

Adherence to Taking Anti-hypertensive Medication and Its Correlation to Blood Pressure

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Abstract. Hypertension is a lifelong disease that cannot be cured permanently, so many patients are bored and disobedient with medication, which causes uncontrolled blood pressure. Purpose: This study aimed to determine the relationship between medication adherence and blood pressure in hypertensive clients at the Geger Community Health Center. This research is a quantitative analytic study with a cross-sectional method approach. The research sample consisted of 38 hypertension sufferers at the Geger Community Health Center in Bangkalan, East Java, who were taken using a simple random sampling technique. Research variables include medication adherence and blood pressure. Data collection used the Morisky Medication Adherence Scale-8 adherence questionnaire and blood pressure measurements using a sphygmomanometer in July 2023. Data analysis used the Spearman rho test (α 0.05). Results: The results showed that the majority of hypertension sufferers showed adherence to taking medication in the low category (52.6%), had systolic and diastolic blood pressure values at grade 2 (160-169/100-109 mm-Hg) of 44.7% and 42.1%. Compliance with taking medication for hypertension sufferers is strongly correlated with systole and moderately correlated with diastolic (correlation coefficient 0.575 and 0.390). Conclusion: Compliance with antihypertensive medication has a good impact on blood pressure. It is hoped that family support and health workers will maintain motivation to comply with continuing hypertension care at home. Compliance with taking medication synergized with control adherence to health facilities, regular physical exercise, following a hypertension diet, and avoiding cigarette smoke, alcohol, and carcinogenic substances is expected to prevent sufferers from hypertensive crises and complications.

Keywords: Adherence to taking medication, Blood Pressure, Hypertension

1 INTRODUCTION

Hypertension is a *silent killer* because often happens without complaints, so the sufferer does not know himself experience the disease hypertension and new is known after happen complications (Berek & Afianti, 2020). Hypertension is a disease lifetime life that doesn't heal in a manner so that lots of patient feels boredom and do not obey treatment causing uncontrolled pressure blood (Dey et al., 2022). One influencing factor of pressure blood patient hypertension is the level of obedience (Nopitasari, Adikusuma, Qiyaam, & Fatmala, 2019) (Maunder & Hunter, 2021).

World Health Organization (WHO) data in the Indonesian Ministry of Health, (2019), shows an estimated 1.28 billion adults aged 30-79 years worldwide suffer from hypertension, most (two-thirds) live in low and middle-income countries. An estimated 46% of adults with hypertension are not aware that they have the condition. About 1 in 5 adults (21%) with hypertension can control it. Hypertension is the main cause of premature death worldwide. One of the global targets for non-communicable diseases is to reduce the prevalence of hypertension by 33% between 2010 and 2030 (WHO, 2023). The Health Profile of the Province of East Java in 2020 stated that the prevalence of people with high blood pressure in the Province of East Java was 36.3% with an estimated number of people aged ≥ 15 years of around 11,008,334 residents, with a

proportion of 48.83% male and 51 female. 17%. From this amount of data, 35.60% or 3,919,489 people with hypertension receive services.

The success of treatment is not only determined by adherence to controls but also by adherence to taking anti-hypertensive medication (Berhane & Worku, 2020). To adhere to taking medication, motivation from hypertensive patients is needed. Complications will occur if people with hypertension do not have the motivation to adhere to taking their medication (Burnier & Egan, 2019) (Wahyuni et al., 2019) (Choudhry et al., 2022). If the patient can comply with taking medication, his blood pressure will be controlled and avoid complications (Kusuma et al., 2020) (Nugraha et al., 2022). As a result of the occurrence of complications of hypertension, the quality of life of sufferers is low and the worst possibility is the occurrence of death in patients due to complications they have (Ramitha in Sulistyarini, et al, 2015) (Suprayitno & Huzaimah, 2020).

The Ministry of Health of the Republic of Indonesia explained that a joint effort is needed to make the public aware to always protect themselves and their families from Non-Communicable Diseases (PTM) by allowing PATUH behavior namely regular health checks and following doctor's recommendations, **Overcoming diseases** with appropriate medication and regularly, **Maintain** a diet with balanced nutrition, **Promote** physical activity safely and **Avoid** cigarette smoke, alcohol, and carcinogenic substances (Anita et al., 2016) (Dewi et al., 2022). In an effort to reduce hypertension, it can be done by monitoring blood pressure, managing lifestyle, and taking blood pressure-lowering drugs (Arifin, Z., et al., 2021) (Astiarani et al., 2023). It is hoped that this medication adherence work concept can apply and provide progress toward reducing blood pressure in hypertension clients in Indonesia.

This study aimed to determine the relationship between medication adherence and blood pressure in hypertensive clients at the Geger Community Health Center.

2 METHOD

This research is research quantitative analytics with a *cross-sectional method approach*. Research sample as many as 38 patients with hypertension at the Geger Bangkalan Health Center, East Java with the technique of *simple random sampling*. Variable study covers obedience drink medicine and stress blood. Data collection using questionnaire obedience drink drug *Morisky Medication Adherence Scale -8/MMAS-8* (Morisky & Muntner, 2009) and measurement pressure blood use sphygmomanometer which was implemented in July 2023. Compliance data drink drug categorized as become obedience high (score = 8), medium (score 6-8), and low (score < 6). Pressure systolic and diastolic blood is calcified using American Heart Association (AHA) guidelines for grade 1 (140-159/90-99 mmHg), grade 2 (160 - 179/100-109 mmHg), grade 3 (180-209/110-119 mmHg), and grade 4 (>210/>120mmHg). Data analysis used the *Spearman rho* test ($\alpha 0.05$).

3 RESULT

Table 1. Demographic Characteristics of Hypertensive at the Geger Bangkalan Health Center, July 2023

No.	Demographic Characteristics	Frequency	Percentage
1.	Age		
	41-50 years	7	18.5%
	51-60 years	17	44.7%
	61-70 years	10	26.3%
	71-80 years	4	10.5%
2.	Sex		
	Man	7	18.4%
	Woman	31	81.6%
3.	Education		
	No school	4	10.5%
	Elementary school	19	50.0%
	Junior High School	10	26.3%
	Senior High School	5	13.2%
	Amount	38	100%

Nearly half (44.7%) had hypertension with an age range of 51-60 years, and a small proportion (10.5%) with a range of 71-80 years. Most (81.6%) are of the type sex women, and some are small (18.4%). Half (50.0%) are educated in final Elementary School and some small (10.5%) no school.

Table 2. Compliance with taking medication for hypertension at the Geger Bangkalan Health Center, July 2023

Taking Medication Compliance	Frequency	Percentage
High	3	7.9%
Medium	15	39.5%
Low	20	52.6%
Total	38	100%

The majority of sufferers of hypertension show obedience to taking medicine (52.6%).

Table 3. Blood Pressure for Hypertension Sufferers at the Geger Bangkalan Health Center, July 2023

No	Blood Pressure	Frequency	Percentage
1	Systole:		
	Grade 1	7	18,4
	Grade 2	17	44,7
	Grade 3	10	26,3
	Grade 4	4	10,5
2	Diastole:		
	Grade 1	3	7,9
	Grade 2	16	42,1
	Grade 3	14	36,8
	Grade 4	5	13,2

No	Blood Pressure	Frequency	Percentage
	Amount	38	100

Pressure blood systolic and diastolic majority in grade 2 category Grade 2 category (160-179/100-109 mmHg) with percentages of 44.7% and 42.1%.

Table 4. Cross Tabulation Compliance Taking Medication and Systolic Blood Pressure Sufferer Hypertension at the Geger Bangkalan Health Center, July 2023

Systolic Blood Pressure	Obedience to Taking Medicine			Total
	High	Medium	Low	
Grade 1	2	4	1	7
Grade 2	1	9	7	17
Grade 3	0	2	8	10
Grade 4	0	0	4	4
Total	3	15	20	38

Three sufferers of hypertension who have obedience drink drug category tall there are 2 sufferers hypertension with pressure blood systolic Grade 1, and the rest in Grade 2. Fifteen patients with hypertension who have the obedience drink drug category currently, there are 4 sufferers with hypertension with pressure blood Grade 1 systolic, 9 patients with hypertension with pressure blood Grade 2 systolic, and 2 patients with hypertension with pressure blood Grade 3 systolic. Compliance drink drug category low as many as 20 patients with 1 patient with hypertension with pressure blood Grade 1 systolic, 7 patients with hypertension with pressure blood systolic Grade 2, 8 hypertension with pressure blood systolic Grade 3, and 4 patients with hypertension with pressure blood Grade 4 systolic.

Table 5. Cross Tabulation Compliance Taking Medication and Diastolic Blood Pressure Sufferer Hypertension at the Geger Bangkalan Health Center, July 2023

Diastolic Blood Pressure	Obedience Take Medicine			Total
	High	Medium	Low	
Grade 1	1	2	0	3
Grade 2	2	6	8	16
Grade 3	0	7	7	14
Grade 4	0	0	5	5
Total	3	15	20	38

Three sufferers of hypertension who have obedience drink drug category tall there is 1 patient with hypertension with pressure blood grade 1 diastolic, and the remaining 2 patients in Grade 2. Meanwhile, 15 patients with hypertension who have the obedience drink drug category currently there are 2 sufferers with hypertension with pressure blood Grade 1 diastolic, 6 patients with hypertension with pressure blood Grade 2 diastolic, and 7 patients with hypertension with pressure blood Grade 3 diastolic. Compliance drink drug category low as many as 20 patients with 8 sufferers of hypertension with pressure blood Grade 2 diastolic, 7 patients with hypertension with pressure blood Grade 3 diastolic, and 5 patients with hypertension with pressure blood Grade 4 diastolic.

4 DISCUSSION

Medication Compliance in Hypertension Clients

The level of adherence to taking medication in hypertensive clients who are the respondents in this study results study showing sufferer hypertension based on obedience drink drug obtained results that part big sufferer hypertension obedience drink drug with obedience low. From the results of these data, the community is not aware of the importance of maintaining health and the importance of complying with instructions or directions of health workers in terms of administering drugs, and taking medicines on time, as health workers always provide information regarding how to prevent hypertension because it is better to prevent than to treat. Compliance is the degree to which the patient carries out the treatment and behavior suggested by the doctor or by others. This is in line with research conducted (Imanda et al., 2021) that sufferer hypertension must consume drug every day and lifetime life so pressure control that can become burden for part sufferer . The results showed that most of the respondents had elementary school education, this was influenced by a person's low level of knowledge because he had only graduated from elementary school, this education was also closely related to the limitations of the community with compliance problems which could affect health status. This shows that low education causes non-compliance of respondents about the importance of health, especially about how to prevent disease and how to overcome it.

Blood Pressure in Hypertension Clients at Geger Bangkalan Health Center

The results showed that almost half of the respondents had blood pressure values between 160-179 mmHg (Grade 2). Of the 16 respondents, there were 14 respondents who were female with blood pressure values between 160-179 mmHg (Grade 2). Woman is group sufferer hypertension the most on this study. accordance with Basic Health Research data in 2018 which state that women (36.85%) have proportion hypertension more than male (28.80%) (Al Rasyid et al., 2022). Women who experience menopause occur hormonal changes i.e. decline comparison of estrogen and androgen so that happen enhancement renin release and triggering enhancement blood pressure. Compliance level dominant treatment in the group women in research This is level obedience medium. High blood pressure and lack of adherence to taking medication in people with hypertension are caused by failure to fill prescriptions, neglect of doses, errors in timing of drug consumption, and discontinuation of drugs prematurely . Non-compliance will result in the use of a drug that is less. Thus, the sufferer loses the benefits of therapy and may result in the condition gradually worsening.

Relationship of Medication Compliance with Hypertension Clients at Geger Bangkalan Health Center

The results of the study show that a small proportion of respondents have mild hypertension, almost half of the respondents have moderate hypertension, a small proportion of severe hypertension are almost entirely compliant in taking medication, while almost half of the respondents have severe hypertension, a small proportion are quite compliant in consuming drug. Hypertension is the most common disease suffered

by Indonesian people which can occur as a result of one of the problems that often arises from lifestyle changes, such as consuming foods with high salt content (Purwono et al., 2020) (Suharningsih, 2023). Hypertension is thought to be the cause of various serious diseases and their complications. hypertension in the elderly from modifiable risk factors such as headaches, obesity, nutrition and lifestyle as well as non-modifiable risk factors such as genetics, age, gender (Widjaya, 2019) (Khairani et al., 2020). Non-compliance can also result in excessive use of a drug. If excessive doses are used or if the drug is taken more frequently than intended, there is an increased risk of adverse reactions. This problem can develop, for example a client knows that he forgot a dose of medicine and doubles the next dose to fill it (Padila, 2018) (Khairani et al., 2020) (Tambuwun et al., 2021). Compliance is a form of behavior that arises as a result of the interaction between health workers and sufferers so that sufferers understand the plan with all its consequences and agree to the plan and carry it out (Ministry of Health RI, 2019) (Putri, 2022). In this study, it can be seen that adherence to taking medication greatly influences a person's prevention of hypertension. The more obedient or routine a person is with hypertension medication, the more aware he will be that prevention of hypertension is very beneficial for his health, with this awareness will form a concern, especially for his own health in preventing hypertension.

5 CONCLUSION

Majority obedience drink drug sufferer hypertension at Geger Health Center Bangkalan low with mark pressure blood systole and diastole grade 2. Compliance with taking medication is correlated strong with systolic blood pressure hypertension and correlation Enough with diastolic pressure.

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