

Family Support Increases the Hypertension Medication Adherence in the elderly at Public Health Center of Simpang Tiga Pekanbaru

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ABSTRACT

The prevalence of hypertension globally affects 22% of the world's population, and 36% of the incidence rate in Southeast Asia as well as in Indonesia continues to increase. Elderly with hypertension require special care and attention, family support is needed to remind them of medication adherence. The purpose of the study was to determine the correlation of family support and hypertension medication adherence in the elderly at Public Health Center of Simpang Tiga Pekanbaru. Desain of this study is descriptive correlation using *cross sectional* approach. Sample of this study consists of 112 elderly people with hypertension taken by *purposive sampling* technique. The instruments in his study used a *Morisky Medication Adherence Scale* (MMAS) questionnaire and a family support questionnaire. The data analysis used is chi-square. The results of the study from good family support were 59 (52.7%) respondents, family support was sufficient as many as 26 (23.2%) respondents, and families were less as many as 27 (24.1%) respondents. Meanwhile, the results of compliance with hypertension drug consumption were 63 (56.3%) respondents and non-compliance with drug consumption as many as 49 (43.8%) respondents. The results of the Chi-Square statistical test obtained a *p-value* of 0.002 ($p < 0.05$) meaning that there was a significant relationship between the relationship of family support to adherence to hypertension drug consumption in the elderly at the Public Health Center of Simpang Tiga Pekanbaru. The recommendations of this study are expected by families to always provide motivation and accompany the elderly in their control and activities.

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INTRODUCTION

WHO (*World Health Organization*) states that the prevalence of hypertension globally affects 22% of the world's population and reaches 36% of the incidence rate in Southeast Asia. Hypertension is also the cause of death with a figure of 23.7% of the total 1.7 million deaths in Indonesia in 2016. In

2017 hypertension also increased until in 2018 the figure increased by 63.5%. Meanwhile, there are 1.5 million people who die from hypertension every year in the Southeast Asian region (Hariawan & Tatisina, 2020).

Hypertension can occur due to a thickening of the arterial wall which results in the accumulation of collagen in the muscle layer, so that the blood vessels gradually narrow and become stiff. Narrowing of the circulatory system results in an increase in blood pressure above the optimal value, resulting in the emergence of hypertension in the elderly (Widyaningrum, Retnaningsih, & Tamrin, 2019). The elderly are the final process of human development. The final process of development is characterized by a decrease in the cardiovascular system. One of the problems faced by the elderly in the decline of cardiovascular function is hypertension (Nuraini, 2015). Hypertension is widely considered a common thing by society, especially by elderly sufferers. The perception of the elderly regarding the effect of taking medicine is that if you continue to take the medicine, then your high blood pressure can decrease and there are also those who feel that they are not taking the medicine, there will be no problems, which important not many thoughts. Many very different perceptions about the adherence of taking medications to hypertension (Molintao, Ariska, & Ambitan, 2019).

Adherence to treatment is defined as the behavior of a patient in obeying the rules, advice recommended by health workers during the course of treatment. The recommendation to follow the rules in consuming hypertension drugs regularly is useful for controlling blood pressure, so it requires compliance in consuming hypertension drugs (Massa & Manafe, 2022).

Non-compliance with taking medications due to a lot of activity, laziness to take medicines and also forgetting. Adherence to the treatment of hypertension is indispensable. Hypertensive patients should control blood pressure regularly and take medications to maintain optimal blood pressure targets to be achieved. Lack of compliance of hypertensive patients in undergoing treatment can cause blood pressure to become uncontrolled or increase and can be a major risk factor for the occurrence of other diseases (Esprensa, Ekacahyaningtyas, Kusuma, & Saelan, 2022).

One strategy to overcome non-compliance is to take advantage of the family. Family support has an effect on adherence to taking medications for people with hypertension. Incomplete treatment of patients is caused by the role of family members who do not fully accompany the sufferer, as a result of which the hypertension suffered recurs. Adherence to treatment will increase when the sufferer gets help from the family. In addition, patients who have no family or no family support will affect early termination of treatment and unsatisfactory results (Widyaningrum et al., 2019).

Ideally, family support itself is created from an action through communication, social interaction, efforts to provide transportation, efforts to maintain physical activity that the elderly are still capable of, and family support in preparing food (Susanti, Manurung, & Pranata, 2018). Family support obtained by the elderly will increase self-confidence and increase motivation to face problems and increase life satisfaction, this support is in the form of providing motivation, economic support and willingness to remind or prepare medicines that will be taken by elderly people with hypertension. Incomplete treatment of patients is caused by the role of family members who do not fully accompany the sufferer, as a result of which the hypertension suffered recurs. Adherence to treatment will increase when the sufferer gets help from the family (Widyaningrum et al., 2019).

Based on data obtained from the Pekanbaru City Health Office, it is known that of the 19 puskesmas located in Pekanbaru city, the working area of the at the Public Health Centre of Simpang Tiga Pekanbaru is the highest incidence of hypertension. Based on the results of interviews with 8 elderly people who were at the Public Health Center Simpang Tiga Pekanbaru on March 21, 2022 who visited to check their health, 5 elderly people who were undergoing hypertension treatment and checked their blood pressure said that they sometimes forgot to take medicine, 3 elderly people said sometimes forgot come to the health center to check their blood

pressure and take medicine, so the elderly sometimes experience very high blood pressure because their families sometimes remind to take medicine and sometimes also do not remind, lack of family support to remind the elderly to obediently take medicine and check their blood pressure so that the elderly sometimes experience a high increase in blood pressure.

This study aims to determine the relationship between family support and adherence to taking medications in the elderly with Hypertension at the Public Health Centre of Simpang Tiga Pekanbaru.

RESEARCH METHOD

The design of this study is descriptive correlative with cross sectional. The sample in this study was 112 hypertensive patients who were treated at the Public Health Centre of Simpang Tiga Pekanbaru with inclusion criteria a. aged more than 55 years; b. living with family; c. able to read and write; d. in the treatment of hypertension. The instruments used were a family support questionnaire consisting of 16 questions and a medication adherence questionnaire using the *Morisky Medication Adherence Scale* (MMAS) which consisted of 8 questions. The data were analyzed using the chi-square test.

RESULTS AND DISCUSSIONS

The results of this research can be described in the table below.

Table 1. Frequency distribution of respondents' characteristics by age

Variable	Mean	Min-Max
Age	61.83	55-83

Based on the results obtained from data processing, the average respondent is a group of 55-65 years old (elderly). Based on the results of research from 112 respondents, the most age was 55-65 years as many as 82 (73.2%). Age is one of the factors that can affect independence in carrying out daily activities. The physical condition will decrease which can cause disorders and abnormalities in physical, psychological and social functioning, which can further cause a state of dependence on others (Mayasari et al., 2022).

Elderly who live longer can be suspected to have coping mechanisms and the ability to adapt to physical and psychic stressors is more adaptive (Espremsa et al., 2022). Humans can be categorized as elderly if they are 60 years old to 70 years old and above according to Law Number 13 of 1998 concerning Elderly Welfare (Jumaiyah, Rachmawati, & Choiruna, 2020). The elderly are an age group in humans who have entered the final stages of the life phase, characterized by the increasing susceptibility of the body to various disease attacks that can cause death, for example in the cardiovascular system and blood vessels, respiratory, digestive, endocrine and so on. This is due to the increase in age so that there are changes in the structure and function of cells, tissues, and organ systems (Yani et al., 2022).

Hypertension in the elderly can occur due to the presence of remodeling and hardening of the large blood vessels, aorta loses its elasticity. The compensation mechanism that occurs is in the form of an increase in peripheral resistance so as to increase blood pressure. The function of the baroreceptor also decreases with age and the presence of atherosclerosis is also the cause of hypertension in the elderly (Yulianti & Aminah, 2022).

Based on researchers' assumptions, the age of the elderly is an age that really needs attention. As we get older, the physiological functions of the body decrease due to the aging process, resulting in various health problems such as hypertension.

Table 2. Distribution of characteristics of respondents

Variable	Frequency	%
Gender		
Male	52	46.4
Female	60	53.6
Time of Consumption of Hypertension Medications		
Morning	12	10.7
Evening	100	89.3
Medication		
Amlodipine	87	77.7
Captopril	7	6.3
Nifedipine	5	4.5
Dopamet	8	7.1
Bisoprolol	5	4.5
History of Hypertension		
1-5 Years	57	50.9
6-10Years	45	40.2
>11 Years	10	8.9

The results of this study showed the most sex, namely women, as many as 60 respondents (53.6%). Prevalence of hypertension sufferers in women is more than in men. Women who have not experienced menopause are protected by the hormone estrogen which plays a role in increasing *High Density Lipoprotein* (HDL) levels (Jumaiyah et al., 2020).

Based on researchers' assumptions, elderly women are already more at risk of hypertension, because the woman's body will experience a decrease in estrogen. A decrease in the hormone estrogen has an impact on increasing the activation of the angiotensin renin system and the sympathetic nervous system. The activation of these two hormones will cause changes in regulating vasoconstriction and dilatation of blood vessels so that blood pressure increases.

The results of this study showed that the drug consumed the most was amlodipine as many as 84 respondents (83.2%). Consumption of hypertension drugs is commonly found in the treatment of chronic diseases that require long-term treatment such as hypertension, so that current antihypertensive drugs have been proven to control blood pressure in hypertensive patients, and also play a very important role in reducing the risk of developing cardiovascular complications (Farajzadegan, Koosha, Sufi, & Keshvari, 2013).

First-line drugs commonly used for the initial treatment of hypertension include: diuretic groups, (β -blockers), angiotensin-converting enzyme inhibitors (ACE-inhibitors), angiotensin receptor *blockers* (ARBs) and calcium antagonists (*Channel Blocker*). The use of CCB and ARB group antihypertensive drugs used for outpatient elderly patients by 21.9% and the use of single-therapeutic antihypertensive drugs that are most widely used is amlodipine(34%) (Gultom, 2022).

The use of these drugs can certainly cause side effects, side effects that can arise are feeling tired or dizzy, heart beating fast, feeling nauseous and uncomfortable in the abdomen, and swollen ankles (Pangestu, Kurniasari, & Wibowo, 2017). Based on researchers' assumptions, the use of antihypertensive drugs alone has been shown to be insufficient to produce long-term blood pressure control effects if it is not supported by adherence to using these antihypertensive drugs. The description of respondents' characteristics based on the time of consumption of the most of respondents was obtained, namely nights as many as 100 (89.3%) and 12 respondents (10.7%) in the morning. It is very important for people with hypertension to take medication according to the instructions because taking the medicine alone will not be enough to control blood pressure in the long term (Padaunan, Frendy F. Pitoy, & Gloria H. Wongkar, 2022).

An insignificant difference between systolic and diastolic blood pressure to decrease blood pressure in the use of a single 5 mg amlodipine, which means that the use of amlodipine 5 mg drugs if taken in the morning or at night has the same blood pressure reduction effect. This is related to pharmacology where the circadian rhythm of blood pressure reaches a peak at 6 to 10 am, amlodipine levels in the blood are close to the maximum level (i.e. 5-5.8 mg / ml, after taking it

6-12 hours) when taken at evening (at 18.00) amlodipine can lower blood pressure right at the time. The blood pressure reached its peak. So that the administration of amlodipine at evening (after 18.00) significantly lowers the blood pressure of systolic and diastolic than amlodipine given in the morning (before 12.00) (Nopitasari, Adikusuma, Qiyaam, & Fatmala, 2019).

Based on researchers' assumptions, night is the optimal time for consumption of antihypertensive drugs and consuming antihypertensive drugs at night is more beneficial than drinking in the morning or afternoon. In addition, to achieve successful treatment, it is necessary to have communication between patients and doctors and families regarding the treatment of hypertension so that blood pressure can be controlled in the long term by obediently taking drugs.

The results of this study showed that the highest hypertension rate was 1-5 years as many as 72 (64.3%) and there were 10 respondents (8.9%) with a duration of hypertension of >11 years. Family hypertension is one of the genetic risks that can reduce hypertension from parent to child. A person's blood pressure can follow the blood pressure of their parents, this shows a very important genetic role in determining blood pressure. The cause of the appearance of this hypertensive disease is due to many risk factors. One of the risk factors for hypertension is based on the host. Risk factors based on hosts/humans can be divided into two, namely factors. Immutable risk factors include race, age, sex, and heredity (family history of hypertension) (Afifah, Pakki, & Asrianti, 2022).

A person who has long suffered from hypertension may become anxious due to hypertension which tends to require relatively long treatment, there is a risk of complications and can shorten the age (Suciana, Agustina, & Zakiatul, 2020). Researchers assume that as they get older, the chances of someone suffering from hypertension also get bigger. The loss of tissue elasticity and atherosclerosis as well as the dilation of blood vessels are the causative factors of hypertension in elderly.

Table 3. Family Support Distribution

Family Support	Frequency	Percentage
High	59	52.7
Middle	26	23.2
Low	27	24.1
Total	112	100

The description of respondents' characteristics based on family support was found to be less than 59 (52.7%) respondents and 27 respondents (24.1%) had less support. In line with the research of (Primasari, Devianto, & Intan Sari, 2022) the fulfillment of hypertension drug consumption for the elderly needs full support from the family. In old age, there will be various setbacks in body organs, so that the elderly are easily exposed to diseases such as hypertension, age is one of the factors that affect adherence to taking hypertension drugs in the elderly, because with age it experiences a decrease in all physiological functions, so that in meeting the needs in fulfilling the consumption of hypertension drugs the elderly need full support from the family. The hope is that it needs the full support of the family. The support includes emotional support, awards, information and instrumental shows that most seniors get family support. The support of family rewards needed by the elderly is a form of family affective function that can improve the psychosocial status of the elderly.

Every family has different perceptions and responses to a stimulus or stressor because stress without positive coping treatment results in distress that can risk health problems and affect its support, including in the prevention of hypertension. Family social support is essential in improving and encouraging patients if hypertension becomes severe.

Social support from the family in the form of emotional support is expected to help reduce anxiety caused by complications of hypertension. Families need to work to increase positive family social support again whether it is emotional, instrumental, informational or rewarding support.

Family support plays a role in providing good and strong motivation that can encourage a person to be more obedient in treatment (Padaunan et al., 2022).

The researchers' assumption is that support from the family makes the sufferer not feel burdened by the disease he suffers from and family support as a coping in dealing with problems that exist in one of his family members, so that the family can increase enthusiasm and motivation in adherence to drug consumption in handling hypertension.

Table 4. Medication Adherence Distribution

Medication Adherence	Frequency	Percentage
Adherence	63	56.3
Non-adherence	49	43.8
Total	112	100

The description of respondents' characteristics based on drug consumption compliance was obtained by 63 respondents (56.3%), and non-compliance with 49 respondents (43.8%). A person's adherence in taking medications is influenced by several factors such as the duration of suffering from hypertension, the amount of medication consumed and the use of time for control to health services, in addition to fear of side effects from treatment and taking medications too often also contributes to the level of adherence to taking one's medications. One of the factors that influence the adherence to taking medications in people with hypertension is the level of knowledge of sufferers about hypertension (Padaunan et al., 2022; Rasyida et al., 2022).

Non-compliance with therapy is a major contributor to the failure of blood pressure control in hypertensive patients. The higher the patient's non-compliance rate will be in line with the higher the risk of complications (Nopitasari et al., 2019). The adherence of the elderly in taking antihypertensive drugs is one of the determining factors in controlling blood pressure. Adherence to treatment is defined as the behavior of a patient in obeying the rules, advice recommended by health workers during the course of treatment. The recommendation to follow the rules in consuming hypertension drugs regularly is useful for controlling blood pressure, so it requires compliance in consuming these hypertension drugs. The duration of treatment gives rise to boredom, saturation of the treatment undergone, so that the longer the treatment of hypertension becomes the cause of non-compliance in undergoing treatment (Susanti et al., 2018).

The causes of non-compliance of the elderly in taking hypertension medications due to busyness at work, decreased memory during the time of drug administration and the correct dosage of drugs, side effects of treatment such as drowsiness, dizziness, nausea during taking hypertension drugs, stopping treatment when the situation improves are the causes of non-compliance with hypertension treatment (Wawomeo, Kurnia, Sekunda, & Fredimento, 2022).

Based on the researchers' assumptions, to keep blood pressure under control and prevent complications from occurring, accuracy and a long time are needed in undergoing treatment. This, of course, requires compliance from the sufferer in carrying it out.

Table 5. The Correlation of family support and medication adherence

Family Support	Medication adherence		Total	p Value
	Adherence	Non adherence		
High	41	18	59	0.002
Middle	14	12	26	
Low	8	19	27	
Total	49	63	112	

Based on the analysis, it can be seen that the relationship of family support for adherence to taking hypertension drugs in the elderly at the Public Health Center of Simpang Tiga Pekanbaru obtained the results of the Chi-Square statistical test, it was found that the *p-value* was 0.002 (*p-value* < 0.05), meaning that the results of this study show that there is a correlation of family

support for adherence to taking hypertension medications in the elderly at Public Health Center of Simpang Tiga Pekanbaru.

Furthermore, there will be various setbacks in the organs, so that the elderly are easily exposed to diseases such as hypertension. Age is one of the factors that affect the adherence to taking hypertension drugs in the elderly, because with age it experiences a decrease in all physiological functions, so that in meeting the needs in fulfilling the consumption of hypertension drugs the elderly need full support from the family. The hope is that it needs the full support of the family. The support includes emotional support, awards, information and instrumental shows that most elderly get family support. The family appreciation required by the elderly is a form of family affective function that can improve the psychosocial status of the elderly (Primasari et al., 2022).

Common non-compliance problems in management are encountered in the treatment of chronic diseases that require long-term treatment such as hypertension. The family is a *support system* in the life of hypertensive patients, so that the situation experienced does not get worse and avoids complications due to hypertension. So that the family is the closest unit in providing support in the treatment and management in the treatment of hypertension. From several factors that affect the quality of family support provided to elderly patients, it is known that family social support is very important in improving and encouraging patients if hypertension becomes severe (Farajzadegan et al., 2013).

The family has a role in carrying out health care and maintenance for family members. Family members are able to recognize if there is a disorder in the development of health of other family members, one of which is the symptoms of hypertension. The family is able to make the right decisions for the actions of health services, deliver to health services, help with medical expenses, remind to take medicines, and provide and maintain a home atmosphere always conducive to health and emotional development. Family members are able to provide support and caring attitudes to other members who suffer from hypertension (Lali, Lestari, & Heni, 2022).

Based on the researchers' assumptions, families need to make efforts to increase positive family social support again, be it emotional, instrumental, informational or rewarding support in order to achieve good adherence to drug consumption in the elderly.

CONCLUSION

Family support is one of the important indicators in adherence to taking medications in hypertensive patients. High family support will be followed by adherence in taking medications, otherwise the lack of family support leads to non-compliance with taking medications. The results of this study can be used as a source of knowledge and information about how important family support is given to the elderly in achieving drug consumption compliance for people with hypertension. And it is hoped that subsequent researchers can provide health education to improve drug consumption compliance in the elderly.

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