

## Analysis of determinant factors affecting treatment compliance of hypertensive patients

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### ABSTRACT

**Introduction:** Hypertension requires regular and controlled treatment to stabilize blood pressure and prevent complications. Many hypertensive patients do not comply with hypertension treatment procedures, including medication.

**Objective:** This study aimed to analyze the determinant factors influencing medication compliance in hypertensive patients.

**Methods:** The research method used was observational analytic with a cross-sectional design. Data collection using a questionnaire. The sample in this study was 67 hypertension patients. Data analysis used the chi-square test.

**Result:** The results of this study indicate that there is an influence of the level of knowledge ( $p = 0.045$ ), motivation to seek treatment ( $p = 0.000$ ), and family support ( $p = 0.000$ ) on medication compliance in hypertensive patients.

**Conclusion:** Motivation to seek treatment is the most dominant variable on compliance with the treatment of hypertension patients. Health workers must develop an educational strategy focusing on increasing patient motivation.

**Keywords:** adherence, family support, hypertension, knowledge.



## INTRODUCTION

Hypertension is a non-communicable disease (NCD) with the highest prevalence globally. According to the World Health Organization (WHO) report in 2019, more than 1.28 billion people worldwide have hypertension. Around 82% of people with hypertension live in low- and middle-income countries (Jeemon *et al.*, [2021](#)). Based on the 2018 Basic Health Research, there has been an increase in the prevalence of hypertension patients in Indonesia. The prevalence of hypertension in 2013 was 25.8%, increasing to 34.1% in 2018 (Prihatin, Fatmawati and Suprayitna, [2022](#)). Hypertension is a disease that is easily diagnosed and can be treated with low-cost drugs, but there are gaps in its diagnosis and treatment, especially in developing countries. The problem of medication compliance for hypertension patients is an essential issue in the management of this disease. According to (Raja *et al.*, [2022](#)), hypertension medication adherence is the patient's willingness and ability to follow a long-term treatment plan, including using prescribed medications. Medication adherence plays a vital role in managing blood pressure and reducing the risk of complications.

One of the biggest challenges in managing hypertension is that many patients do not adhere to their medication, and it has a direct impact on the effectiveness of blood pressure control. Non-adherence to hypertension medication can increase the risk of serious complications such as stroke, heart disease, and kidney damage (Kim and Radoias, [2018](#)). Challenges in managing hypertension include various issues related to patients, healthcare providers, and the healthcare system. Common obstacles faced by healthcare providers include patient non-adherence to medication and lifestyle changes, which are often caused by misunderstandings about hypertension or treatment. Many patients do not fully understand the chronic nature of hypertension or the long-term benefits of treatment. In addition, the lack of an approach taken by health workers to intensify treatment ultimately complicates management efforts even when patients do not reach their blood pressure targets (Smolen, Wang and Anane, [2019](#)).

Several factors that influence adherence to hypertension treatment include drug side effects, complexity of drug regimens, difficulty in accessing health facilities, and lack of understanding of the importance of long-term treatment (Wahyuni *et al.*, [2019](#)). Research states that self-efficacy also influences adherence to self-care in people with hypertension. Individuals who have high self-confidence tend to be compliant with hypertension treatment, such as taking medication regularly and controlling blood pressure regularly (Muthiyah A. AM *et al.*, [2023](#)). A Study in Kubu Raya found that 78% of respondents with hypertension were compliant with treatment and had controlled blood pressure compared to those who did not comply with treatment. This compliance improves overall blood pressure control (Nurdin, Marsia and Baedlawi, [2024](#)). In contrast, the results of a study in Surabaya found that most patients (65.2%) did not comply with hypertension treatment. The level of compliance of hypertensive patients with antihypertensive treatment varies significantly with many influencing factors such as age, education level, and social support (Setiadi *et al.*, [2022](#)).

According to data from the Mekar Health Center, Kendari City, the number of hypertension patients aged 15-59 years in January-June 2024 was 400 people. From these data, around 59% of patients undergo treatment monthly at the Health Center. The rest of the patients will only visit if they feel symptoms of hypertension. These data show that the compliance of hypertension patients in undergoing treatment is still low. This study analyzed the factors influencing compliance with therapy in hypertension patients in the Mekar Health Center Work Area of Kendari City in 2024. This study is expected to provide information about factors affecting compliance with hypertension treatment.

## RESEARCH METHODOLOGY

This study is a descriptive correlation study with a cross-sectional approach. The number of samples was 67 people, as determined by accidental sampling. This study was conducted in

the BLUD UPTD Puskesmas Mekar Working Area in August - September 2024. Compliance measurement was carried out using the Modified Morisky Adherence Scale (MMAS) questionnaire. The correlation test between each independent and dependent variable was carried out using the Chi-square statistical test.

## RESULT

Table 1 Respondent Characteristics

Variable	N	%
<b>Age</b>		
< 40 years old	16	23,9
40 – 49 years old	22	32,6
> 50 years old	29	43,3
<b>Gender</b>		
Man	34	50,7
Woman	33	49,3
<b>Education</b>		
Elementary school	3	4,5
High school	34	50,7
University	30	44,8
<b>Occupation</b>		
Civil servant	10	14,9
Private Employees	18	26,9
Entrepreneur	8	11,9
Farmer/Laborer	2	3,0
Not working	13	19,4
Housewife	16	23,9
<b>Years of Hypertension</b>		
< 5 years	29	43,3
> 5 years	38	56,7
<b>Knowledge</b>		
High	42	62,7
Low	25	37,3
<b>Motivation</b>		
High	18	26,9
Low	49	73,1
<b>Family Support</b>		
High	19	28,4
Low	48	71,6
<b>Medication Compliance</b>		
Compliant	14	20,9
Not compliant	53	79,1

Table 1 shows demographic data by age group where most respondents (43.3%) were >50 years old. More than half of the respondents (50.7%) were male. Most respondents (50.7%) graduated from high school, and most were private employees (26.9%). The percentage of patients suffering from hypertension for >5 years was 56.7%. Most respondents (62.7%) had high knowledge about hypertension. Most respondents (73.1) had high motivation for medical treatment. Most respondents (71.6) had high family support for seeking treatment.

**Table 2 Bivariate Analysis Variable**

	Medication Compliance				J	P	
	Disobedient		Compliant				
	n	%	n	%			
<b>Knowledge</b>							
High	12	17,9	30	44,8	42	62,7	0,045
Low	2	3,0	23	34,3	25	37,3	
<b>Motivation</b>							
High	13	19,4	5	7,5	18	26,9	0,000
Low	1	1,5	48	71,6	49	73,1	
<b>Family support</b>							
High	10	14,9	9	14,3	19	28,4	0,000
Low	4	6,0	44	65,7	48	71,6	

Table 2 Results of chi-square test analysis of variables Level of knowledge  $p$ -value = 0.045; motivation to seek treatment  $p$  value = 0.000 and family support  $p$  value = 0.000. The  $p$ -value < 0.05 means that the hypothesis is accepted so that the variables' knowledge, motivation to seek treatment, and family support affect compliance with treatment of Hypertension patients in the Mekar Health Center, Kendari City working area.

**Table 3 Multivariate Analysis**

Variable	B	S.E.	Wald	Df	Sig.	Exp(B)
Knowledge	.135	1.280	.011	1	.916	1.145
Motivation	4.365	1.176	13.789	1	.000	78.652
Family support	1.125	1.128	.996	1	.318	3.081
Constant	-1.419	.696	4.157	1	.041	.242

Table 3 is the result of multivariate analysis, which shows that the most dominant variable on compliance with treatment of hypertension patients in the working area of Mekar Health Center, Kendari City, is the variable of motivation to seek treatment with a Wald value of 13,789 with a sig value < 0.05, namely 0.000.

## DISCUSSION

The results of this study indicate that knowledge, motivation for treatment, and family support affect compliance with the treatment of hypertension patients in the Mekar Health Center work area of Kendari City. The results of the statistical test obtained a  $p$ -value = 0.045 < alpha value ( $\alpha = 0.05$ ) so that the hypothesis is accepted that there is a significant influence between the level of knowledge of hypertension and compliance with treatment of hypertension patients in the Mekar Health Center work area. The results of this study indicate that respondents with a high level of knowledge and compliance with treatment were 30 respondents (44.8%). This shows that respondents with a high level of expertise tend to be compliant with hypertension treatment. Who found a relationship between knowledge of hypertension and compliance with hypertension treatment? (Pristianty *et al.*, 2023) However, this study is not in line with research conducted at a health center, which stated that there was no significant relationship between knowledge and compliance with treatment in hypertension patients, especially in elderly hypertension patients (Yuliana, Haerati and suswani Makmur, 2023).

Knowledge is an essential domain for forming a person's actions and behavior. When patients have a good understanding of their disease condition, they are more likely to comply with the treatment and medical instructions given. This knowledge includes an understanding of the causes of the disease, symptoms, potential complications, and long-term benefits of treatment. As knowledge about hypertension increases, hypertensive patients can manage their disease so that

treatment goals can be achieved (Paczkowska et al., [2021](#)). No less critical knowledge related to hypertension is an understanding of risk factors, such as lifestyle, stress, and diet, which are often better understood by those who are more educated and of productive age. The study's results stated that increasing knowledge about hypertension among those of productive age can help reduce the incidence of hypertension through changes in attitudes and healthier behaviors, such as exercising and avoiding stress (Sumarni et al., [2023](#)).

This study showed that respondents with a high level of knowledge and who were not compliant with treatment were 12 people (17.9%). High knowledge about hypertension does not always guarantee behavioral changes. Many patients understand the risks of hypertension and its complications but are still inconsistent in taking medication or undergoing routine check-ups. In this case, psychological factors such as discomfort or fear and perceptions of drugs often affect patient compliance with treatment. In this study, there were several reasons why hypertensive patients were not compliant in taking medication; for example, they felt healthy, the perception that hypertension could not be cured, patients used traditional herbal medicine as an alternative, forgot to buy medicine, experienced unexpected effects, were busy so they did not often go to health care facilities, and the unavailability of hypertension drugs. Meanwhile, respondents who had low levels of knowledge and were not compliant were caused by minimal information from health workers regarding their treatment and lack of awareness of hypertension patients to take medication.

In the motivation variable, the statistical test results obtained a p-value = 0.000 <math>\alpha = 0.05</math>, so the hypothesis was accepted that there was a significant influence between motivation to seek treatment and compliance with therapy in hypertensive patients in the Mekar Health Center work area. More dominant respondents had high motivation to seek treatment, with 48 people (71.6%) being compliant, while one person (1.5%) was not compliant. Respondents who had low motivation to seek treatment and were compliant with treatment were five people (7.5%), and respondents who had low motivation and were not compliant were 13 people (19.4%). This shows that respondents with high motivation tend to be compliant with hypertension treatment.

This study's results align with the survey, which stated that a relationship exists between motivation to seek treatment and compliance with hypertension treatment. Hypertension patients motivated to control their blood pressure regularly will be more compliant with treatment because they know it is essential to avoid complications. Motivated patients are likelier to adopt lifestyle changes, self-monitor, and follow medication prescriptions closely (Ainiyah et al., [2023](#)).

Based on several studies, patient motivation plays a vital role in patient compliance with treatment. Research shows that highly motivated patients tend to be more compliant in taking medication and controlling their blood pressure. The study found that 56.9% of respondents with good motivation had a high level of compliance in taking (Mahardika and Adyani, [2023](#)). However, other studies state that motivation does not always correlate with compliance with hypertension treatment. Some patients may have high motivation or knowledge about the importance of managing hypertension but still fail to follow the prescribed treatment. Various factors, such as psychological barriers, perceived side effects of drugs, or lifestyle limitations, can prevent motivated individuals from effectively complying with their treatment plans (Ruswadi et al., [2023](#)).

Furthermore, on the family support variable, the results of the statistical test obtained a p-value = 0.000 <math>\alpha = 0.05</math>, so the hypothesis is accepted that there is a significant influence between family support and compliance with treatment in hypertension patients in the Mekar Health Center work area. Respondents with high family support and compliance with treatment were 44 people (65.7%), while those who were not compliant were four people (6.0%). Respondents who had low family support with compliant treatment were nine people (13.4%),

and those who were not compliant were ten people (14.9%). This shows that respondents who get high family support tend to be compliant with treatment.

These results are similar to those found in other studies, which revealed that family support contributed 61.8% to the treatment compliance of hypertensive patients. This shows that the role of the family is vital in helping patients adhere to their medication schedules and maintain their health (Konstantinou et al., 2020). However, the results of this study contradict a study conducted in Kenya. This study found no significant relationship between family support and treatment compliance, even though patients reported strong family support. The results showed that despite good family dynamics, other factors, such as lack of health knowledge, poor access to medicines, and limited family involvement in managing the condition, outweigh the potential benefits of family support (Xiong et al., 2023). Family support, whether emotional, instrumental, or informational, can help patients be more consistent in undergoing long-term therapy needed to manage hypertension (Siswati et al., 2023). Family support can be in the form of attention, motivation, and helping patients overcome obstacles during treatment, such as forgetting to take medication or feeling that treatment is no longer needed when symptoms subside (Wijayanti *et al.*, 2023).

The results of the multivariate analysis showed that the most dominant variable on medication compliance in hypertension patients in the Mekar Health Center Work Area, Kendari City, was the variable of motivation to seek treatment with a Wald value of 13,789 with a sig value <0.05 of 0.000. Motivation is a condition that drives or causes someone to do something that is done consciously. This drive often occurs because someone is experiencing emotional changes. The motivation of hypertensive patients to control their blood pressure is the desire or drive of a person to carry out activities to regulate blood pressure and undergo treatment. The purpose of preventing and treating blood pressure is to keep it stable to avoid symptoms and complications that can arise. Strong personal motivation, especially the desire to maintain health, encourages patients to be more disciplined in taking prescribed medication.

Motivation is a human psychological characteristic that contributes to a person's level of commitment, including factors that cause, channel, and maintain human behavior in a specific direction of determination (Demir, 2020). Motivation is vital in adherence to hypertension treatment, especially for patients with sufficient information about the risks and benefits of treating the condition (Duffy et al., 2021). Motivated individuals tend to be more compliant with treatment rules, implement lifestyle changes, and consult a doctor regularly, which will improve blood pressure control and reduce the risk of complications such as cardiovascular disorders. Researchers assume that the most influential respondents are motivated because respondents who have high motivation to obtain healing will find it easier to control their blood pressure. This shows a desire to recover and have a better quality of life.

## CONCLUSION

Knowledge, motivation to seek treatment, and family support affect compliance with treatment of hypertension patients in the working area of Mekar Health Center, Kendari City. Good knowledge about hypertension, high motivation to seek treatment, and high family support can improve compliance with the treatment of hypertension patients. The results of this study indicate the importance of enhancing hypertension patients' knowledge, motivation, and family support to improve patient compliance in seeking treatment. Health workers must develop an education strategy focusing on increasing patient motivation. Thus, health promotion can be directed at providing more practical information and support to improve compliance with hypertension treatment in the community.

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### Conflict of Interest

None declared.

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