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Original Research

The Relationship Between Self-Management and Blood Pressure of Hypertension Sufferers in the Kediri I Health Center Region, Tabanan District

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ABSTRACT

Background: Cases of hypertension in Indonesia show a significant increase. Hypertension continues to lead to complications when people with hypertension have not implemented self-management regularly. Management of hypertension which includes routine medication and healthy lifestyle changes requires good self-management. The purpose of this study was to determine the relationship between self-management and blood pressure of hypertensive patients in the Kediri I Health Center Working Area. **Methods:** This study uses a quantitative research design (non-experimental) using a cross-sectional approach. The sample amounted to 82 respondents obtained by purposive sampling technique, who met the inclusion criteria, namely hypertensive patients aged 15-59 years. Data collection instruments used the Hypertension Self-Management Behavior Questionnaire (HSMBQ) and blood pressure measurements using a sphygmomanometer. **Results:** Data analysis using the Spearman rank test showed the results of $\varrho = 0.000$ and the correlation coefficient r = -0.732 which means that there is a significant and strong relationship (0.60 - 0.79) between the two variables. The majority of respondents showed poor self-management behavior 56.1%. **Conclusion:** It is hoped that it can be used as information for the relevant health centers, that the importance of implementing self-management to prevent an increase in blood pressure in hypertensive patients.

Keywords: Hypertension; self-management; blood pressure

1. INTRODUCTION

Current modernization has resulted in changes in people's lifestyles, such as unhealthy diets, lack of physical activity, and cigarette consumption. These unhealthy lifestyles can lead to heart disease and increased blood pressure, especially at the age of over 40 years.(1) Hypertension is a disease that knows no time and is a priority in today's health world. High blood pressure disease or also known as hypertension is a condition where blood pressure exceeds the normal limit of 120/80 mmHg. According to the World Health Organization (WHO), the normal blood pressure limit is 130/85 mmHg, and hypertension is defined as blood pressure over 140/90 mmHg, which is the upper limit for people

over 18 years old.[2] Hypertension causes a decrease in blood flow and increases the workload of the heart. Therefore, it can lead to various health conditions including heart failure, kidney failure, stroke, and coronary artery disease.[3]

Current modernization has resulted in changes in people's lifestyles, such as unhealthy diets, lack of physical activity, and cigarette consumption. These unhealthy lifestyles can lead to heart disease and increased blood pressure, especially at the age of over 40 years.[1] Hypertension is a disease that knows no time and is a priority in today's health world. High blood pressure disease or also known as hypertension is a condition where blood pressure exceeds the normal limit of 120/80 mmHg. According to the World Health Organization (WHO), the normal blood pressure limit is 130/85 mmHg, and hypertension is defined as blood pressure over 140/90 mmHg, which is the upper limit for people over 18 years old.[2] Hypertension causes a decrease in blood flow and increases the workload of the heart. Therefore, it can lead to various health conditions including heart failure, kidney failure, stroke, and coronary artery disease.[3]

According to the World Health Organization (WHO) in 2019, there were 1.13 billion people with hypertension in the world, with the first one-third of cases occurring in low-income countries. This number will increase annually and is expected to reach 1.5 billion by 2025. In addition, the death rate due to complications of hypertension is estimated to reach 9.4 million people each year. Hypertension is rapidly increasing and becoming a global health challenge with high prevalence, especially in developing countries, including Indonesia.[4]

The Basic Health Research (2018) reported hypertension rates of 34.1% in the population aged ≥ 18 years, 31.6% in the population aged 31-44 years, 45.3% in the population aged 45-54 years, 55.2% in the population aged 55-64 years, and 63.2% in the population aged 65-74 years.[5] Of the 34.1% of patients with hypertension, only 46.05% of patients took medication regularly, 11.25% of patients did not take medication, and 42.7% did not take medication regularly. Of the 34.1% of patients, only 13.46% regularly checked their blood pressure, 59.4% sometimes, and 27.14% never checked their blood pressure. This shows that the management of hypertension patients is still poor, resulting in a high risk of complications. The provinces with the highest prevalence are North Sulawesi (13.53%), Bali (9.91%), while the provinces with the lowest prevalence are NTT (5.99%) and Papua (4.75%).

Based on data from the Bali Health Office,[6] there are 562,519 people with hypertension who have been diagnosed with hypertension aged ≥ 15 years. Regencies or cities with the highest number of people with hypertension are Tabanan with 131,099 people, Gianyar with 103,337 people, and Denpasar City with 100,569 people. Hypertension is not only suffered by the elderly, but can also occur in adolescents.

The number of people with hypertension in Tabanan Regency in 2022 with age ≥ 15 years reached 131,099 cases from 20 existing health centers. Of these 131,099 hypertensive patients, it is estimated that only 24,863 have received services according to standards.[6] According to data from the Tabanan Health Office (2022), the highest number of hypertension cases was found in Kediri I Health Center with 15,488 cases and the lowest in East Selemadeg II Health Center with 2,454 cases.[6] In 2023 months (April - September) there were 1,433 hypertension patients. After elderly patients, productive age (15-59 years) had the second highest number of hypertensive patients with 438 patients. This shows that hypertension is still a health problem in Tabanan Regency, so various efforts are needed to prevent an increase in hypertension cases.

Management of hypertension is carried out as an effort to prevent the risk of increased blood pressure and the occurrence of complications. Pharmacological (medication) and non-pharmacological (lifestyle modification) treatments are applied to relieve hypertension. Some guidelines for continuing a healthy lifestyle pattern include losing weight, reducing salt consumption, exercising regularly, reducing alcohol consumption, and quitting smoking.[7] In this case, hypertensive patients are advised to apply self-management as a disease management tool in everyday life.[8]

Self-management is a person's ability to control disease symptoms, take care of their body and soul, and start a healthier lifestyle in accordance with the doctor's recommendations to improve their quality of life. The purpose of self-management is carried out so that patients can be more effective and efficient in managing their health status in the long term, especially for people suffering from chronic diseases such as hypertension.[9] Self-management here includes five dimensions, namely self-integration, self-regulation, interaction

with health workers, blood pressure monitoring and compliance with recommended rules.[10]

Hypertensive patients who have good self-management skills can control their disease better and more beneficially. Good self-management is seen from patients who are actively involved in self-care and are able to make decisions that support the recovery of the patient's health, including knowing when to seek help from health services. If this self-management is not carried out, then people with hypertension will tend to be unable to make decisions that support health recovery.[11] In order not to cause serious complications, people with hypertension must know the definition of hypertension, things that can increase their risk, symptoms that appear as the disease increases, and the importance of taking medication regularly and according to the recommended dose. Hypertension also cannot be cured and can only be controlled. Therefore, patients must be willing to carry out continuous treatment even for life while implementing a healthy lifestyle.[12]

Based on the results of research conducted by Syamsuddin et al. on 31 respondents with hypertension, it shows that there is an effect of self-management on the blood pressure of hypertensive patients.[8] The statistical test results obtained a value of p = 0.001 with α < 0.05. According to research conducted by Pae et al.,[9]with a sample of 26 elderly people in Curah Cottok Village, East Java Regency with data collection in the form of Hypertension Self-Management Behavior Questionnaire (HSMBQ) and sphygmomanometer to measure blood pressure. The results of this study found that there was a significant relationship between self-care management and elderly blood pressure where the higher the value of self-care management, the lower the blood pressure. Research from Khalesi et al.,[13] with a sample of 233 adults in Australia showed that people with hypertension with poor blood pressure monitoring and those who lead a less healthy lifestyle are less likely to successfully control blood pressure.

Based on the description presented above, the researcher is interested in conducting a study on the relationship between self-management and blood pressure among hypertension sufferers in the Kediri I Health Center area, Tabanan District.

2. METHODS

The type of research used in this study is a correlational quantitative method with a cross-sectional approach. The research was conducted in the Kediri I Health Center Working Area in March-April 2024. The population amounted to 438 people with a sample size of 82 respondents. The inclusion criteria in this study are as follows: willing to be a respondent, aged 15-59 years, and communicative. Exclusion criteria are: respondents who have complications of other diseases. The sampling technique used was non-probability sampling with purposive sampling.

Data collection used a standardized questionnaire, namely HSMBQ (Hypertension Self-Management Behavior Questionnaire) and blood pressure measurement with a sphygmomanometer. The HSMBQ questionnaire consists of 40 statements with 13 statements on self-integration indicators, 9 statements on self-regulation indicators, 9 statements on indicators of interaction with health workers, 4 items on blood pressure monitoring indicators and 5 items on indicators of compliance with recommended rules.

Primary data were collected using a questionnaire and sphygmomanometer and analyzed using SPSS. Data on age, gender, and education were analyzed by univariate analysis. Bivariate analysis was performed by analyzing the relationship between self-management and blood pressure of hypertensive sufferers in the region kediri i health center work tabanan district. Researchers conducted a spearman rank test obtained a p value of 0.000 and a correlation coefficient of r = -0.732 which indicates that there is a significant and strong relationship between self-management and blood pressure of hypertensive patients.

This research has received ethical approval from the Chairperson of the Health Research Ethics Commission of the Denpasar Health Polytechnic with number: DP.04.02 / F.XXXII.25 / 0522 / 2024.

3. RESULTS

Based on Table 1, it can be seen that the most respondents are 55-59 years old, namely 37 people (45.1%), female gender, 53 people (64.6%), and elementary school education as many as 34 people (41.5%).

Table 1. Characteristics of research respondents based on age, gender and education

No.	Characteristic	Frequency(n)	Percentage (%)
1.	Age (year)		
	15-19	5	6.1
	20-44	12	14.6
	45-54	28	34.2
	55-59	37	45.1
2.	Gender		
	Male	29	35.4
	Female	53	64.6
3.	Education		
	Elementary	34	41.5
	Junior High	19	23.1
	High School	18	22.0
	Higher Education	11	13.4
	Total	82	100.0

Based on Table 2, it shows that the most respondents' self-management is in the less category, namely 46 people (56.1%).

Table 3 shows that most respondents' blood pressure was in the stage 1 hypertension category, namely 39 people (47.6%).

Table 2. Characteristics of research respondents based on self-management

Self-management	Frequency (n)	Percentage (%)
Less	46	56.1
Enough	22	26.8
Good	14	17.1
Total	82	100.0

Table 3. Characteristics of research respondents based on blood pressure

Blood Pressure	Frequency (n)	Percentage (%)
Pre-hypertension	27	32.9
Stage 1 hypertension	39	47.6
Stage 2 hypertension	16	19.5
Total	82	100.0

Based on Table 4, it shows that self-management in the poor category is mostly in respondents with stage 1 hypertension, namely 29 people (63.1%), while self-management in the good category is mostly in respondents with pre-hypertension, namely 13 people (92.8%). The results of bivariate analysis using the Spearman rank correlation test obtained a p value of 0.000, which indicates that there is a significant relationship between self-management and blood pressure. The results of the analysis also showed that the value of the spearman rank correlation (r) was -0.732 which showed a negative relationship direction and a strong relationship between self-management and blood pressure. The direction of the negative relationship indicates the opposite direction of the relationship between self-management and blood pressure, which means that the higher the self-management, the lower the blood pressure of hypertensive patients and vice versa.

Table 4. Relationship between self-management and blood pressure of hypertension patients

Self-management	Blood pressure								*r*	*p value*
	Pre hypertension		Stage 1 hypertension		Stage 2 hypertension		Total			
	n	%	n	%	n	%	n	%		
Less	1	2.1	29	63.1	16	34.8	46	100.0	-0.732	0.000
Enough	13	59.1	9	40.9	0	0.0	22	100.0		
Good	13	92.8	1	7.2	0	0.0	14	100.0		
Total	27	32.9	39	47.6	16	19.5	82	100.0		

4. DISCUSSION

Based on age frequency data, most patients with hypertension are 55-59 years old, as many as 37 people (45.1%). The results of this study are in line with the research of Yunus et al.,[14] showing that patients who were respondents in their research in 2020 were mostly 51-60 years old. The results of this study can be possible because at that age, the body experiences a decrease in the function of its organs due to the aging process. The immune system does not function as well as when they were young, making the elderly vulnerable to various diseases. The researchers assume that age can affect blood pressure. With increasing age, the body will experience a decrease in organ function due to the aging process, resulting in an increase in blood pressure.

Based on gender frequency data, most hypertensive patients were female, as many as 53 people (64.6%). This study is in line with Podungge (2020),[15] which states that an increased risk of high blood pressure in women will occur after menopause, namely age over 45 years. Women who have not yet menopaused are protected by the hormone esterogen which plays a role in increasing HDL (High Density Lipoprotein) levels. High HDL cholesterol levels are a protective factor in preventing atherosclerosis. Meanwhile, when HDL cholesterol levels are low and LDL (Low Density Lipoprotein) cholesterol levels are high, the process of atherosclerosis occurs and results in high blood pressure. The researchers assume that women are more at risk of increased blood pressure because women go through menopause at the age of 45 - 55 years. During menopause, the production of the hormone estrogen which plays a role in increasing HDL levels decreases, so it can affect the process of atherosclerosis and cause hypertension.

Based on the frequency of education data, the highest level of education is elementary school education, as many as 34 people (41.5%). This study is in accordance with that conducted by Rejo and Nurhayati,[16] which states that there is a relationship between education level and hypertension. The level of education also determines whether or not a person is easy to absorb and understand the knowledge gained, in general, the higher a person's education, the better his knowledge. Education affects the learning process, the higher a person's education, the easier it is for that person to receive information. The more information that enters, the more knowledge is obtained about health. Researchers assume that education can affect the absorption of information about hypertension management. The higher a person's level of education, the easier it is for that person to receive information, and ultimately the more knowledge they have. And vice versa if someone with a low level of education, it will hinder the development of a person's attitude in receiving information and newly introduced values.

Based on the results of research from the self-management of respondents, it shows that the most respondents' self-management is in the less category, namely 46 people (56.1%). The results of the study are in accordance with the research of Yasril and Rahmadani.[17] stating that consumption of foods that are high in salt and fat has a significant relationship with blood pressure. Respondents admitted that they did not know how to do good self-management. Things like checking their health conditions regularly and being able to manage their disease are very important to prevent complications and improve the quality of life of hypertensive patients. Given that there are many advantages of self-management, one of which is helping people to manage their own thoughts, feelings, and actions so that they can develop optimally. In this study, it was found that self-management was in the poor category, this was due to the fact that when filling out the questionnaire, respondents responded that they rarely checked their health conditions, never exercised,

and were not compliant in regulating their diet. Researchers assume that well-implemented self-management will provide good results if accompanied by a healthy lifestyle, routine health checks, and taking medication and the need for services provided by family and health workers.

Based on the results of research from the blood pressure of respondents, it shows that most respondents' blood pressure was in the stage 1 hypertension category, namely 39 people (47.6%). This is in line with the research of Pae et al.,[9] of the 26 respondents studied most had blood pressure with stage 1 hypertension category as many as 16 people. Blood pressure is a very important factor in blood circulation, an increase or decrease in blood pressure can affect homeostatis in the body. If blood circulation is inadequate, there is a disturbance in the transportation of oxygen, carbon dioxide, and other metabolic products. Various blood pressure disorders, such as hypertension, can affect and be harmful to one's body. Today, high blood pressure is considered one of the major risk factors for heart disease. Diseases such as kidney failure, coronary heart disease, stroke, and dementia are increasing as one of the consequences of sustained hypertension that disrupts blood flow to the kidneys, heart, and brain. The mortality rate and severity of cardiovascular disease can be reduced by proper diagnosis of hypertension and hypertension therapy.[18] Researchers assume that if blood pressure monitoring is carried out regularly, it can prevent hypertension. Prevention of hypertension is by always implementing a healthy lifestyle and increasing information related to the symptoms and prevention of hypertension, which can be obtained from mass media, counseling, or the nearest health facility.

In the results of this study, it shows that self-management in the poor category is mostly in respondents with stage 1 hypertension, namely 29 people (63.1%), while self-management in the good category is mostly in respondents with pre-hypertension, namely 13 people (92.8%). The results of bivariate analysis using the Spearman rank correlation test obtained a p value of 0.000, which indicates that there is a significant relationship between self-management and blood pressure. The results of the analysis also showed that the value of the spearman rank correlation (r) was -0.732 which showed a negative relationship direction and a strong relationship between self-management and blood pressure. The direction of the negative relationship indicates the opposite direction of the relationship between self-management and blood pressure, which means that the higher the self-management, the lower the blood pressure of hypertensive patients and vice versa. The results of this study are in line with research conducted by Calisanie et al.[19] Research conducted at the Bandung Health Center on the effectiveness of self-management in hypertensive patients, stated that self-management is effective in helping reduce the blood pressure of hypertensive patients. Lifestyle changes made by respondents, including exercising, reducing salt consumption, and taking medication regularly, contributed to a decrease in blood pressure and complications that may occur. Self-management is an action taken by a person to maintain a prosperous life both in health and illness. Self-management in hypertensive patients is a form of positive effort by patients to optimize their health, control and manage signs and symptoms, prevent complications, and minimize interference with body function.[20] Self-management of hypertension is very important so that patients do not experience a decline in health as a result of a disease that often recurs. Self-management involves actions to maintain effective behaviors including, using anti-hypertensive drugs routinely and correctly, monitoring blood pressure and symptoms associated with hypertension, taking an appropriate diet to treat hypertension, exercising as directed, and doing positive activities to prevent complications of hypertension.[21]

Researchers assume that self-management is very influential on blood pressure in people with hypertension. There are still many people with hypertension in the Kediri I Health Center Working Area who do not apply self-management properly so that blood pressure increases. Unhealthy lifestyles in the community such as consumption of foods high in salt, rarely exercising, and taking irregular medication are factors that can affect blood pressure. Most people also say they are lazy to check or control their blood pressure to health services. Self-management is carried out to improve the quality of life as much as possible, identify and overcome symptoms that arise due to disease, minimize the possibility of complications, and minimize the possibility of disorders that arise due to decreased body function. Therefore, self-management must be implemented very well to prevent an increase in blood pressure and avoid complications that may occur.

5. CONCLUSION

Based on the results of the study, it can be concluded that self management has a significant relationship with blood pressure of hypertensive sufferers in The Region Kediri I Health Center Work Tabanan District

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Conflict of Interest

The authors declare no conflict of interest.

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