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The Relationship Between Medication Compliance and Blood Pressure in Hypertensive Elderly at Limboto Health Center

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ABSTRACT

Hypertension is a condition when arterial blood pressure rises steadily above normal limits and lasts for a long time. The high prevalence of hypertension is still caused by the low compliance of hypertensive patients in taking antihypertensive drugs. This study aims to determine the relationship between medication adherence to medication and blood pressure in hypertensive elderly at Limboto Health Center. This research is a type of quantitative research with a cross sectional approach. The population in this study is 246 elderly hypertensive patients registered at Prolanis at the Limboto Health Center. The research sample amounted to 38 hypertensive elderly people who were taken using a non-probability sampling technique with an accidental sampling approach. The research instrument used the Morisky Medication Adherence Scale (MMAS-8) questionnaire to measure the level of adherence to taking medication. The data analysis used was the Chi-Square test. The results showed a p value of 0.002 ($p < 0.05$), which means that there is a significant relationship between medication adherence to blood pressure in hypertensive elderly people. This research is expected to be the basis for the health center in improving health education, monitoring medication adherence regularly, and involving families in treatment supervision so that blood pressure control in the elderly can be achieved optimally and sustainably.

INTRODUCTION

Hypertension is a condition when arterial blood pressure rises steadily above normal limits and lasts for a long time. This condition is characterized by an increase in systolic blood pressure reaching 140 mmHg or more and diastolic blood pressure reaching 90 mmHg or more, based on the average of several measurements at different times. Persistently high blood pressure will cause the heart to work harder in pumping blood throughout the body, thus putting an extra load on the artery walls (Suwanti, 2024)

According to data from World Health Organization (WHO) in 2023, the prevalence of hypertension in the age group of 30–79 years in Indonesia reached around 40% in men and 36% in women, with the average adult population experiencing high blood pressure reaching 45%. This figure exceeds the world average (±34%), placing Indonesia in the third highest position in Southeast Asia after Myanmar and Laos, and is among the 20% of countries with the highest prevalence of hypertension globally. This condition shows a large burden of disease: there are an estimated 51.3 million adults living with hypertension in Indonesia, but only 36% have been diagnosed, 19% have received treatment, and only 4% have managed to achieve blood pressure control. The findings indicate that many undetected cases and low levels of treatment adherence remain a serious public health problem (WHO, 2023)

Future projections show that by 2025 the number of people with hypertension is expected to reach 1.5 billion people. Even more worryingly, each year this disease is estimated to cause around 9.4 million deaths worldwide, making it one of the main risk factors affecting global public health (Sundari, 2023)

According to the results of the 2023 Indonesian Health Survey (SKI), the prevalence of hypertension in the population aged ≥18 years in Indonesia is still relatively high, which is 30.8% when measured directly from blood pressure. However, based on the doctor's diagnosis, only about 8.6% were identified, indicating that many cases of hypertension have not been detected and have not received adequate medical treatment. If analyzed by province, the prevalence figure shows quite significant variation. Gorontalo Province, for example, shows a prevalence of hypertension of 28.4% based on blood pressure measurements, and 8.7% based on doctor's diagnosis. Nationally, Gorontalo is ranked 20th out of 38 provinces, indicating that the rate of hypertension in this region is still quite high and has the potential to increase without optimal control efforts. Several other provinces also showed high prevalence, including Central Kalimantan (40.7%), South Kalimantan (35.8%), West Java (34.4%), East Java (34.3%), East Kalimantan (33.8%), Central Java (32.9%), DI Yogyakarta (31.8%), and South Sulawesi (31.3%). This condition confirms that hypertension in Gorontalo remains a serious public health challenge, given the low rates of early detection and treatment adherence. Therefore, further research is needed to evaluate factors that affect blood pressure control, including the adherence of the elderly in undergoing hypertension therapy (Heny, 2023)

However, the 2023 SKI report has not provided data that specifically shows the prevalence of hypertension in the elderly group (≥60 years old). To get an idea of the elderly age group, researchers refer to the 2018 Rikesdas Basic Health Research, which shows that the prevalence of hypertension tends to increase with age. The results of direct blood pressure measurement showed a prevalence of 57.6% at the age of 65–74 years and 63.8% at the age of ≥75 years. Meanwhile, if referring to a doctor's diagnosis or the use of antihypertensive drugs, the prevalence was recorded at 24.53% in the 65–74 age group and 25.26% in the age of ≥75 years. These findings confirm that the risk of hypertension increases with age (Health Research and Development Agency, 2018). Meanwhile, based on data obtained from the Limboto Health Center from a total of 246 elderly people, it is known that the age group of 60-69 years is the most experienced hypertension, namely 163 people (66.3%), while the age group of ≥70 years is 83 people (33.7%). These results show that the prevalence of hypertension in the elderly is still quite high, especially in the age group of 60–69 years. These findings indicate that as we age, the risk of increased blood pressure remains high, making hypertension one of the major health problems in the elderly population. This condition emphasizes the importance of blood pressure control through increased adherence to medication to prevent complications due to hypertension in old age (Limboto, 2025)

Based on data from the Gorontalo Provincial Health Office in 2023, the prevalence of hypertension in Gorontalo Province reached 28.4% based on the results of blood pressure measurements, while those detected through a doctor's diagnosis were only 8.7%. In 2024, according to a report from the Sehat Indonesiaku (ASIK) application, the prevalence of hypertension in Gorontalo province will be 12.56% of 734,245 screening participants. If broken down by region, Bone Bolango Regency recorded the highest figure of 18.49%, followed by Gorontalo Regency at 17.52%, and North Gorontalo Regency at 12.61%, while Gorontalo City with 6.28%. Entering 2025 (report until August), the prevalence of hypertension has increased again to 18.45%, with the number of cases 47,886 out of a total of 259,566 people who took part in screening. In order, the highest prevalence was found in Gorontalo Regency (31.16%), followed by Boalemo Regency (13.54%) and Bone Bolango Regency (10.36%). Meanwhile, North Gorontalo Regency and Gorontalo City recorded the lowest prevalence of 6.39% respectively (Gorontalo Health Office, 2025)

Based on data from the Gorontalo Regency Health Office in 2024, the estimated number of hypertension patients over the age of 15 years has reached a fairly high number and is spread across various sub-districts. From the available data, it can be seen that there are five regions with the highest number of hypertension patients. First, Limboto District ranks at the top with a total of 10,670 cases (4,517 cases of males and 6,153 cases of females). This figure shows the largest burden of hypertension cases in Gorontalo Regency. Second, Telaga Biru District with a total of 9,449 cases, consisting of 3,490 men and 5,959 women. This number is quite close to the number of cases in Limboto District. Third, West Limboto District with a total of 6,743 patients, consisting of 2,753 men and 3,990 women. Fourth, Telaga District recorded 5,909 cases (2,144 men and 3,765 women). Fifth, Pulubala District with the number of hypertension patients reached 5,121 cases, consisting of 1,897 men and 3,224 women (Gorontalo Regency Health Office, 2024)

The high prevalence of hypertension is still caused by the low compliance of hypertensive patients in taking antihypertensive drugs. Medication adherence can be interpreted as the extent to which the patient follows the rules of therapy recommended by health workers. This not only includes regularity in taking medications, but also the accuracy of dosage, frequency, time, and how to use in accordance with the prescribed medical instructions so that it plays a big role in supporting the success of treatment (Lin, 2021)

The elderly group needs special attention regarding adherence to medication, because in old age there are various physiological changes that can affect the effectiveness of therapy. These changes make the drug work differently than in younger individuals, so the elderly are more susceptible to side effects and often need lower doses. This condition also makes treatment more complex. Many elderly people face difficulties when taking medication, such as forgetfulness, decreased memory ability, visual impairment, difficulty in holding medication, and lack of understanding of the importance of taking medication regularly (Gani A, 2023)

In the elderly, one of the biggest challenges in controlling hypertension is low adherence to prescribed medication. Although lifestyle changes, such as adopting a healthy diet or increasing physical activity, can help lower blood pressure, these measures are often not enough if medications are not taken regularly. This phenomenon of low compliance is the main factor in blood pressure in the elderly often not being controlled, so the risk of complications and burdens for the health system remains high. Therefore, it is important to understand the factors that affect medication adherence in the elderly so that hypertension management strategies can be designed more targeted and effective (Stanhope M, 2021)

Non-compliance in taking antihypertensive drugs can have serious health consequences. The impact of non-compliance in the use of drugs can have effects Rebound, which is a condition when blood pressure that was previously controlled with medication actually increases sharply after treatment is stopped. If you only occasionally forget to take your medication, the impact may not be too great. However, if the habit of stopping medication is done too often because you feel that the body is healthy, then the risk of rebound will be higher. Therefore, the importance of adherence to medication (Herda, 2021)

Medication adherence is the main factor that plays a role in blood pressure control in the elderly with hypertension. Elderly people who are disciplined in following a treatment regimen tend to have more stable and controlled blood pressure compared to those who do not comply. Elderly people who are obedient to taking medication have efforts to improve their adherence which can be done through simple strategies such as the use of a partitioned medicine box to separate daily or weekly doses, as well as involving family members in reminding them of medication consumption schedules. This helps the elderly in managing their medication more regularly so that it has a positive impact on blood pressure stability (Primanitha, 2024)

A preliminary study conducted by researchers at the Limboto Health Center on August 29, 2025 by interviewing 5 elderly people with hypertension showed that there were 2 elderly people with hypertension who admitted to routinely taking antihypertensive drugs according to the recommendations of health workers. They also admitted that they never missed time taking medicine, both when they felt healthy and when they experienced complaints. However, there are still 3 elderly people with hypertension who say they have not been consistent in carrying out therapy recommendations.

RESEARCH METHODS

This research is a quantitative research. The research design used in this study is descriptive analytics with an approach cross sectional, an observational model that simultaneously measures independent and dependent variables at a single point in time of data collection. The analytical descriptive research method aims to describe or provide an overview of an object being studied, while the approach method cross sectional is a type of research that emphasizes the measurement or observation of independent variable and dependent variable data that is carried out once at a time (Zulleika, 2022). This method was used to determine the relationship between medication adherence to blood pressure in the hypertensive elderly at the Limboto Health Center. This research has been carried out at the Limboto Health Center. This research was carried out on November 27 - December 06, 2025. The sample used in this study amounted to 38 samples.

Data collection techniques

Primary Data

Primary data is data obtained directly from the original source by the researcher for the purposes of specific research (Dede, 2024). Primary data obtained from the measurement results using questionnaires and observation sheets given directly to elderly patients at the Limboto Health Center.

Secondary Data

Secondary data is data obtained by researchers from other parties or institutions that have previously collected and processed the data for purposes different from the research being conducted (Dede, 2024). The secondary data in this study is the annual report of the Limboto Health Center.

Data Collection Methods

Data collection methods are methods or techniques that are used systematically to obtain information relevant to the purpose of the research. In research, the selection of the right method aims to ensure that the data obtained is valid, trustworthy, and in accordance with the research question or hypothesis. This method is a crucial part because the results of the data collected will be analyzed to provide answers or solutions to the problems being studied (City, 2023)

The respondents in this study are elderly patients with hypertension and domiciled in the working area of the Limboto Health Center Before distributing the questionnaire, the researcher will explain the purpose of the research and ask for the respondent's consent to participate, while still considering the abilities of each respondent. Furthermore, respondents will be given a questionnaire that has been prepared by the researcher to be answered according to the existing instructions.

Data Analysis

Univariate Analysis

Univariate analysis is a data analysis technique that is carried out on only one variable separately, without connecting it with other variables (Sukma, 2022) . In this study, what is included in the univariate analysis are the characteristics of the respondents including age, gender, education level, and length of suffering from hypertension. In addition, an analysis was carried out on the distribution of medication adherence levels and the distribution of blood pressure of respondents

Bivariate Analysis

Bivariate analysis is an analysis method used to see the difference or relationship between two variables (Sukma, 2022). Bivariate analysis was used to analyze whether or not there was a relationship between an independent variable (medication adherence) and a dependent variable (blood pressure status). The statistical tests used are Chi-square. When the value p-value < 0.05 then it is said that there is a relationship and if the value p-value ≥ 0.05, there was no relationship between medication adherence to blood pressure in hypertensive elderly at the Limboto Health Center.

Statistical Hypothesis

H0: There was no relationship between medication adherence to blood pressure in hypertensive elderly at Limboto Health Center

H1: There is a relationship between medication adherence to blood pressure in hypertensive elderly at Limboto Health Center.

RESULTS

Respondent Characteristics

Table 1 Distribution of respondents based on the age of hypertensive elderly patients at the Limboto Health Center

Age	Frequency (n)	Present (%)
60-69 years old (Early Elderly)	16	42.1
70-79 years old (Middle Elderly)	17	44.7
80 years old (Late Elderly)	5	13.2
Total	**38**	**100.0**

Source : Primary Data 2025

Based on table 1, it was found that of the 38 respondents, most of them were 70–79 years old with a total of 17 people (44.7%). Meanwhile, at least at the age of 80 with a total of 5 people (13.2%).

Characteristics of Respondents by Gender

Table 2 Distribution of Respondents by Gender of Elderly Hypertensive Patients at Limboto Health Center

Yes	Gender	Frequency (n)	Present (%)
1.	Male	10	26.3
2.	Women	28	73.7
	Total	38	100.0

Source : Primary Data 2025

Based on table 2, it was found that out of 38 respondents, the majority of respondents were female as many as 28 people (73.7%) followed by male gender as many as 10 people (26.3%).

Univariate Analysis

Univariate analysis is an analysis used to see the frequency distribution of each research variable. In this study, it was used to see the frequency distribution of both independent variables (Medication Adherence) and dependent variables (Blood Pressure).

Distribution of Respondents Based on Medication Compliance

Table 3 Distribution of respondents based on medication adherence to the elderly hypertensive patients at the Limboto Health Center

Yes	Medication Compliance	Frequency (n)	Present (%)
1.	Height	13	34.2
2.	Medium	9	23.7
3.	Low	16	42.1
	Total	38	100.0

Source : Primary Data 2025

Based on table 3, it was found that of the 38 respondents, most of them showed a low level of compliance as many as 16 people (42.1%). Meanwhile, the least 9 people (23.7%) are in moderate compliance.

Distribution of Respondents by Blood Pressure

Table 4. Distribution of respondents based on blood pressure of hypertensive elderly patients at the Limboto Health Center

Yes	Blood Pressure	Frequency (n)	Present (%)
1.	Controlled	18	47.4
2.	Uncontrolled	20	52.6
	Total	38	100.0

Source : Primary Data 2025

Based on table 4, it was found that of the 38 respondents, the majority of respondents had controlled blood pressure with a total of 18 people (47.4%) and respondents with uncontrolled blood pressure amounted to 20 people (52.6).

Bivariate Analysis

In this study, we can find out the relationship between the two variables, namely the independent variable (Medication Adherence) and the dependent variable (Blood Pressure).

Table 5 Analysis of the Relationship Between Medication Compliance and Blood Pressure in Hypertensive Elderly at Limboto Health Center

Medication Compliance	Blood Pressure				Total		*P* -Value (*chi-square*)
	Controlled		Uncontrolled				
	n	%	n	%	n	%	
Height	11	28.9	2	5.3	13	34.2	0,002
Medium	4	10.5	5	13.2	9	23.7	
Low	3	7.9	13	34.2	16	42.1	
Total	**18**	**47.4**	**20**	**52.6**	**38**	**100.0**	

Source : Primary Data 2025

Based on the results of the statistical test using chi-square, a p-value of 0.002 was obtained, meaning that the p-value was less than 0.05 (0.002 < 0.05). This shows that H1 is accepted, which means that there is a relationship between medication adherence to blood pressure in hypertensive elderly people at the Limboto Health Center. These results show that the level of patient compliance in taking antihypertensive drugs has an effect on the blood pressure condition achieved. Respondents with high medication adherence levels in this study mostly had controlled blood pressure.

Based on table 4.9, it shows that respondents with high compliance mostly have controlled blood pressure, namely 11 people (28.9%), while only 2 people (5.3%) have uncontrolled blood pressure. Meanwhile, as many as 4 people (10.5%) had controlled blood pressure, while 5 people (13.2%) had uncontrolled blood pressure. Meanwhile, in the low compliance group, most of the respondents actually experienced uncontrolled blood pressure, namely 13 people (34.2%). Only 3 people (7.9%) had controlled blood pressure. This condition shows that non-compliance in taking antihypertensive drugs is closely related to the inability to achieve stable blood pressure.

DISCUSSION

Medication Compliance in Elderly Hypertensive Patients at Limboto Health Center

Based on the results of the research obtained through the MMAS-8 questionnaire in table 4.5, it was found that out of 38 respondents, 13 people (34.2%) were in the category of high compliance. This can be seen from the results of the medication compliance questionnaire, where respondents said that they never forgot to take medication both in daily activities and when traveling. In the past two weeks, the majority of respondents have also never gone a day without taking medication, which indicates consistency in undergoing treatment. In addition, respondents generally did not reduce or stop medication without the knowledge of the doctor even though they had experienced discomfort after taking the medication. Most of the respondents continued treatment even though they felt that their health condition was under control and did not feel burdened or troubled in following the treatment plan. Respondents also never had difficulty remembering to take all the medications.

In addition to the daily behavioral factors that support high adherence, individual characteristics such as age can also play a role in determining consistency in taking medications. Based on age characteristics, high adherence tends to be more common in the early elderly, because early elderly people generally still have relatively good physical and cognitive conditions, so they are able to understand treatment instructions, remember medication schedules, and integrate medication consumption into their daily routine consistently. In the middle elderly, adherence to taking medication in the high adherence category is still found even though the number is less than in the early elderly, and the least in the elderly. This suggests that medication adherence tends to decline with age.

These findings are in line with research (Scott, 2022) which states that the early elderly generally still have good cognitive abilities and memory, sufficient energy, and high motivation to maintain health, so that they are more consistent in undergoing treatment. Middle-aged people begin to face mild challenges, such as decreased memory that can affect compliance. Meanwhile, in the elderly, memory loss or comorbidities can affect consistency in taking medication.

Furthermore, in the results of the research obtained through the MMAS-8 questionnaire, it was found that of the 38 respondents, there were 9 people (23.7%) belonging to the moderate compliance category. This can be seen from the results of the drinking compliance questionnaire, where the respondents said that sometimes they forgot to take their medication, even though it did not happen continuously. In addition, in the last two weeks, it was still found that there were respondents who had not taken medication on a certain day, not solely because they had forgotten, but were influenced by certain conditions or situations. Reducing or stopping medication without informing the doctor, some respondents stated that they had done it because they felt that their body condition became uncomfortable or worsened after taking the drug. This shows that respondents' understanding of drug side effects and the importance of consultation with health workers is still not optimal. When traveling or outside the home, some respondents also admitted that they sometimes forgot to bring their medication, which could potentially lead to missed time to take medication. Nonetheless, most respondents stated that they were still taking medication the previous day, indicating an effort to remain compliant with the medication. However, when they felt that their health condition was under control, some respondents admitted that they had stopped taking medication, reflecting the perception that treatment did not need to be continued when symptoms improved. In addition, taking medication every day is still felt as a burden or hassle by some respondents, thus affecting the consistency of compliance. Some respondents also had difficulty remembering to take all medications, namely antihypertensive drugs.

In addition to being based on questionnaire answers, education level is also a determining factor for moderate adherence in elderly patients. Based on educational characteristics, the elderly with lower education tend to have a limited understanding of the importance of taking medication regularly, side effects of medication, and the importance of consultation with health professionals. Compared to the elderly with higher education who have extensive knowledge about the importance of taking medicine.

This is in line with research (Augustine, 2022) which shows that the level of education has an effect on medication adherence, where respondents with lower education tend to have less than optimal health understanding and knowledge so that they have the potential to experience moderate adherence. The study found that education level is one of the significant factors related to the ability of the elderly to understand medication instructions and manage medication regimens consistently, which ultimately influences medication adherence behavior. Older people with higher levels of education tend to have a better understanding of the importance of taking medication regularly, including treatment goals, long-term benefits, and risks that can occur if they do not adhere to the therapy. This understanding helps the elderly to be more consistent in following the treatment recommendations given by health workers.

Meanwhile, the results of the research obtained through the MMAS-8 questionnaire found that out of 38 respondents, 16 people (42.1%) were in the low compliance category. This can be seen from the results of the drinking compliance questionnaire, where the respondents said that they often forgot to take medicine, even in the last two weeks there were those who did not take medicine on a certain day due to various conditions or situations, such as traveling or not carrying medicine. In addition, some respondents have reduced or stopped medication without consulting a doctor, because they felt that the effects of drugs made the body uncomfortable or worsened. The perception that treatment does not need to be continued when symptoms improve is also found, plus the feeling that taking medication every day is a burden as well as difficulty remembering medication schedules.

In addition to behavioral factors, gender also contributes to low compliance. In men, low adherence tends to be caused by the perception that treatment is not very important or that the body's condition is already improving. Meanwhile, in women, the main factor is the feeling of being burdened or troubled in managing a schedule to take medication. This suggests that gender can influence behavior patterns that lead to low compliance.

This is in line with research (Mahmoodi, 2022) which found that there were variations in the pattern of obedience between men and women in the elderly. The study shows that differences in gender roles and cognitive behavior patterns in the elderly population can influence decisions and consistency in undergoing prescribed medication regimens. This variation has to do not only with medical facts but also with the individual's perception of the disease and the treatment undertaken, in which the different cognitive processes between men and women contribute to a higher level of non-compliance in some of the elderly. In the study, the tendency for nonadherence or low adherence was not uniform across groups, but it showed that there were gender differences in motivation, belief in medication, and how they responded to chronic treatment regimens, which was relevant to the findings of low adherence.

With this in mind, these findings confirm that medication adherence in the elderly is strongly influenced by age, education, and gender, which affects cognitive ability, understanding, perception of medication, and routine management of medication. Therefore, intervention strategies to improve compliance need to be tailored to the characteristics of each individual, with an approach that takes into account age, education level, and gender differences.

Blood Pressure In Hypertensive Elderly At Limboto Health Center

Based on the results of the research obtained through the blood pressure observation sheet, it was found that out of 38 respondents, there were 18 people (47.4%) belonging to the controlled blood pressure category. This can be seen from the results of blood pressure measurement during the study, the average blood pressure of patients was at the normal limit, which was <140/90 mmHg. This shows that some elderly people manage to keep blood pressure within normal limits. This condition can be interpreted as having the ability to maintain blood pressure stability.

Blood pressure control in the elderly is not only influenced by the health condition of the individual, but also by the characteristics of the job. Based on the job characteristics of the respondents, there are elderly people who are still actively working. Elderly people who are still working tend to have more regular daily activities, thus helping to maintain the stability of body functions, including blood pressure control. This structured activity plays a role in reducing the sedentary lifestyle that is often found in the elderly who do not work. In addition, work provides a sense of responsibility and social role, which can increase the motivation of the elderly to maintain their health conditions so that they are able to carry out their activities properly. In contrast, the elderly who do not work tend to have less regular daily activities, with lower levels of physical activity, thus potentially affecting blood pressure stability. This condition can cause blood pressure to be more difficult to control than the elderly who still have a job role.

These findings are in line with research (Padhilatus, 2025) which shows a positive relationship between physical activity and blood pressure in the elderly. Some studies show that seniors with higher levels of physical activity have more stable blood pressure compared to those who are less active. For example, a study in RW 003 in the working area of the Pataruman Health Center, West Bandung Regency found a significant relationship between physical activity levels and blood pressure in hypertensive elderly people, where the elderly with moderate physical activity were more in the controlled blood pressure category than those who were less active ($p < 0.001$). In addition, regular physical activity by the elderly contributes to a decrease in blood pressure through increased blood circulation and a decrease in vascular resistance, which is an important physiological mechanism in the control of hypertension in the elderly age group.

Meanwhile, in the results of the study obtained through the blood pressure observation sheet, it was found that of the 38 respondents, there were 20 people (52.6%) belonging to the uncontrolled blood pressure category. This can be seen from the results of blood pressure measurement during the study, the average blood pressure of patients was at the normal limit, which was >140/90 mmHg. This shows that some elderly people are not able to maintain blood pressure within normal limits even though they are undergoing treatment.

Furthermore, if viewed from the characteristics of age, it was found that there was a difference in blood pressure conditions in the elderly group. Based on age characteristics, the number of respondents with uncontrolled blood pressure in this study was 20 people, although the proportion of elderly people was relatively less than other age groups. This condition shows that uncontrolled blood pressure not only occurs in the elderly, but is also found in the elderly in early age and the middle elderly.

These findings are in line with research (Riyadina, 2025) which suggests that uncontrolled blood pressure can be found in a wide range of elderly age groups, not limited to one specific age range. In this study, uncontrolled blood pressure was found in a number of respondents even though the distribution of the number of elderly people was relatively smaller. This shows that blood pressure instability can occur evenly in the elderly, in the early age, intermediate, and advanced age, depending on the individual condition. The study stated that uncontrolled blood pressure in the elderly is influenced by a combination of physiological changes due to the aging process, different body adaptability, and variations in individual activities and health conditions in each age group.

The Relationship Between Medication Compliance and Blood Pressure in Hypertensive Elderly at Limboto Health Center

The results of the chi-square test statistick test showed a p-value of 0.002 (< 0.05), which means that H_1 is accepted. Thus, there is a significant relationship between medication adherence to medication and blood pressure in hypertensive elderly.

Based on the results of the study of 13 people with high adherence, 11 people had controlled blood pressure, while 2 people were uncontrolled. These findings suggest that the elderly with high medication adherence tend to be more in the controlled blood pressure category.

The results of this study are in line with the research (Johan, 2023) which states that the elderly who obedient to taking medication tend to have controlled blood pressure. The study confirms that medication adherence is the main factor in controlling hypertension in the elderly. However, the study also acknowledged that the body's physiological response to drugs can vary, so some individuals may take longer to reach normal blood pressure. The study confirms that even if patients have taken the medication as recommended, the effectiveness of the medication in lowering blood pressure may vary depending on the individual.

Thus, this study confirms that medication adherence plays an important role in blood pressure control in hypertensive elderly, but high adherence is not always followed by controlled blood pressure in all respondents. These findings indicate that there is a difference in individual responses to antihypertensive therapy, so that even though the elderly have complied with taking the medication, their blood pressure may still not reach the control target.

Furthermore, in the results of the study of 9 people with moderate adherence, 4 people had controlled blood pressure, while 5 people were uncontrolled. These findings show that at moderate levels of adherence, blood pressure control is not optimal, because the number of respondents with uncontrolled blood pressure is still more than those who are controlled.

The results of this study are in line with the research (Pangesti, 2025) which states that adherence to taking medication at moderate levels can result in varying blood pressure control, depending on the consistency of medication consumption. The study explained that the elderly who still skip medication consumption in certain days tend to have less stable blood pressure control, because drug levels in the body are not optimally maintained. In contrast, the elderly with moderate adherence but less frequent medication forgetfulness may still show controlled blood pressure at the time of the examination. This suggests that the consistency level of medication is important in determining whether blood pressure can be controlled or not, even though they are both in the category of moderate adherence.

Meanwhile, in the results of the study of 16 people with low adherence, 3 people had controlled blood pressure and 13 people were uncontrolled. This suggests that low medication adherence tends to be related to the lack of blood pressure control in most elderly people. However, each person also has controlled blood pressure even though they have low compliance. This suggests that some elderly people may still be in the early stages of hypertension or have relatively stable blood pressure, so that blood pressure remains controlled even though medication adherence is not optimal.

The results of this study are in line with the research (Nufus, 2024) which suggests that although there is a significant relationship between medication adherence and blood pressure control, not all patients with low adherence always experience uncontrolled blood pressure. The study explains that some patients with low adherence may still show blood pressure within normal limits, especially in individuals with mild degrees of hypertension or not very high initial blood pressure. This condition indicates that blood pressure control in this group is temporary and does not reflect stable blood pressure control, so adherence to medication is still necessary to maintain blood pressure within normal limits on a sustainable basis.

Thus, this study shows that medication adherence remains an important role in blood pressure control in the hypertensive elderly. Although some elderly people with low adherence can still show controlled blood pressure, the condition is temporary and does not reflect stable blood pressure control. Therefore, increased adherence to medication is necessary to keep blood pressure under control on an ongoing basis.

CONCLUSION

Medication adherence to hypertension elderly patients at the Limboto Health Center was obtained from 38 respondents, most of whom showed a low level of medication adherence, which was 16 respondents (42.1%). Meanwhile, respondents with the least level of compliance were 9 respondents (23.7%)

Blood pressure in hypertensive elderly patients at the Limboto Health Center was obtained from 38 respondents, the majority of respondents with controlled blood pressure with a total of 18 (47.4%) and respondents with uncontrolled blood pressure amounted to 20 people (52.6).

There was a significant relationship between medication adherence to medication and blood pressure in hypertensive elderly at Limboto Health Center. With a p-value = 0.002, it means that the p-value is less than 0.05 (0.002 < 0.05).

SUGGESTIONS

For the Limboto Health Center, it can be used as a reference to expand the knowledge of health workers, especially about the importance of medication compliance in controlling blood pressure in the elderly with hypertension.

For the community and families, it can provide information and increase knowledge from the community and families about the importance of the role of the family in supporting the elderly with hypertension to be obedient to taking medication, thereby helping to control blood pressure.

For educational institutions, it can be a reference in the preparation of teaching materials in health education institutions, especially related to hypertension management and patient adherence to drug therapy.

For the next researcher, it can be a reference for future researchers who want to conduct research related to medication adherence, blood pressure control, or hypertension management in the elderly.

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