe2 di Puskesmas Kabupaten Sleman Adherence to Antihypertensive Therapy with Controlled Blood Pressure in Hypertension Patients with Type 2 DM Comorbidi', 526, pp. 213–222.
- Syamsudin, A.I., Salman, S. and Sholih, M.G. (2002) 'Analisis Faktor Kepatuhan Minum Obat Pada Pasien Hipertensi di Puskesmas Cilamaya Kabupaten Karawang', *Pharmacon*, 11(3), pp. 1651–1658.
- Wirakhmi, I.N. and Purnawan, I. (2021) 'Hubungan Kepatuhan Minum Obat Dengan Tekanan Darah Pada Penderita Hipertensi', *Jurnal Ilmu Keperawatan dan Kebidanan*, 12(2), p. 327. Available at: <https://doi.org/10.26751/jikk.v12i2.1079>.
- et al.* (2024) 'Hubungan Kepatuhan Minum Obat Terhadap Kualitas Hidup Pasien Hipertensi Dengan Penyerta Dislipidemia Di Puskesmas Mekarmukti Kabupaten Bekasi', *Jurnal Farmamedika (Pharmamedica Journal)*, 9(1), pp. 63–70. Available at: <https://doi.org/10.47219/ath.v9i1.323>