International Journal Of Health, Engineering And Technology (IJHET) *E-ISSN 2829 - 8683*
Volume 4, Number 6, March 2026, *Page. 2158 - 2165*
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Analysis Of The Relationship Between Compliance With Antihypertensive Drug Use And The Therapy Output Of Hypertension Patients At The Sangkrah Community Health Center In Surakarta

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Abstract

Hypertension is a chronic disease with a high prevalence and remains a major public health problem that requires long-term therapy and optimal blood pressure control to prevent complications. Treatment success is influenced by various factors, including adherence to antihypertensive medication. Poor adherence may result in uncontrolled blood pressure and reduced therapeutic outcomes. This study aimed to analyze the relationship between adherence to antihypertensive medication use and therapeutic outcomes among hypertensive Patients at Sangkrah Primary Health Center, Surakarta. This study employed an observational analytic design with a cross-sectional approach. The study population consisted of hypertensive patients who met the inclusion criteria. Medication adherence was measured using the Morisky Medication Adherence Scale (MMAS-8), while therapeutic outcomes were assessed based on blood pressure records documented in patients' medical files. Data were analyzed using univariate analysis to describe respondent characteristics and bivariate analysis using the chi-square test to examine the association between medication adherence and therapeutic outcomes. The results showed that most respondents were classified as adherent, with 90 respondents (90.0%), while 10 respondents (10.0%) were non-adherent. Regarding therapeutic outcomes, 74 respondents (74.0%) had uncontrolled blood pressure and 26 respondents (26.0%) had controlled blood pressure. Chi-square analysis showed a Pearson Chi-Square value of 0.208 ($p > 0.05$), indicating no statistically significant relationship between medication adherence and therapeutic outcomes. In conclusion, adherence to antihypertensive medication was not significantly associated with blood pressure control. These findings indicate that blood pressure management is influenced not only by medication adherence but also by factors, comorbidities, and nonpharmacological interventions.

Keywords: Hypertension, Adherence, Therapeutic Outcome.

INTRODUCTION

Hypertension is a non-communicable disease characterized by persistently elevated systolic blood pressure of ≥140 mmHg and/or diastolic blood pressure of ≥90 mmHg. This disease is known as a silent killer because it often does not cause obvious symptoms, but can lead to serious complications such as stroke, coronary heart disease, kidney failure, and heart failure if not properly controlled. Globally, hypertension is a major risk factor for death from cardiovascular disease. The World Health Organization (WHO, 2023) reports that more than one billion people worldwide suffer from hypertension, with the majority of cases occurring in middle- and low-income countries.

In Indonesia, hypertension remains a significant public health problem. According to the 2018 Basic Health Research (Riskesdas), the prevalence of hypertension among people aged 18 years and older reached 34.1%. This figure represents an increase compared to previous surveys and confirms that hypertension requires special attention, particularly in efforts to control and prevent long-term complications (Ministry of Health of the Republic of Indonesia, 2018).

Hypertension management aims to lower blood pressure to the recommended target level to reduce the risk of cardiovascular complications. Hypertension therapy is generally carried out long-term, even lifelong, using antihypertensive medications. However, the success of therapy is determined not only by selecting the correct type and dosage of medication but also by the patient's level of compliance in taking the medication according to the healthcare professional's recommendations (Burnier & Egan, 2019).

Medication adherence is defined as the extent to which a patient follows treatment recommendations agreed upon with a healthcare professional. Non-adherence to antihypertensive

therapy is a major cause of failure to achieve blood pressure targets. The WHO (2019) states that the average patient adherence to chronic disease therapy in developing countries is only around 50%, posing a significant challenge in the management of chronic diseases, including hypertension.

Various studies have shown that patients with high adherence levels are more likely to achieve controlled blood pressure compared to those with low adherence. Abegaz et al. (2017) reported that non-adherence to antihypertensive therapy was significantly associated with poor blood pressure control. This suggests that adherence is a critical factor in the success of hypertension therapy.

The level of compliance was measured in this study using the Morisky Medication Adherence Scale-8 (MMAS-8) instrument, which has been widely used in research related to hypertension and has been proven to have good validity and reliability in measuring the level of patient compliance with drug therapy.

Based on patient visit data at the Sangkrah Community Health Center, the number of hypertension patients shows an increasing trend each year. Despite antihypertensive therapy, patients are still found to have blood pressure levels that have not reached target levels. This indicates suboptimal blood pressure control and is suspected to be related to patient compliance with antihypertensive medication.

Based on this description, this study was conducted to analyze the relationship between adherence to antihypertensive medication and blood pressure control in hypertensive patients at the Sangkrah Community Health Center. The results are expected to serve as a basis for improving patient adherence, thus achieving optimal blood pressure control and minimizing the risk of complications.

RESEARCH METHODS

This study was an analytical observational study with a cross-sectional approach conducted at the Sangkrah Community Health Center in December 2025. The population in this study were all hypertensive patients undergoing routine treatment at the Sangkrah Community Health Center. The study sample consisted of 100 respondents selected using the Slovin formula according to the established inclusion and exclusion criteria.

Data collection was conducted using the MMAS-8 questionnaire to measure medication adherence. Blood pressure data were obtained from the results of the last examination recorded in the patient's medical record. Data analysis was performed univariately to describe respondent characteristics, adherence level, and blood pressure control, and bivariate analysis using the Chi-Square test with a 95% confidence level and a significance value of 0.05 to determine the relationship between the two variables.

RESULTS AND DISCUSSION

Compliance Validity Test

Validity is an index that indicates the accuracy of a measuring instrument in measuring data. An instrument is said to be valid if it is able to measure what should be measured according to certain situations and conditions (Nursalam, 2022). This study used a questionnaire data collection technique, the questionnaire was distributed directly at the Sangkrah Surakarta Community Health Center with 8 question items with yes and no answer alternatives for 7 question items and never, rarely/sometimes/often/always for 1 question item. An item can be used in a measuring instrument if it has an r table of 0.361 for 30 respondents with a significance of <0.05 (Paelika et al., 2022).

Table 1. Validity Results of the Compliance Questionnaire

Item	r count	r Table	Sig.	Information
P1	0.392	0.361	0.039	Valid
P2	0.403	0.361	0.033	Valid
P3	0.704	0.361	0,000	Valid
P4	0.611	0.361	0.001	Valid
P5	0.557	0.361	0.002	Valid
P6	0.593	0.361	0.001	Valid
P7	0.392	0.361	0.039	Valid
P8	0.670	0.361	0,000	Valid

Source: Processed primary data, 2026.

Based on Table 1 above, the validity test of the questionnaire in this study was conducted using the Pearson product-moment correlation, which correlates the score of each question item with the total score, which is the sum of each question item's score (Notoadmojo, 2022). The validity test results, reviewed from the Corrected Item-Total Correlation value > 0.361, obtained 8 valid compliance questions including numbers 1, 2, 3, 4, 5, 6, 7, and 8, indicating that all questions can be used in the study.

Compliance Reliability Test

Reliability testing is the extent to which measurement results using the same object will produce the same data (Sugiyono, 2019). A Cronbach's Alpha value > 0.3 is considered reliable, but a Cronbach's Alpha value < 0.6 is considered unreliable (Ghozali, 2020). The reliability compliance test can be seen in Table 2.

Table 2 Results of the Reliability Test of the Compliance Questionnaire

Cronbach's Alpha	N of Items	Information
0.656	8	Reliable

Source: Processed Primary Data, 2026

Based on Table 2 above, the Cronbach's Alpha value obtained was 0.656. This value is greater than 0.60, thus concluding that the research instrument, consisting of 8 questions, is reliable. This indicates that the research instrument has a good level of consistency and can be trusted for use as a data collection tool in this study.

Univariate Analysis

Univariate analysis is data analysis performed on only one variable without comparing it with other variables. Univariate analysis was used to determine the frequency of demographic data, therapeutic success, and adherence levels in hypertensive patients at the Sangkrah Community Health Center in Surakarta. Bivariate analysis was used to determine the relationship between medication adherence levels and the success of antihypertensive therapy in hypertensive patients (Sifwa and Nurul, 2023).

Respondent Characteristics

Respondent characteristics are descriptive data that describe the basic characteristics of research subjects, including demographic and clinical aspects. Presenting respondent characteristics aims to provide a general overview of the respondents' condition and aid in the interpretation of research results (Notoatmodjo, 2021).Based on the results of observations conducted at the Sangkrah Surakarta Community Health Center, there were 100 respondents, and the demographic data of the respondents was shown in Table 3.

Table 3 Respondent Characteristics

Respondent Characteristics	n	(%)
Gender		
Man	32	32.0%
Woman	68	68.0%
Age Group		
18-29	-	-
30-39	3	3.0%
40-49	19	19.0%
>50	78	78.0%
Level of education		
Elementary School	13	13.0%
JUNIOR HIGH SCHOOL	43	43.0%
SENIOR HIGH SCHOOL	41	41.0%
S1	3	3.0%
Work		
Self-employed	32	32.0%
Housewife	64	64.0%
civil servant	4	4.0%
Total	100	100.0%

Source: Processed primary data, 2026.

The results of the study show the frequency distribution of respondent characteristics including gender, age, highest level of education, and occupation in Table 3 above.

Patient Compliance Level

According to Saepudin, the level of compliance of respondents in this study was divided into two categories: compliant (a combination of high and medium categories) and non-compliant (low category) (Sifwa and Nurul, 2022). The patient compliance test can be seen in Table 4.

Table 4 Patient Compliance Level

Category	Frequency	Percentage (%)
Obedient	90	90.0%
Not obey	10	10.0%
Total	100	100.0%

Source: Processed primary data, 2026

The results of the study show the frequency distribution of patient compliance levels. Based on the data obtained, the majority of respondents had compliance levels that fell into the compliant category at 90.0% and non-compliant at 10.0%.

Respondents' Blood Pressure Control

Blood pressure control in hypertensive patients is defined as achieving blood pressure within the recommended target as an indicator of successful hypertension management (National Public Health, 2021). The therapeutic output test can be seen in Table 5.

Table 5 Therapy Output

Category	Frequency	Percentage (%)
Controlled	26	26.0%
Not controlled	74	74.0%
Total	100	100.0%

Source: Processed Primary Data, 2026

The results of the study show the frequency distribution of blood pressure control. Based on the data obtained, the majority of respondents' blood pressure fell into the controlled category (26.0%) and uncontrolled (74.0%) as shown in Table 5.

Bivariate Analysis

Bivariate analysis is a statistical analysis used to determine the relationship between independent and dependent variables. This analysis aims to assess whether there is a statistically

significant relationship between two research variables (National Public Health, 2021). Based on the bivariate test using the Chi-Square test, the results are shown in Table 6.

Table 6 Relationship between Compliance with Antihypertensive Drug Use and Therapy Output

		Compliance			Pearson Value *Chi Square*
		Obedient	No Obedient	Total	
Output	Not controlled	66	8	74	0.208
Therapy	Controlled	24	2	26	
Total		90	10	100	

Source: Processed primary data, 2026.

The results of the study showed that the bivariate analysis between variables of compliance with the use of antihypertensive drugs with blood pressure control in patients with the results of the statistical test (chi square test) showed that the p value = 0.208 or p value < a (0.05) so the conclusion is that H0 is accepted and H1 is rejected which shows that there is no relationship between the variables in table 6.

CONCLUSION

Based on the results of research that has been conducted regarding the relationship between adherence to antihypertensive medication use and the therapeutic outcomes of hypertension patients at the Sangkrah Surakarta Community Health Center, it is known that the majority of patients have a level of adherence in the compliant category, which is 90.0%, while the other 10.0% are in the non-compliant category. Although the level of adherence to medication use is considered high, blood pressure control in the majority of patients is still not optimal, where 74.0% of patients are in the uncontrolled blood pressure category and only 26.0% achieve controlled blood pressure.

The results of a bivariate analysis using the Chi-Square test showed no significant relationship between the level of adherence to antihypertensive medication use and the outcome of therapy in hypertension patients, with a p-value of 0.208 (p>0.05). This indicates that medication adherence is not the sole factor determining the success of blood pressure control. The success of hypertension therapy is likely also influenced by other factors such as the patient's lifestyle, the presence of comorbidities, the type and combination of medications used, and the individual's response to the therapy.

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