Dominant factors which affecting the quality of life of hypertension patients in rural and sub-urban area in Yogyakarta

Ambar Relawati¹, Movit Kurniawan²

ABSTRACT

Background: Hypertension is a condition where the systolic blood pressure result is 140 mmHg, and the diastolic blood pressure result is 90 mmHg. Uncontrolled blood pressure is one of the etiologies of the emergence of complications that will reduce the quality of life. It is necessary to measure the quality of life and to know the factors that affect the quality of life of people with hypertension as a benchmark to improve the welfare of life. This study aims to analyze the dominant factors affecting the quality of life of hypertension sufferers in rural and sub-urban areas in Yogyakarta.

Method: This type of research is non-experimental with quantitative methods and correlational descriptive design. The approach used is cross sectional. Respondents in this study amounted to 85 respondents using the purposive sampling technique. This research was conducted in February-March 2021. The data analysis used was the frequency test and logistic regression test.

Result: The dominant factor influencing the quality of life of hypertension sufferers in rural and sub-urban areas in Yogyakarta is medication adherence (OR=0.164).

Conclusion: The dominant factor influencing the quality of life of hypertension sufferers in rural and sub-urban areas in Yogyakarta is medication adherence.

Keywords: quality of life, hypertension, rural, sub-urban, Yogyakarta.

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INTRODUCTION

Technological advances in developing countries such as online motorcycle taxis have led to changes in people’s lifestyles which later gave rise to many non-communicable diseases. In the 21st century, non-communicable diseases have become a major health problem throughout the world, including Indonesia. Lack of physical activity, consumption of foods high in salt, high in fat, less consumption of vegetables and fruit, alcohol consumption and smoking are some of the factors that trigger non-communicable diseases to appear, one of which is hypertension.

According to Unger et al., (2020), hypertension, commonly known as high blood pressure, is a condition where a person has a systolic blood pressure result of more than or equal to 140 mmHg and a diastolic blood pressure result of more than or equal to 90 mmHg. The diagnosis of hypertension can be made if a person has taken blood pressure measurements twice or more at different times and the results are more than or equal to 140/90 mmHg. Hypertension is a disease that is still a big problem in any part of the world. Every year there has been an increase in cases of hypertension. It is estimated that the prevalence of hypertension today has touched 22% of the total world population. Of that number, no less than one-fifth regularly controls their blood pressure.

Based on basic health research conducted by the Indonesian Ministry of Health in 2019, the prevalence of hypertension in Indonesia based on measurements has increased to 34.11% compared to 2013, which was 25.8%. Meanwhile, the prevalence of hypertension in the Special Region of Yogyakarta (DIY) based on measurements also increased to 32.86% compared to 2013, which was 25.7%. From this data, in 2018, DIY was in the top 15, with the highest hypertension cases in Indonesia. Hypertension that lasts for a long time and is not controlled can lead to various complications, such as congestive heart failure, stroke, retinopathy, and kidney failure. This subsequently causes discomfort to sufferers, ultimately reducing their quality of life. Khalifeh et al. (2015), in their research, explained that the quality of life of patients with dominant hypertension was lower than individuals who did not suffer from hypertension. The decline in the quality of life of people with hypertension can create obstacles, such as decreased physical, psychological, and social health.

One of the main points in improving one’s health is to increase obedience. Obedience is an important trait that believers must possess because it is the key to success in obtaining Allah’s grace to get to His paradise. This is stated in the Qur’an Surah An-Nur verse 52, which means ‘And whoever obeys Allah and His Messenger and fears Allah and
fears Him, then they are the ones who get the victory." Compliance with taking antihypertensive drugs can be a factor related to the quality of life of people with hypertension. Based on research by Nurmalita et al. (2019), there were three hypertensive sufferers (6.7%) with low compliance with low quality of life, while 42 hypertensive patients (93.3%) consisted of 29 people (64, 4%) in the category of high compliance, and 13 people (28.9%) in the category of moderate compliance are classified as having a good quality of life.7

The support factor provided by the closest family can also be related to the quality of life of people with hypertension. Based on Susanto's research (2017), there were 47 hypertensive patients (51%) who had good family support and relatively good quality of life, while 40 hypertensive patients (44%) had low-income family support and poor quality as well.8 According to Afiani (2014), the economic level will affect people's life and quality of life with hypertension. In hypertension, it is necessary to control blood pressure for life in order to maintain its health. Of course, it must be supported by good economic conditions as well. In his research, Afiani (2014) reported that as many as 50.9% of hypertension sufferers with low economic levels also have a poor quality of life. Meanwhile, people with hypertension whose economic level is in the medium and high range have a good quality of life.9 According to L. Zhang et al. (2017), individuals with hypertension have a lower quality of life than individuals without hypertension. Complications such as myocardial infarction, stroke, and angina pectoris are associated with poor quality of life measurement outcomes in hypertensive patients. Income level, education level, and family history of disease were risk factors that cause low quality of life in individuals with hypertension and normotension.10

Based on data from the Kasihan Health Center 1 from July to September 2020, 107 hypertensive patients aged 36-55 years visited. Furthermore, the researchers took three hypertensive patients to be interviewed. The result showed that two out of three people with hypertension took antihypertensive drugs prescribed by the puskesmas, although not routinely; it was only when they had neck pain and dizziness. Three respondents also said that support from family was very important because humans cannot live alone. They need help and support from those closest to them. From the economic side, one out of three respondents had an income above the Bantul UMK, while two of them had an income below the UMK. Based on the explanation of the background above, this study aimed to see the dominant factors that affect the quality of life of people with hypertension in rural and sub-urban areas in Yogyakarta.

**METHODS**

Type of Research: This descriptive correlational research used a cross sectional approach. The population in this study were patients with hypertension in the working area of the Kasihan 1 Health Center who visited in July-September 2020 as many as 107 people.

Time Background: The research was conducted in February-March 2021 by visiting each respondent at their residence. Before the research began, the researcher explained the flow and procedures for filling out the questionnaire. If the respondent agrees to join the study, the respondent would be asked to sign the researcher’s informed consent. Furthermore, the research begins by filling out a questionnaire by the respondent. During the research, the researcher had waited for the respondent to fill out the questionnaire. In this case, when the respondent was confused with the question or statement in the questionnaire, they could ask the researcher directly.

Sampling technique: This research used a purposive sampling technique with the inclusion criteria of hypertensive patients seeking treatment at the Kasihan Public Health Center 1 with the category of late adult to early elderly. After calculating the sample using the Slovin formula, 85 people were obtained as the samples.

Research instrument: this research used a demographic data questionnaire including gender, age, and duration of hypertension; the World Health Organization-BREF (WHOQOL-BREF) questionnaire from the World Health Organization (WHO) to obtain data on the quality of life of patients with hypertension, the Morisky Medication Adherence Scale-8 (MMAS-8) questionnaire from Morisky to get data on the level of adherence to taking antihypertensive drugs and a questionnaire family support created by Radiani, (2018) to obtain family support data.

Data Analysis: The data analysis used was multiple logistic regression with the condition that the variables entered had a p-value of 0.25. This research had passed the ethical test from the Ethics Committee of the Faculty of Medicine and Health Sciences, Universitas Muhammadiyah Yogyakarta, with a letter of ethics no. 301/ EC-KEPK FKIK UMY/XII/2020.

**RESULTS**

Based on table 1, the respondents were dominated by female respondents with the number of 65 (76.5%), pre-elderly were 51 respondents (60%), and long suffering from hypertension from one to 5 years were 62 respondents (72.9%). Based on table 2, there were 2 factors that affect the quality of life of patients, namely adherence to taking medication with a value of OR = 0.164 and family

| Table 1. Characteristics of Respondents. |
|-----------------------------------------|
| No | Characteristics | Frequency (n) | Percentage (%) |
|----|-----------------|--------------|---------------|
| 1  | Sex             |              |               |
|    | Male            | 20           | 23.5          |
|    | Female          | 65           | 76.5          |
| 2  | Age             |              |               |
|    | Late adult      | 34           | 40            |
|    | Elderly         | 51           | 60            |
| 3  | Hypertension suffering periods | |               |
|    | 1-5 years       | 62           | 72.9          |
|    | 6-10 years      | 13           | 15.3          |
|    | >10 years       | 10           | 11.8          |
support with a value of OR = 0.059. From these results, the dominant factor affecting the quality of life of patients with hypertension was medication adherence.

**DISCUSSION**

**Characteristics of Respondents**

Based on table 3, there were more women with hypertension than men. Research conducted by Xiao et al. (2019) also found that most of the respondents were female. As many as 341 people (60.14%) suffered from hypertension. This study also aligns with Esther et al. (2017) that female hypertension sufferers dominate as many as 54 people (54%). Gender is one of the risk factors for hypertension that cannot be modified. In Indonesia, the incidence of hypertension is dominated by the female gender. According to Azhari (2017), women have a greater chance of developing hypertension, which is 2.7 times compared to men. Women who have not entered menopause have greater levels of the hormone estrogen, which has a role in increasing HDL levels. High HDL levels are a protective factor in preventing the process of arteriosclerosis. Estrogen levels can be decreased when women enter menopause so that women will be more susceptible to hypertension.

This result was dominated by pre-elderly respondents. An age growth can increase a person’s risk of developing hypertension. This could happen because a development to become elderly could lead a person’s body to experience a decrease in all organ systems and blood vessels due to the undeniable aging process. Blood vessels that are initially flexible can experience a loss of elasticity which causes the arteries and aorta to lose their ability to adjust to blood flow, thereby increasing the risk of developing hypertension. This research sample were dominated by hypertensive patients with one to five years suffering periods. This could be happened because patients who had recently been diagnosed with hypertension would be more diligent in controlling it than patients who had been suffering for a long time. Long-suffering from hypertension is one of the factors of a person’s non-compliance in undergoing hypertension treatment.

The longer a person suffers from hypertension, the lower level of compliance of a person undergoing treatment at a health center. This could happen because people with hypertension who have taken treatment-experienced have contrary expectations of recovery rate.

The duration of uncontrolled hypertension can also increase the risk of complications such as stroke to kidney disease. Of the complications that can arise, it can be a time bomb and have an impact on the psychology of people with hypertension.

**Dominant Factors Associated with Quality of Life of Patients with Hypertension**

Based on table 3, it was found that there were two variables related to the quality of life of patients with hypertension. Of the two variables, the most dominantly related to the quality of life of patients with hypertension was medication adherence with an OR value of 0.164. The results of the OR could explain that hypertensive patients who were obedient in taking antihypertensive drugs tend to have a good quality of life by 0.164 times compared to hypertensive patients who did not adhere to taking antihypertensive drugs after being controlled with family support variables. According to Sarangi, compliance in treatment is when the patient can obey the advice given by the health worker regarding all the things that must be done to achieve the goals that have been previously set. Adherence describes the extent to which patients carry out the rules in treatment given by health workers who provide treatment.

The high OR value for the medication adherence variable compared to the family support variable in this study was because the majority of hypertensive patients had recently suffered from hypertension, which was under five years. This made them have higher enthusiasm and motivation to control and carry out treatment therapy compared to hypertensive patients who have long been exposed to hypertension. This assumption is supported by the findings of Liberty et al. that the determinant that affects patient compliance in taking medication is the length of time suffering from hypertension. The longer a person suffers from hypertension, the higher tendency to disobey because the healing rate achieved is not as they expected. Gama et al. in their research, also said that the longer a person suffers from hypertension, the lower the level of compliance. This is because most sufferers will feel increasingly bored to control and carry out prescribed therapy. The participation of health workers is needed to break the boredom of hypertensive patients who have long suffered from hypertension. Efforts that can be made by health workers include socializing the importance of undergoing regular treatment, conducting health education about hypertension to the general public, and providing brochures about hypertension. This could indirectly increase the knowledge of hypertension sufferers and their closest people. Consequently, they can motivate them to undergo regular treatment.

According to Berkowitz (2013), in performing hypertension treatment therapy, the knowledge of hypertension sufferers about their disease has an important role in increasing their compliance in undergoing therapy. Patients with hypertension, since has been being diagnosed, must have sufficient knowledge which includes an understanding of hypertension, factors causing hypertension, signs and symptoms that often appear and the importance of taking regular treatment in the long term and knowing complications or dangers that can arise if they do not take medication. Patients who already know about the disease they are suffering from are expected to be more obedient in undergoing therapy.

The purpose of giving antihypertensive therapy is to stabilize the blood pressure of hypertensive patients. Blood pressure

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**Table 2. Dominant Factors which Associated with Life Quality.**

| Variable               | P   | OR  | IK95%       |
|------------------------|-----|-----|-------------|
| Family Support         | 0.004 | 0.059 | 0.009 | 0.398 |
| Medication Compliance  | 0.008 | 0.164 | 0.043 | 0.620 |
needs to be maintained within normal limits to prevent complications and worsen quality of life. Good knowledge about hypertension can encourage people to take treatment and motivate them to comply with the treatment program. When blood pressure can be controlled and stable, the number of complications, mortality and morbidity can be reduced. Hence, the worsening quality level can decrease. This study has limitations; first, the research location is only at one health center. Second, the number of samples is small, so it cannot describe the overall condition of hypertensive patients in Yogyakarta. Therefore, it is necessary to study with larger sample size and evaluate other risk factors that may impact the patient’s quality of life, which have not been considered in this study.

Some limitations in this study need to be acknowledged and addressed in future studies. One limitation of this study is that pandemics caused data collection to be delayed due to restrictions on visits to the research area. Future studies may anticipate online data collection and make an easy instruction to guide respondents. Another limitation is that it exclusively focuses on hypertension patients. Future studies may widen the sample by including family members. Researchers may go deeper by investigating family members’ views and experience while caring for their family members who suffer from hypertension.

CONCLUSION
Based on the study results, it can be concluded that the majority of hypertension patients are women of pre-elderly age and have suffered from hypertension for less than five years. The dominant factor that affects patients’ quality of life with hypertension is adherence to medication and have suffered from hypertension for more than five years. The dominant factor contributing to hypertension is compliance to medication that affects patients’ quality of life with hypertension.

ABOUT CONTRIBUTION
All authors equally contributed to all processes in this research, including preparation, data gathering, data analysis, drafting, and approval for publication of this manuscript.

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