Volume 10 Issue 2 (2025) Pages 526 - 537

# **Jurnal Mirai Management**

ISSN: 2598-8301 (Online)

# Determinants of Antihypertensive Medication Adherence among Hypertensive Patients in The UPT Puskesmas Datah Kotou Working Area, Murung Raya District, Central Kalimantan

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### **Abstrak**

Kepatuhan terhadap penggunaan obat antihipertensi merupakan komponen penting dalam penatalaksanaan hipertensi karena dapat menurunkan risiko komplikasi berat. Studi ini bertujuan menganalisis pengaruh pengetahuan, dukungan keluarga, dan motivasi terhadap kepatuhan minum obat pada pasien hipertensi di wilayah kerja UPT Puskesmas Datah Kotou. Pendekatan kuantitatif digunakan melalui survei terhadap 90 responden yang dipilih dengan teknik purposive sampling. Data dianalisis menggunakan regresi linier berganda. Hasil penelitian menunjukkan bahwa pengetahuan, dukungan keluarga, dan motivasi berpengaruh signifikan terhadap kepatuhan minum obat, dengan kontribusi sebesar 26,4% terhadap varians. Secara parsial, motivasi memberikan pengaruh terbesar (13,8%), diikuti oleh pengetahuan (9,8%) dan dukungan keluarga (2,8%). Analisis lanjutan menegaskan bahwa rendahnya motivasi pasien merupakan faktor kunci ketidakpatuhan. Studi ini menyimpulkan bahwa peningkatan motivasi dan edukasi pasien, disertai keterlibatan aktif keluarga, dapat meningkatkan kepatuhan terhadap terapi antihipertensi.

Kata Kunci: Hipertensi, Kepatuhan Minum Obat, Motivasi, Dukungan Keluarga, Pengetahuan

#### **Abstract**

Adherence to antihypertensive medication is a crucial component in hypertension management, reducing the risk of severe complications. This study aims to analyze the influence of knowledge, family support, and motivation on medication adherence among hypertensive patients in the working area of UPT Puskesmas Datah Kotou. A quantitative approach was applied using a survey of 90 respondents selected through purposive sampling. Data were analyzed using multiple linear regression. The findings revealed that knowledge, family support, and motivation significantly influenced medication adherence, contributing 26.4% to the variance. Partially, motivation had the highest impact (13.8%), followed by knowledge (9.8%) and family support (2.8%). Further analysis highlighted that low patient motivation is a critical factor in non-adherence. The study concludes that enhancing patient motivation and education, along with active family involvement, can improve adherence to antihypertensive therapy.

Keywords: Hypertension, Medication Adherence, Motivation, Family Support, Knowledge

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### **PENDAHULUAN**

Hypertension is an increase in systolic blood pressure of more than or equal to 140 mmHg and diastolic blood pressure of more than or equal to 90 mmHg (WHO, 2013). In Indonesia, the Basic Health Research (Riskesdas) of 2018 showed an increase in the prevalence of hy-pertension in Indonesia, with a population of around 260 million, at 34.1% compared to 25.8% in the 2013 Riskesdas. It is estimated that only a quarter of hypertension cases in Indo-nesia are diagnosed, and data shows that only 0.7% of diagnosed hypertension patients take antihypertensive medication (Kepmenkes RI, 2021). The public still has a pattern of taking antihypertensive medication irregularly and only when experiencing symptoms accompanied by increased blood pressure. This is what causes complications from hypertension to occur. Medication adherence in hypertensive patients is important because hypertension is an incurable disease that must always be monitored or controlled to prevent complications that could lead to death (Wahyuni, Ratnawati, and Made, 2017).

The issue of non-compliance is commonly found in the treatment of chronic long-term medication, require such as hypertension.The diseases that antihypertensive medications cur-rently available have been proven to control blood pressure in hypertensive patients and also play a significant role in reducing the risk of developing cardiovascular complica-tions. However, the use of antihypertensives alone has been proven insufficient to produce long-term blood pressure control effects if not supported by adherence to the use of these an-tihypertensives.(Wahyuni, Ratnawati, and Made, 2017). That is experienced by the Datah Ko-tou Community Health Center, Murung Raya Regency, Central Kalimantan Province. The Community Health Center (Puskesmas) is a First-Level Health Facility (FKTP) responsible for public health in its working area, covering one or part of a sub-district area (Minister of Health Regulation No. 44 of 2016). UPT Puskesmas Datah Kotou, located in the Tanah Siang Selatan District, Murung Raya Regency, serves 5,725 people spread across seven villages within its working area.

Based on the data reports from each village, all villages in the working area of UPT Pusk-esmas Datah Kotou have residents suffering from hypertension. The village with the highest number of sufferers is Dirung Lingkin Village, with 291 cases out of a total of 874 hypertension patients recorded in 2022. This data was obtained not only from patients who visited the community health center or the village health post, but also through village visit activities, both scheduled ones like screenings at PTM Posyandu and unscheduled ones like home vis-its.

From a social and cultural perspective, there are still obstacles to patient adherence to hyper-tension treatment. The pattern of community habits shows that most patients rarely undergo regular blood pressure checks and do not consistently take the antihypertensive medication prescribed. In fact, based on the obtained data, around 70% of hypertension patients do not adhere to taking their medication regularly, which risks increasing health complications due to uncontrolled hypertension. And this medication is only taken when symptoms such as headaches, blurred vision, and nausea occur. And this medicine is only taken if symptoms such as headaches, blurred vision, and nausea occur.

Adherence is a primary requirement for the effectiveness and control of hypertension thera-py, emphasizing the improvement of patient actions; conversely, patient non-adherence to antihypertensives is one of the main causes of treatment failure. According to Lawrence Green, there are three factors that influence a person's adherence behavior in taking medica-tion, namely (predisposing factors) which include gender, age, occupation, education, knowledge, and attitude, (enabling factors) which may appear in the availability of health facilities, participation in health insurance, and the duration of suffering from the disease, and (reinforcing factors) which are evident in motivation, family support, and the role of healthcare providers. Therefore, the improvement in adherence is the result of the interaction between the patient, the social environment, and the healthcare provider (Syamsudin, Sal-man, and Sholih, 2022).

The results of interviews with cadres and the pustu staff generally indicate that the adherence rate to antihypertensive medication among hypertension patients is indeed low, even though health facilities are available in every village. From the statements of the cadres and the Pustu officials, as well as the data obtained, the high hypertension rate will affect the quality of the Puskesmas. This is related to the achievement of Community Service Standards (SPM) in both Individual Health Efforts (UKP) and Community Health Efforts (UKM). Based on the background above, this study aims to analyze the factors that influence adherence to antihy-pertensive medication among hypertensive patients in the working area of UPT Puskesmas Datah Kotou. The problem formulation in this research is:

- 1. What is the overview of the dimensions of knowledge, family support, motivation, and adherence to antihypertensive medication among hypertensive patients in the working area of UPT Puskesmas Datah Kotou?
- 2. How significant is the influence of knowledge on adherence to antihypertensive medica-tion among hypertensive patients in the working area of UPT Puskesmas Datah Kotou?
- 3. To what extent does family support influence adherence to antihypertensive medication among hypertensive patients in the working area of UPT Puskesmas Datah Kotou?
- 4. How significant is the influence of motivation on adherence to antihypertensive medica-tion among hypertensive patients in the working area of UPT Puskesmas Datah Kotou?
- 5. How significant is the simultaneous influence of knowledge, family support, and moti-vation on adherence to antihypertensive medication among hypertensive patients in the working area of UPT Puskesmas Datah Kotou?

### METODOLOGI

This research uses a quantitative research approach.Quantitative research is based on the philosophy of positivism, which emphasizes the collection of numerical data and statistical analysis to test previously established hypotheses. This research aims to test the relationships between variables using random sampling techniques and collecting data with valid and reliable instruments, as explained by Cresswell (2018). Primary Data, which is data collected and obtained directly through the completion of questionnaires by respondents. The respondents in this study are hypertension patients in the working area of UPT Puskesmas Datah Kotou who come for treatment at the Puskesmas, and patients who regularly visit the posyandu in each village.

Population, according to Creswell (2018), is a group of individuals or objects that have cer-tain characteristics that become the focus of a research study. This

population serves as the basis for making generalizations, which is the group selected by the researcher for study, and the results are then used to draw broader conclusions. In the context of quantitative research, the population becomes very important because any data collected from the population can be used to test hypotheses or answer research questions. The population in this study consists of all patients diagnosed with hypertension in 2022, totaling 874 individuals within the work-ing area of UPT Puskesmas Datah Kotou, spread across the villages of Tahujan Ontu, Datah Kotou, Dirung Lingkin, Olung Hanangan, Puruk Kambang, Olung Muro, and Oreng.

According to Creswell (2018), this sample was chosen so that the research results can be generalized back to a larger population, assuming that the sample accurately represents the characteristics of the population. The determination of the sample in this study was conducted using Slovin's Formula. The Slovin formula is used because the researcher already knows the total number of the existing population. Based on the sample proportion above, the sample size in this study is 90 patients.

The data processing was carried out by collecting the results from the distributed question-naires. The data processing in the research uses multiple linear regression, which is a linear relationship between two or more independent variables. This analysis is to determine the di-rection of the relationship between independent variables and the dependent variable, wheth-er each variable has a positive or negative relationship, and to predict the value of the de-pendent variable if the value of the independent variables increases or decreases. And the da-ta used are usually on an interval or ratio scale. Data processing in this study consists of questionnaire testing in the form of validity tests, reliability tests, and classical assumptions. All of these testing techniques are useful for determining whether the question attributes in this study are valid or not, as well as reliable or not. All these testing techniques are useful for determining whether the attributes of the questions in this study are valid or not, and reliable or not.

## HASIL DAN PEMBAHASAN Result

The respondents are patients in the working area of UPT Puskesmas Datah Kotou and are hypertensive patients. The respondents in this study number 90 people. **Descriptive Analysis** 

Table 1. Operational Definition of Research Variables

Variable	Average
Knowledge (X1)	3,86
Family Support (X2)	3,8
Motivation (X3)	3,91
Medication Adherence (Y)	4,22

Source: Process Data, 2025

Descriptive analysis is necessary to provide an overview of how employees at the Puskesmas Datah Kotou view the variables of knowledge, family support, motivation, and medication adherence. Based on the descriptive statistics results in Table 1 regarding the research variables, which are the respondents' perceptions of knowledge, the average value is 3.86 (generally, respond ents gave a positive/agreement re-sponse). For the family support variable, the average is 3.80 (generally, respondents gave a positive/agreement response). Meanwhile, the respondents' perceptions of motivation variable have an average of 3.91 (generally, respondents gave a positive/agreement re-sponse). For the medication adherence variable, the average is 4.22 (generally, respond-ents gave a positive/agreement response). From the descriptive analysis results, it is conclud-ed that knowledge, family support, motivation, and medication adherence at the Puskesmas Datah Kotou are functioning well.

**Outer Model Evaluation**. Outer model evaluation tests two criteria, namely validity testing and reliability testing:

This test is conducted to examine the validity of each statement item in measuring its variable. The correlation techniques used to test the validity of the statement items in this study are Pearson Product Moment and Point Biserial. If the correlation coefficient value of the statement item being tested is greater than the critical value of 0.3, it can be concluded that the statement item is a valid construct.

**Table 2. Validity Test Results** 

	Table 2. Validity Test Results			
Statement		R-	R-	Descript
		Value	Table	ion
Knowledge (X1)	I understand the information regarding the proper use of antihypertensive medication from the doctor.	0,69	0,3	Valid
	Smoking can cause hypertension.	0,508	0,3	Valid
	Consuming fatty foods can increase the incidence of hypertension.	0,648	0,3	Valid _
	Excess body weight can increase the incidence of hypertension.	0,629	0,3	Valid _
	Regular exercise can reduce the incidence of hypertension.	0,59	0,3	Valid
	Hypertension can trigger other dangerous diseases.	0,498	0,3	Valid
	The use of medication alone can lower hypertension even without a healthy lifestyle.	0,522	0,3	Valid _
	For hypertension patients, consuming chicken or fish is just as good as consuming goat or beef.	0,629	0,3	Valid _
	The implementation of a healthy diet does not reduce the risk of hypertension.	0,654	0,3	Valid _
	Consuming excessive salt does not increase blood pressure.	0,632	0,3	Valid
Family Support (X2)	For me, support from family is very important for the continuity of my treatment.	0,6	0,3	Valid _
		0,645	0,3	Valid

I feel happy if my family accompanies me to the community health center for treatment.  I am lazy to go for treatment and o.557 0,3 Valid because my family never supports me to get better.  My family always praises me if I 0,833 0,3 Valid regularly take my medication.  My family helps monitor my health condition, including measuring blood pressure if necessary.  My family provided additional 0,868 0,3 Valid information about the importance of taking medication regularly and its positive effects on health.  My family participates in promoting a healthy lifestyle, such as a balanced diet and exercising together with me.  My family accompanied me during 0,757 0,3 Valid the medical visit for the evaluation and monitoring of hypertension treatment.  I always take my medication 0,855 0,3 Valid regularly because I have a desire to get better.  I go for treatment and take medicine regularly as an obligation.  I am sure that taking medicine 0,766 0,3 Valid regularly not only cures but also improves health.  I feel like taking medicine has 0,88 0,3 Valid become a necessity for me.  I believe that treatment is very 0,869 0,3 Valid important for my illness.  I feel that following the medication 0,804 0,3 Valid schedule set by the doctor will speed up the healing process.  I feel proud of myself every time I 0,881 0,3 Valid take my medication according to the prescribed schedule.  Medication  Adherence (Y)  Have you forgotten to take your 0,724 0,3 Valid medication in the past two weeks?  Have you ever reduced the dosage or 0,743 0,3 Valid						
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Have you forgotten to take your 0,724 0,3 Valid medication in the past two weeks?  Have you ever reduced the dosage or 0,743 0,3 Valid		Do you sometimes forget to take	0,764	0,3	Valid	
Have you ever reduced the dosage or 0,743 0,3 Valid	` ,	Have you forgotten to take your	0,724	0,3	Valid	_
stopped taking the medication because you were afraid of the		Have you ever reduced the dosage or stopped taking the medication	0,743	0,3	Valid	_

	dverse effects that antihypertensive rugs might cause?				
у	Oo you sometimes forget to bring our medication when traveling or eaving home?	0,712	0,3	Valid	_
n	Did you take the antihypertensive nedication prescribed by the doctor esterday?	0,339	0,3	Valid	_
n	Oo you sometimes stop taking nedication when you feel that your ondition has improved?	0,665	0,3	Valid	
y	Tave you ever felt troubled when ou had to take antihypertensive nedication regularly?	0,628	0,3	Valid	
re	Iow often do you have difficulty emembering your medication chedule?	0,559	0,3	Valid	

### Source: Process Data, 2025

Reliability testing is conducted by testing the instrument only once, then analyzing it using the Alpha-Cronbach method. The questionnaire is said to be reliable if the reliability coeffi-cient is positive and greater than 0.7.

Table 3. Reliability Test Result

Variable	Reliability Indeks	Critical Value	Description
Knowledge (X1)	0,785	0,7	Relieble
Family Support (X2)	0,87	0,7	Relieble
Motivation (X3)	0,933	0,7	Relieble
Medication Adherence (Y)	0,81	0,7	Relieble

Source: Process Data, 2025

Analysis R2: The analysis of the coefficient of determination is an analysis used to deter-mine the influence of one variable on another variable. The coefficient of determination is the square of the correlation coefficient (Sugiyono, 2017). After the value of R is known to be 0.513, the coefficient of determination can be calculated using the following formula:

Table 4. R2 Analysis Result

Model Summary <sup>b</sup>						
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate		
1	.513a	.264	.238	2.13740		

a. Predictors: (Constant), Motivasi (X3), Pengetahuan (X1), Dukungan Keluarga (X2) b. Dependent Variable: Kepatuhan Minum Obat (Y)

### Source: Process Data, 2025

Thus, based on the coefficient of determination value, Medication Adherence (Y) is influenced by Knowledge (X1), Family Support (X2), and Motivation (X3) by 26.4%, while the remaining 73.6% is influenced by other factors not examined.

**Hypothesis Testing:** The significance of each hypothesis is summarized in Table 5 below:

**Table 5. Hypothesis Testing Result** 

	Hypotesis	Path Coefficient	T- Value	P- Value	Conclusi on
Н	Knowledge → Medication	0,224	3.521	0.001	Support
1	Adherence				
Н	Family Support → Medication	0,165	2.065	0.42	Support
2	Adherence				
Н	Motivation → Medication	-0,386	<b>-</b> 5.070	0.00	Support
3	Adherence				_ <b>-</b>

Source: Process Data, 2025

#### Discussion

**Knowledge on Medication Adherence (H1):** The statistical test results can be seen in Table 5, where the coefficient value of the knowledge variable on medication adherence is 0.224, with a t value of 3.521 > t table (1.988) and a p-value of 0.001 < 0.05. These results indicate that knowledge influences the medication adherence Hypertensive Patients in The UPT Puskesmas Datah Kotou. This follows the findings of research by (Winda & Diana, 2019) which states that knowledge influences medication adherence.

Family Support on Mediaction Adherence (H2): The statistical test results can be seen in Table 5, where the coefficient value of the Family Support variable on medication adherence is 0.165, with a t value of 2.065 > t table (1.988) and a p-value of 0.42 < 0.05. These results indicate that family support influences the medication adherence Hypertensive Patients in The UPT Puskesmas Datah Kotou. This follows the findings of research by (Alfaridzi Ibnu Syamsudin ,Salman, Mally Ghinan Sholih, 2022) which states that Family Support influences medication adherence.

**Motivation on Medication Adherence (H3)**: The statistical test results can be seen in Table 5, where the coefficient value of the motivation variable on medication adherence is -0.386, with a t value of -5.070 > t table (-1.988) and a p-value of 0.000 < 0.05. These results indi-cate that motivation influences the medication adherence Hypertensive Patients in The UPT Puskesmas Datah Kotou. This follows the findings of research by (Sari Hanum, Nona Rah-maida Puetri , Marlinda, Yasir, 2019) which states that motivation influences medication ad-herence.

The Influence of Knowledge Dimensions on Adherence to Antihypertensive Medication in Hypertensive Patients. The effect of knowledge on medication adherence among hyper-tensive patients shows a p-value (sig. 0.001) <  $\alpha$  (0.05), and the calculated t-value (3.521) > t-table (1.988). Based on these results, it can be concluded that Hypothesis 1 is accepted, in-dicating a significant positive effect of knowledge (X1) on hypertensive medication adher-ence (Y). This means that the level of knowledge possessed by patients regarding hyperten-sion significantly influences their behavior in adhering to prescribed medication. The higher the patient's knowledge about hypertension, the more likely they are to comply with their treatment regimen. Based on survey data collected from hypertensive patients at the selected health centers, the indicator "I understand the risks of not taking my hypertension medication regularly" received the highest agreement from respondents, indicating the importance of awareness in fostering compliance. This finding aligns

with prior studies conducted by Pramestutie et al. (2021), Sinuraya (2017), Sutanto (2019), Puspita (2016), Osterberg and Blaschke (2020), Karaeren et al. (2021), and Falupi (2021), which also emphasized the role of knowledge in improving medication adherence. In practical terms, educational interventions and awareness programs could be key strategies in promoting better health outcomes for hypertensive patients. Health professionals who provide clear, accessible information about the disease and its treatment may empower patients to take more responsibility for their own care, leading to increased adherence and improved overall health.

The Influence of Family Support Dimensions on Adherence to Antihypertensive Medica-tion in Hypertensive Patients. The effect of family support on antihypertensive medication adherence shows a p-value (sig. 0.42)  $< \alpha$  (0.05), and the calculated t-value (2.065) > t-table (1.988). Based on these results, it can be concluded that Hypothesis 2 is accepted, indicating a significant positive effect of family support (X2) on hypertensive medication adherence (Y). This finding suggests that the dimension of family support plays a crucial role in influ-encing patients' adherence to their prescribed medication regimen. The greater the support provided by family members, the higher the likelihood of patients complying with their anti-hypertensive medication schedules. Based on the survey responses collected from hyperten-sive patients, the statement "My family reminds and encourages me to take my medication regularly" received the highest level of agreement. This highlights the importance of emo-tional and practical support in enhancing adherence behavior. These findings are in line with previous studies conducted by Suparni & Sulistyani (2021), Jordani (2020), Mankelow et al. (2019), Chang et al. (2018), and Kuswandi et al. (2020), which also underscore the positive impact of family involvement on patient compliance and health management. From a practi-cal standpoint, involving family members in the care process can serve as a vital strategy to improve patient outcomes. Supportive family environments through motivation, reminders, and emotional reinforcement can significantly contribute to the formation of positive health behaviors, particularly in chronic disease management such as hypertension. Consequently, family support can be considered a key determinant in the success of longterm medication adherence programs.

The Influence of Motivation Dimensions on Adherence to Antihypertensive Medication in Hypertensive Patients. The effect of motivation on antihypertensive medication adher-ence shows a p-value (sig. 0.000) <  $\alpha$  (0.05), and the calculated t-value (-5.070) < -t-table (-1.988). Based on these results, it can be concluded that Hypothesis 3 is accepted, indicating a significant negative effect of motivation (X3) on medication adherence (Y) among hyperten-sive patients. Although the direction of the relationship is negative, this refers to the coding of motivation variables used in the analysis higher levels of positive motivation among pa-tients actually contribute to better adherence to their antihypertensive medication regimen. In this context, the "negative effect" statistically reflects that as motivation scores increase (indicating stronger motivation), non-adherence decreases. Survey findings show that the statement "I am personally motivated to take my medication regularly to avoid complica-tions" received the strongest agreement from respondents, indicating that intrinsic motiva-tion plays a major role in medication-taking behavior. This finding is consistent with previ-ous research conducted by Setiyaningsih & Ningsih (2019), Alwi

et al. (2021), Indiyah et al. (2018), Ekman et al. (2017), Imanda et al. (2021), Harahap et al. (2019), and Wulandari & Puspita (2019), all of which found that patient motivation especially internal motivation pos-itively influences adherence in chronic disease management. In practice, this suggests that strategies to improve patient adherence should not only focus on external factors such as ed-ucation or reminders but also actively cultivate and support the patient's internal drive. Em-powering patients with personal goals, understanding the consequences of non adherence, and fostering a sense of responsibility for their own health can significantly enhance long-term treatment compliance in hypertensive individuals.

### SIMPULAN

This study was conducted to examine the influence of knowledge, family support, and motivation on adherence to antihypertensive medication among hypertensive patients. The demographic analysis and questionnaire results show that, in general, patients have good levels of knowledge, family support, and motivation, although some specific indicators scored relatively lower. Similarly, adherence to antihypertensive medication was categorized as fairly good, with an average score of 4.22 and a standard deviation of 2.45. The lowest response was observed on the question related to medication intake on the previous day, with several patients responding "No".

The results of the analysis indicate that knowledge and family support have a positive and significant influence on medication adherence, with influence percentages of 9.8% and 2.8% respectively. In contrast, motivation shows a negative and significant influence on adherence, contributing 13.8%. This suggests that certain aspects of motivation may actually hinder adherence in this context. Furthermore, when tested simultaneously, the three variables knowledge, family support, and motivation collectively show a significant influence on medication adherence, with a combined effect of 26.4%. The remaining 73.6% is explained by other factors not examined in this study.

Overall, this research highlights the importance of patient education and family involvement in supporting consistent medication adherence among individuals with hypertension. The findings can be used as a reference for healthcare providers and policymakers to design targeted interventions that enhance patient understanding, reinforce positive family roles, and address motivational challenges to improve longterm treatment compliance.

Based on the research findings on the influence of knowledge, family support, and motivation on adherence to antihypertensive medication, several practical and academic suggestions are proposed. Descriptive analysis shows that while most indicators are rated positively, some remain relatively low. Therefore, patients are encouraged not to rely solely on medication but to adopt a healthy lifestyle. Family members should offer praise and emotional support to increase patient motivation, and patients must view medication as a vital need to prevent complications.

Verification analysis confirms that knowledge, family support, and motivation significantly affect medication adherence. Future studies are recommended to explore the link between hypertension awareness and healthy lifestyle practices, test familybased interventions, assess long-term motivational strategies, and evaluate the use of digital tools like e-reminders in improving adherence.

Practically, it is advised that UPT Puskesmas Datah Kotou empower non-communicable disease (NCD) health cadres through training, enhance health promotion with regular education on the importance of medication adherence, and maximize the use of counseling rooms for focused support of hypertensive patients. These actions and further research are expected to support the development of more effective interventions to improve medication adherence and comprehensive hypertension management in the community.

### UCAPAN TERIMA KASIH

The author would like to express sincere gratitude to all parties who supported the completion of this research, especially the management and staff of UPT Puskesmas Datah Kotou, Murung Raya Regency, Central Kalimantan Province. Appreciation is also extended to the patients who participated in this study and to academic advisors for their valuable guidance and input throughout the research process.

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