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A Description of Antihypertensive Medication Adherence According to the Duration of Hypertension among Patients in the Working Area of Putri Ayu Primary Health Care, Jambi City

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Abstract

Introduction: Compliance with taking medication is the main determinant of treatment success. Hypertension is one of the most dangerous health problems in the world, because high blood pressure is a major risk factor that causes diseases such as stroke, heart failure, stroke and nephrosis. **Objective:** This study aims to determine the description of compliance with taking antihypertensive medication based on the length of time of suffering in hypertensive patients in the Putri Ayu Primary Health Care, Jambi City. **Method:** This study uses a descriptive quantitative method using a survey method. The population of this study was 31,615 people who visited the Putri Ayu Primary Health Care and consumed antihypertensive drugs in 2023, this sampling technique used a purposive sampling technique with 106 respondents. **Results:** The majority of respondents were aged between 46-65 years as many as 68 respondents (64.2%), the majority were female 58 respondents (54.7%), the majority had a high school education of 41 respondents (38.7%), the majority of respondents worked as housewives (IRT) 41 respondents (38.7%), Description of the level of compliance with taking antihypertensive medication in patients with new hypertension (<1 year) is mostly moderate at 10.4%. Description of the level of compliance with taking antihypertensive medication in patients with medium-term hypertension (1-5 years) is mostly low at 48.1%. Description of the level of compliance with taking antihypertensive medication in patients with long-term hypertension (> 5 years) is mostly low at 18.9%. **Conclusion:** The level of compliance of respondents based on the duration of treatment, the majority of respondents have a low level of compliance.

Keywords: Antihypertensive; Compliance; Duration of Suffering; Hypertension.

Introduction

In a healthcare context, adherence is defined as the extent to which a patient follows medical instructions. Non-adherence can be a significant problem, impacting not only the patient but also the healthcare system. Medication adherence is a key determinant of treatment success. Non-adherence leads to worsening illness, death, and increased healthcare costs. In developed countries, the long-term medication adherence rate in the general population is around 50%, while in developing countries, this figure is lower

(Anwar K, Masnina R, 2019).

One of the risk factors that can increase morbidity and mortality in people with high blood pressure is patient non-adherence in taking medication as prescribed by doctors. This is supported by analysis by Siswanto et al. (2020), who stated that approximately 70% of hypertension patients have a poor quality of life. The quality of life of hypertension patients is influenced by adherence to medical services, modifications to the mode and style of specific medical services consumed (Research J, Development DAN, Siswanto Y, 2020).

Hypertension is one of the most dangerous health problems worldwide, as it is a major risk factor for diseases such as stroke, heart failure, stroke, and nephrosis. In 2016, ischemic cardiopathy and stroke were the second leading causes of death worldwide (WHO, 2017).

Indonesia is one of the countries contributing to the incidence of hypertension. The Indonesian Ministry of Health states that hypertension is a disease with a high prevalence. Based on data from the Basic Health Research (Riskesdas), the prevalence of hypertension in Indonesia for those aged 18 and over in 2018 was 34.1%. The proportion of medication history and reasons for not taking medication among the hypertensive population included feeling healthy (59.8%), not regularly visiting health facilities (31.3%), taking traditional medicine (14.5%), frequently forgetting (11.5%), not being able to afford routine medication (8.1%), not being able to tolerate the side effects of medication (4.5%), and not having medication at the health facility (2%) (Citri Mokolomban et al., 2018).

The Jambi Province Health Profile (2022) shows that hypertension ranks second among the 10 most common diseases in Jambi Province's community health centers. The number of hypertension sufferers in Jambi Province increases annually. The prevalence of hypertension in Jambi Province in 2018 was 13.50%. In 2019, this figure increased to 18.50%. In 2020, it increased to 23.63%, and in 2021, it also increased to 31.70% (Jambi DKK, 2021).

According to data from the Jambi City Health Office, the number of hypertension sufferers in 2023 was 70,327. Based on the number of hypertension cases in Jambi City in 2023, Putri Ayu Community Health Center (Puskesmas) ranked highest among all community health centers in Jambi City, with 31,615 cases per year. Divided into five work areas, Legok sub-district had 9,137 cases, Solok Sipin 7,034 cases, Sungai Putri 6,060 cases, Murni sub-district 3,586 cases, and Selamat sub-district 5,798 cases.

Another factor influencing medication adherence is the duration of hypertension. Duration of hypertension has a positive correlation with medication adherence. 8 This is because individuals who have long suffered from hypertension benefit from regular treatment to prevent complications. However, other studies have shown different results. A study in Pamekasan showed a negative correlation between duration of hypertension and medication adherence. The study concluded that the longer a person has had hypertension, the less compliant they are with taking antihypertensive medication. This condition is related to boredom with taking antihypertensive medication and the onset of hypertension (Susanto A, Purwantiningrum H, 2023).

Previous research above shows differences in results regarding the effect of duration of hypertension on medication adherence. Based on research conducted by Ulhaq LZ, et al. (2022), regarding the Overview of Medication Adherence Levels in Hypertension Patients in the Muka Community Health Center, Cianjur Regency, it was relatively low, with results of 50.25%. This is feared to increase comorbidities in hypertension patients and reduce treatment success. According to Riani DA and Putri LR, in 2023, 107 respondents (42.8%) were in the low compliance category, 67 (26.8%) were in the moderate compliance category, and 76 (30.4%) were in the high compliance category (Susanto A, Purwantiningrum H, 2023).

Based on a preliminary study on September 30, 2024, among hypertension patients in the Putri Ayu Community Health Center in Jambi City, researchers interviewed five patients. On average, the patients had been suffering from hypertension for more than a year, and of those receiving monthly medication, three of the five patients regularly took their medication. Two of the five patients reported that they sometimes missed their medication within a week, resulting in a longer duration of use. Patients reported returning to the community health center only after the medication had run out, or if they experienced symptoms such as dizziness, stiffness in the neck, or other complaints. Patients reported that their hypertension was hereditary and influenced by their dietary preferences, such as a preference for salty, coconut milk-based, and fatty foods.

Putri Ayu Community Health Center in Jambi City was chosen as the research location because a survey of hypertension patients at the center found it to have the highest number of hypertension sufferers in 2023. This prompted researchers to conduct a study at the center entitled "Description of Antihypertensive Medication Compliance Based on

Duration of Suffering in Hypertension Patients in the Work Area of Putri Ayu Community Health Center in Jambi City."

Methods

The type of analysis used in this study is quantitative analysis. The quantitative analysis strategy is a square-measure analysis strategy that uses knowledge in the form of numbers and emphasizes objective measurement of results using mathematical analysis. This study employed a quantitative descriptive research design using a survey method. This study was conducted at the Putri Ayu Community Health Center in Jambi City. The study was conducted in August 2025 among hypertensive patients visiting the Putri Ayu Community Health Center in Jambi City. The population in this study was 31,615 patients. There were 106 respondents. The sampling technique was determined using purposive sampling. This analysis used a questionnaire data collection methodology.

The questionnaire used in this study was completed by the researcher based on data obtained from respondents who met the inclusion criteria. The questionnaire in this study was closed-ended. Answers to the questions or statements contained in the questionnaire were listed; respondents only needed to choose the answer that best suited their individual circumstances. The instrument used was sourced from Morisky D & Munter P, New medication adherence scale versus pharmacy fill rates in seniors with hypertension, American Journal of Managed Care, 2009 in Riani D.A's research in 2017.

Results

Table 1. Distribution of Respondents' Characteristics (n = 106)

No	Characteristics	Frequency (n)	Percentage (%)
1.	Age		
	a. Adolescents (12–25 years)	0	0
	b. Adults (26–45 years)	36	34
	c. Late adults (46–65 years)	68	64,1
	d. Elderly (> 65 years)	2	1,9
2.	Gender		
	a. Male	48	45,3
	b. Female	58	54,7
3.	Education Level		
	a. Primary School	5	4,7
	b. Junior High School	29	27,4
	c. Senior High School	41	38,7
	d. Diploma/Bachelor's Degree	31	29,2
4.	Occupation		
	a. Unemployed	41	38,7

No	Characteristics	Frequency (n)	Percentage (%)
	b. Private Employee	14	13,2
	c. Entrepreneur	35	33
	d. Civil Servant	5	4,7
	e. Others	11	10,4

Based on table 1, the frequency distribution of respondent characteristics based on age, the majority of research respondents are included in the late adult category with 68 respondents (64.2%), the characteristics of respondents based on gender, the majority of respondents are female with 58 respondents (54.7%) and male with 48 respondents (45.3%), based on the last education, the majority of respondents have a high school education with 41 respondents (38.7%), and the frequency of respondent characteristics based on work, the majority of respondents are not working with 41 respondents (38.7%).

Table 2 Distribution of Duration of Hypertension

Duration of Hypertension	f	%
a. < 1 year	22	20,8
b. 1-5 years	59	55,6
c. > 5 years	25	23,6
Total	106	100%

Table 2 shows the frequency distribution of the duration of treatment for hypertension patients, including the characteristics of respondents based on the duration of treatment. The majority of respondents suffered from hypertension for 1-5 years, namely 59 respondents (55.6%).

Table 3 Distribution of Respondents' Blood Pressure

Blood Pressure Category	F	%
a. Normal (120-139/80-89)	49	46,2
b. Hypertension Grade I (140-159/90-99)	43	40,6
c. Hypertension Grade II (160-179/100-109)	14	13,2
d. Hypertension Grade III ((>180/>110)	0	0

Based on table 3, the distribution of the frequency of respondents' blood pressure, the majority of respondents had normal blood pressure (120-139/80-89) as many as 49 respondents (46.2%), as many as 43 respondents (40.6%) were included in the category of grade I hypertension (140-159/90-99) and 14 respondents (13.2%) were in the category of grade II hypertension (160-179/100-109).

Table 4 Distribution of Medication Adherence Levels

No.	Medication Adherence Level	Frequency	Percentage (%)
1.	High	11	10,4
2.	Moderate	19	17,9
3.	Low	76	71,7
Total		**106**	**100**

Based on Table 4, the distribution of the level of compliance in taking antihypertensive medication can be seen that more than half of the total respondents have a low level of compliance, namely 68 respondents (71.7%). Then, respondents with a moderate level of compliance are 19 respondents (17.9%), and finally respondents with a high level of compliance are 10 respondents (10.4%).

Tabel 5 Medication Adherence Based on Duration of Hypertension

Variable		Adherence					
Duration of Hypertension	**N**	**Low n (%)**		**Moderate n (%)**		**High n (%)**	
		N	**%**	**N**	**%**	**N**	**%**
< 1 year	22	5	5,7	11	10,4	6	4,7
1–5 years	59	51	48,1	4	3,8	4	3,8
> 5 years	25	20	18,9	4	3,8	1	0,9
Total	**106**	**76**	**71,7**	**19**	**17,9**	**11**	**10,4**

Based on table 5, the description of compliance with taking antihypertensive medication based on the duration of suffering in hypertensive patients can be seen in the category of <1 year suffering from hypertension, the majority have a moderate level of compliance with 11 respondents (10.4%), in the category of respondents suffering from hypertension for 1-5 years, the majority have a low level of compliance with 51 respondents (48.1%) and in the category of respondents suffering from hypertension > 5 years, the majority have a low level of compliance with 20 respondents (18.9%).

Discussion

The age classification of respondents revealed that the highest number of hypertension sufferers was 46-64 years old, with 68 respondents (64.2%). This aligns with research by Sartik et al. (2017), which stated that one of the factors associated with hypertension is age. Respondents of productive age have better compliance than older

respondents, as their organs and senses are still functioning well enough to perceive a response (Sartik S, et al., 2017).

This is supported by the results of research by Ayuchecaria, et al. (2018), which found that the highest number of respondents was in the 50-57 age group (46.11%). This is because at this age, the immune system begins to decline and organ function also begins to decline. The 58-65 age group showed a decline. This is because elderly people tend to seek treatment at hospitals/community health centers due to more complex illnesses (Ayuchecaria N, et al., 2018).

Researchers assume that the respondents in this study were predominantly aged 46-65 years. This is because as a person ages, organs such as the heart and blood vessels experience a decline in function, which can lead to hypertension. The increasing prevalence of hypertension with age is associated with increased sodium sensitivity and increased blood vessel stiffness in individuals aged 46 and over.

Based on data analysis conducted on 106 respondents, the gender characteristics showed that the majority were female (54.7%), with a total of 58 respondents. This is in line with the results of research by M. Yunus et al. (2021), which found that women are more likely to suffer from hypertension than men. In that study, 27.5% of women experienced hypertension, compared to only 5.8% of men. Women experience an increased risk of high blood pressure (hypertension) after menopause, namely after the age of 45. Premenopausal women are protected by the hormone estrogen, which plays a role in increasing High Density Lipoprotein (HDL) levels. Low HDL cholesterol and high LDL (Low Density Lipoprotein) cholesterol levels influence the process of atherosclerosis and lead to high blood pressure (Muhammad Yunus, I Wayan D, 2021).

Therefore, researchers can conclude that the risk of hypertension increases with age. Women who have not yet experienced menopause certainly have a lower risk than men of the same age group. However, after age 50, women become more at risk of developing hypertension than men. At this age, women generally experience menopause, a condition that makes women more susceptible to hypertension.

Based on data analysis conducted on 106 respondents, based on their highest level of education, the majority of respondents had a high school education (41 respondents (38.7%), and the fewest had an elementary school education (5 respondents (5.2%). This is in line with research by Larasati (2021), which states that education can improve health

compliance. Education is crucial in influencing a person's thinking. When faced with a problem, an educated person will strive to solve it as best as possible. The educational process can involve a series of activities, resulting in individuals achieving better adherence, understanding, and insight, including adherence and attitudes toward medication information (Retnaningsih D, et al., 2021).

Researchers assumed from the study results that respondents with higher education would have broader knowledge than those with lower levels of education, thus increasing their level of adherence. The higher a person's education level, the more readily they accept the information provided. Respondents with lower education are at risk of non-adherence to treatment.

Based on the analysis of respondent data in this study, the most common occupation was unemployed (41 respondents (38.7%). This aligns with research by Mangendai, RompasSefti, and Hamel (2017), which explains that women who are unemployed or solely housewives are at higher risk of developing hypertension than employed women. This is because those with hypertension who work as housewives are too busy with household chores, making them reluctant to go to the community health center or other healthcare facilities for treatment (Mangendai, et al., 2017).

Researchers assume they interact more with others, thus gaining more information, which can broaden their knowledge. Furthermore, housewives who engage in light physical activity can lead to overnutrition or obesity. This leads to weight gain, which can affect heart rate and blood insulin levels, making them more susceptible to high blood pressure and diabetes.

Based on the analysis of data on the duration of treatment for hypertensive patients, the majority of respondents (53 respondents (55.2%) had suffered from hypertension for 1-5 years. 22 respondents (22.9%) had suffered from hypertension for more than 5 years, and 21 respondents (21.9%) had suffered from hypertension for less than 1 year. This is in line with research by Indriana et al. (2020), which found that the duration of hypertension significantly influences knowledge regarding medication use. Experience is a key factor influencing a person's knowledge. The longer a person has suffered from hypertension, the greater their experience with the disease. The more experience a person has, the greater their knowledge (Farisya MR, et al., 2024).

Researchers assume that the longer a person suffers from hypertension, the more familiar they become with the disease, taking medications, and taking them regularly. This allows them to adapt and accept their current condition, allowing them to adhere to the treatment regimen.

Based on the analysis of the frequency distribution of blood pressure data, the majority of respondents (46.2%) had normal blood pressure (120-139/80-89), 40.6% fell into the stage I hypertension category (140-159/90-99), and 13.2% fell into the stage II hypertension category (160-179/100-109).

According to (Mancia et al., 2018) blood pressure can be categorized as normal when systolic blood pressure is 120-129 and diastolic blood pressure is 80-84, categorized as prehypertension if systolic blood pressure is 130-139 and diastolic blood pressure is 85-89, categorized as grade 1 hypertension if systolic blood pressure is 140-159 and diastolic blood pressure is 90-99, then categorized as grade 2 hypertension if diastolic blood pressure is 160-179 and systolic blood pressure is 100-109, and categorized as grade 3 hypertension if systolic blood pressure reaches >179 and diastolic blood pressure reaches >109. It is agreed that the target for controlled blood pressure is <140/90 mmHg, if blood pressure exceeds the target or does not reach the target <140/90 mmHg, blood pressure cannot be said to be controlled (Komariah M, et al., 2020).

Overview of Antihypertensive Medication Compliance Based on Duration of Suffering

Based on data analysis of the MMAS questionnaire, 67.9% of respondents never forgot to take their medication. 37.7% of respondents stated they had never missed a dose in the past two weeks. 75.5% of respondents never reduced or stopped taking their medication without telling their doctor because they felt worse or uncomfortable while taking the medication. 87.7% of respondents reported taking all their prescribed medication yesterday. 14.2% of respondents said they felt comfortable and didn't feel bothered by having to take their medication every day. 29.2% of respondents also stated they never forgot to take their medication. 79.2% of respondents stated that when their condition improved, they never stopped taking their medication. 62.3% of respondents always took their medication when traveling away from home.

This is consistent with research by Mathavan and Pinatih (2017), which stated that the causes of non-adherence in antihypertensive medication use in a survey were that

patients frequently forgot to take their medication, missed regular check-ups with their doctor, and stopped taking the medication when symptoms improved. This is because hypertension often does not cause specific symptoms or complaints, making it difficult for sufferers to recognize (Mathavan J, Pinatih GNI, 2017).

Adherence to medication is beneficial for achieving successful therapy, slowing disease progression, and preventing complications. Based on data analysis, it was found that more than half of the respondents had low adherence (71.7%). This was followed by respondents with moderate adherence (17.9%), and finally, respondents with high adherence (10.4%).

Lack of knowledge about medication makes adherence difficult. Poor adherence to medication has detrimental consequences for patients. This means uncontrolled blood pressure, which in the long term can lead to hypertension complications such as stroke and chronic kidney failure (Garcia AR, et al., 2020).

This study also found that patients who came to Putri Ayu Community Health Center with hypertension symptoms generally had low adherence. A lack of understanding of their condition was also one reason why they stopped taking their medication, as their blood pressure dropped after taking antihypertensive medication, believing the condition was cured.

Based on the data analysis, an overview of antihypertensive medication adherence based on duration of hypertension was obtained. For those with hypertension less than 1 year, the majority had moderate adherence (10.4%), those with hypertension for 1-5 years (48.1%), and those with hypertension for more than 5 years (18.9%).

This is in line with research conducted by Rasyid et al., 2022, which stated that patients who have had hypertension for less than one to five years tend to be more compliant with medication due to their strong curiosity and desire for recovery, which is why they regularly visit the community health center. Meanwhile, patients who have had hypertension for more than five years tend to have poorer medication adherence. This is due to the greater experience of patients who have complied with treatment but have not achieved satisfactory results, leading to a tendency to give up and not adhere to the treatment process (Garcia AR, et al., 2020).

The results of this study align with research by Shofiana R, et al., 2022, which found more respondents with hypertension for less than five years. This may be because the longer a

person has had hypertension, the more likely they are to become weary of seeking treatment, especially if the level of recovery they have achieved does not meet expectations. Therefore, the majority of patients seen at the community health center in this study also had hypertension for less than five years.

39 The lack of awareness among hypertensive patients to comply with taking antihypertensive medication on time and to comply with repeat prescriptions when they run out indirectly causes the patient's condition to worsen, leading doctors to add more medications. Increasing the number of medications makes hypertensive patients less likely to comply because they feel bored with treatment due to the side effects of the medication (Farisya MR, et al., 2024). Therefore, it can be concluded that the majority of patients with long-term hypertension have a low level of compliance because they have passed a phase where hypertension is difficult or even incurable and must routinely take medication continuously. This often makes patients resigned to the situation that will occur, making them less compliant with treatment. Furthermore, increasing the dosage and type of medication can also reduce the level of patient compliance with treatment.

Conclusion

This study concludes that the majority of respondents were aged between 46 and 65 years, female, had a senior high school educational background, and were not employed. Regarding medication adherence, patients with newly diagnosed hypertension (< 1 year) mostly demonstrated a moderate level of adherence to antihypertensive medication. In contrast, respondents with medium-term hypertension (1–5 years) and long-term hypertension (> 5 years) predominantly exhibited low levels of medication adherence. These findings indicate a decline in adherence to antihypertensive therapy as the duration of hypertension increases, highlighting the need for sustained nursing interventions focusing on long-term medication adherence among patients with hypertension.

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