

The Knowledge of Hypertension Patients about Stroke Risk and Treatment at Santa Elisabeth Hospital Medan

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Abstract. Hypertension substantially increases the risk of developing secondary conditions, including stroke, renal disease, coronary heart disease, and heart failure. Early management is therefore essential to prevent complications and adverse outcomes. Evidence indicates that untreated hypertension contributes to approximately 60% of stroke cases. Public knowledge regarding hypertension-related complications remains limited, and many individuals are unable to identify early signs of stroke the most common complication associated with hypertension. This study aimed to assess the knowledge of hypertensive patients regarding stroke risk and management at Santa Elisabeth Hospital Medan in 2024. A descriptive research design was employed. The sample consisted of 67 hypertensive patients attending the outpatient clinic, selected through purposive sampling. Data were presented using frequency distribution tables. The findings revealed that 52.2% of respondents demonstrated poor knowledge, 32.8% had moderate knowledge, and only 14.9% showed good knowledge regarding stroke risk and management. These results underscore the need for patients to adopt healthier lifestyles and for the hospital to strengthen educational efforts by providing more engaging and interactive learning materials for patients and their families.

Keywords: Complications of Hypertension; Health Education; Patient Knowledge; Promotive Efforts; Risk of Stroke

Abstrak. Hipertensi merupakan salah satu faktor risiko utama yang berkontribusi terhadap berbagai komplikasi serius, termasuk stroke, penyakit ginjal, penyakit jantung koroner, dan gagal jantung. Tanpa penanganan yang adekuat, sekitar 60% kasus hipertensi dapat berakhir dengan kejadian stroke. Namun, tingkat pengetahuan masyarakat mengenai komplikasi hipertensi, terutama kemampuan mengidentifikasi gejala awal stroke, masih rendah. Penelitian ini bertujuan untuk menganalisis tingkat pengetahuan pasien hipertensi mengenai risiko dan penatalaksanaan stroke di Rumah Sakit Santa Elisabeth Medan pada tahun 2024. Penelitian menggunakan desain deskriptif dengan teknik purposive sampling, melibatkan 67 pasien hipertensi yang berobat di poliklinik. Data dikumpulkan menggunakan instrumen terstruktur dan disajikan dalam tabel distribusi frekuensi. Hasil penelitian menunjukkan bahwa 52,2% responden memiliki pengetahuan rendah, 32,8% memiliki pengetahuan cukup, dan hanya 14,9% memiliki pengetahuan yang baik. Temuan ini menegaskan perlunya peningkatan edukasi kesehatan melalui media yang lebih menarik dan interaktif, serta penguatan upaya promotif bagi pasien dan keluarga untuk mendorong perubahan gaya hidup yang lebih sehat.

Kata kunci: Edukasi Kesehatan; Komplikasi Hipertensi; Pengetahuan Pasien; Risiko Stroke; Upaya Promotif

1. INTRODUCTION

According to a 2021 World Health Organization (WHO) report, it is estimated that the number of adults worldwide suffering from hypertension is around 1.28 billion individuals. The majority of cases come from countries that have an economic level in the range of Southeast Asia, especially among the population of 1 STIKes Santa Elisabeth Medan 2 STIKes Santa Elisabeth Medan with a middle to lower economic level, the prevalence rate of hypertension reached 39.9% in 2020 (Jeemon, 2021).

The incidence of hypertension in Indonesia, according to Riskesdas 2018 data released by the Institute for Health Research and Development (Balitbankes), currently reaches 34.1%.

The information shows a growth compared to the previous data in 2013 reaching 25.8%, indicating an increase of 8.3% in the last five years. Hypertension tends to appear more often in individuals between the ages of 31-44 years is 31.6%, while in the 45-54 age group it is 45.3%, and in the age group of 55-64 years it is 55.2% according to the 2018 Basic Health Research. In 2019, the percentage of people with hypertension nationally reached 29.47%, while in Tangerang Regency, the number of people with hypertension reached 274,792 people (Laurensia, Destra, Saint, Syihab, & Ernawati, 2022).

According to the North Sumatra Provincial Health Office, there are 50,162 individuals who have hypertension. The age group that experienced the most affected was those over 55 years old, with a total of 22,618 people. Referring to information in medical records from Santa Elisabeth Hospital Medan, there were 1,245 cases of patients experiencing hypertension during the outpatient period from July to December 2023. Meanwhile, the number of patients with hypertension in the inpatient room reached 416 people in the same time span, starting from July to December 2023.

Hypertension increases the risk of the appearance of various other diseases, such as stroke, kidney disease, coronary heart disease, and the risk of heart failure. Therefore, hypertension treatment needs to be carried out immediately to prevent the possibility of complications and other negative impacts. Facts show that untreated hypertension can cause about 60% of cases to have a stroke (Afridon & Gumanti, 2022).

In North Sumatra Province, data shows that the percentage of stroke incidence reaches 14.2%, involving a total of 6,827 patients who have been diagnosed with stroke (Riskesdas, 2018). According to an epidemiological study conducted by the University of Indonesia, it was found that almost 20% of stroke incidents are events that occur more than once (Tunik, 2022). The incidence of recurrent stroke as a whole reached 29.52%, and tended to increase in the population aged 60-69 years by 36.5%, and in the span of 1-5 years it reached 78.37%. The main risk factors include high blood pressure (92.7%) and abnormal blood fat levels (34.2%) (Yardas, Riyanti, & Haryono, 2022).

Based on medical record data in 2023, there were 154 cases of stroke incidence in outpatients from June to December 2023, while the incidence of stroke in individuals who were hospitalized reached 117 people. Individuals suffering from high blood pressure may experience signs such as headache, bleeding from the nose (nosebleeds), visual disturbances, chest pain, ringing in the ears, difficulty breathing, and arrhythmias may occur. At higher levels of hypertension, these symptoms can be more severe including fatigue, nausea, confusion,

restlessness, as well as chest discomfort, muscle tremors, and blood in the urine (Harvard, 2020).

Public knowledge of the complications of hypertension is still low, and many are unable to identify the early symptoms of stroke, which is the most common complication of hypertension. This is reflected in people's habits in consuming fast food, alcoholic beverages, smoking, and not maintaining sleep patterns and physical activity. People who are aware that they have hypertension but do not comply with treatment have a higher risk of developing complications, especially stroke (Setiandari, 2022).

Stroke symptoms are not only limited to weakness of the body, but can also include impaired cognitive function that appears suddenly. It can be numbness, tingling sensations, or weakness that occurs in the face, hands, feet, or certain parts of the body, and can even involve the entire body. Other symptoms include sudden confusion, difficulty speaking or understanding, sudden changes in vision in one or both eyes, difficulty moving, loss of balance and dizziness that appears suddenly without a clear cause (Karo & Buha, 2022).

Treatment of hemorrhagic stroke also requires rapid action. The sooner the patient is taken to the hospital, the better the bleeding condition in the brain can be treated, so that it can minimize the increase in intracranial pressure that can lead to brain cell death (Artanti, 2021). A similar initiative is also implemented at Santa Elisabeth Hospital Medan, which is often referred to as stroke code or thrombolytic treatment. There are several assessment criteria in the implementation of stroke codes, including the time of symptom onset, the time of patient arrival at the hospital, and the provision of thrombolytic treatment.

Based on an initial survey conducted by researchers regarding the knowledge of hypertension patients regarding risks and treatment at Santa Elisabeth Hospital Medan, stroke cases were recorded in the period from August to October 2023, it was found that of 15 hypertensive patients, around 66.7% or 10 patients did not adequately understand the appropriate hypertension treatment. They do not realize that the use of hypertension medication must be done regularly throughout life. Hypertensive patients tend to only take the drug when they experience symptoms of increased blood pressure, such as headaches, tense necks, and weakness. In fact, hypertension patients should have a better understanding of the correct treatment, healthy lifestyle, symptoms and early signs of stroke as a complication of hypertension, and know when to seek optimal health services. This phenomenon became a concern and basis for researchers to carry out a study entitled "Hypertension Patients' Knowledge of Stroke Risk and Its Treatment at Santa Elisabeth Hospital Medan in 2024.

2. LITERATURE REVIEWS

According to the International Society of Hypertension (ISH, 2020), hypertension refers to a situation in which blood pressure in blood vessels increases, a condition in which blood pressure rises is when systolic blood pressure reaches or exceeds 140 mmHg, or diastolic blood pressure reaches or exceeds 90 mmHg. The term "silent killer" is often used to describe hypertension because of its ability to strike individuals without clear warning and potentially resulting in death.

From the perspective of vascular mechanisms, stroke can be classified into two categories, namely ischemic stroke and hemorrhagic stroke. In particular, there are three main types of stroke, namely ischemic stroke is the dominant type of stroke (87%), while intracerebral hemorrhagic stroke (10%), and subarachnoid hemorrhagic stroke (3%) (Wajngarten & Silva, 2019). Stroke ranks second as the leading cause of death and the third leading cause of global disability (Saputri, Harahap, Rivarti, & Nurhidayati, 2023).

According to an epidemiological study conducted by the University of Indonesia, it was found that almost 20% of stroke incidents are events that occur more than once (Tunik, 2022). The incidence of recurrent stroke overall reached 29.52%, and tended to STIKes Santa Elisabeth Medan 5 STIKes Santa Elisabeth Medan increased in the population aged 60-69 years by 36.5%, and in the span of 1-5 years reached 78.37%. The main risk factors include high blood pressure (92.7%) and abnormal blood fat levels (34.2%) (Yardas, Riyanti, & Haryono, 2022). Based on medical record data in 2023, there were 154 cases of stroke incidence in outpatients from June to December 2023, while the incidence of stroke in individuals who were hospitalized reached 117 people.

3. METHODS

The type of research design applied to this study is descriptive, intending to describe the knowledge of hypertension patients about the risk of stroke and its treatment will be carried out at Santa Elisabeth Hospital Medan in 2024. The population of this study involved all hypertension patients who were receiving treatment at Santa Elisabeth Hospital Medan, including patients undergoing outpatient or inpatient treatment. By referring to medical record data from Santa Elisabeth Hospital Medan during the period from July to December 2023, the average number of hypertension patients per month is 1,245 people for the outpatient unit and 416 people for the inpatient unit. Therefore, the monthly population in this study is estimated to reach around 207 patients for outpatient and around 70 patients for inpatient units during the period from July to December 2023.

In this study, the sampling method applied is purposive sampling. The purpose of this sampling is for the sample to reflect the characteristics of the overall population. The criteria for this study were patients who were undergoing treatment or self-examination at the Polyclinic at Santa Elisabeth Hospital Medan with a diagnosis of hypertension and inpatients who were diagnosed with stroke syndrome due to hypertension. The inclusion criteria include patients who were first diagnosed with hypertension in the period from April 2 to May 10, 2024 at the Internal Medicine Poly of Santa Elisabeth Hospital Medan, while the exclusion criteria for this study are hypertensive patients who were diagnosed with stroke due to hypertension. To determine the sample size to be used by the researcher using the Vincent formula with the result of the number of samples in this study reaching 67 people.

In the context of this study, there is a single variable, namely the knowledge of hypertension patients about the risk of stroke and its treatment at Santa Elisabeth Hospital Medan in 2024. Hypertensive patients' knowledge instruments about stroke: This research instrument uses questionnaires taken from previous studies (Permana, 2017). The researcher did not carry out a validity and reliability test on the questionnaire because the questionnaire was adopted from a previous study entitled The Effect of Health Education on Stroke Prevention on the Knowledge of Hypertension Patients in the Work Area of the Gamping I Sleman Health Center (Permana, 2017).

This research has also been ethically feasible from the health research commission of STIKes Santa Elisabeth Medan with letter number No: 039/KEPK-SE/PE-DT/III/2024.

4. RESULT AND DISCUSSIONS

Table 1. Frequency distribution of respondent demographic data based on Hypertension Patients' knowledge about the risk and treatment of stroke at Santa Elisabeth Hospital Medan in 2024.

Characteristics	<i>F</i>	(%)
Gender		
Male	36	53,7
Female	31	46,3
Total	67	100
Age		
41-50	8	11,9
51-60	35	52,2
61-70	23	34,3
>71	1	1,5
Total	67	100
Respondent Education		
SD	31	46,3
SMP	18	26,9

SMA	9	13,4
Sarjana	9	13,4
Total	67	100
Respondent Occupation		
IRT	16	23,9
Farmer	30	44,8
Civil Servants/Retirees	12	17,9
Private Employees	9	13,4
Total	67	100

Table 1. It shows that out of 67 respondents, the highest majority of respondents were male at 36 people (53.7%) and the lowest female gender was 31 people (46.3%). Based on the age, the majority of respondents have the highest age range of 51 – 60 years old as many as 35 people (52.2%), the lowest majority age is >71 years old 1 person (1.5). Sourced from education, the majority of the highest respondents had an elementary school education, namely 31 people (46.3%), the lowest majority had a high school and bachelor's education of 9 people (13.4%). Based on occupation, the majority of the highest respondents worked as farmers as many as 30 people (44.8%), and the majority of the lowest jobs of respondents worked as private employees as many as 9 people (13.4%).

Table 2. Distribution of Frequency of Hypertension Patients' Knowledge About Stroke Risk and Treatment at Santa Elisabeth Hospital Medan in 2024.

Total Score	F	(%)
Less	35	52,2
Enough	22	32,8
Good	10	14,9
Total	67	100

Table 2 shows that out of 67 respondents, the majority of people were knowledgeable as much as 35 people (52.2%), 22 people (32.8%) had sufficient knowledge, and 10 people (14.9%) had good knowledge.

Discussions

The results showed that the majority of hypertension patients' knowledge about stroke risk and its treatment was in the poor category as much as 52%, the moderate category was 33% and the good category was 15%. According to the researchers' assumptions, what causes a person's knowledge to be low is said to be due to a lack of information obtained, lack of self-awareness and lack of support from the immediate family in understanding what hypertension is and what the risks will occur if a person has been diagnosed with hypertension. The lower a person's self-awareness, the less knowledge he will have. Regarding the support of Mustajab's research, & Sulistyowati, (2023) said that knowledge is the result of efforts to seek information, where a person gains knowledge, previously did not know something, becomes understanding

and understanding, who initially was unable to prevent it to be able to do so. Sourced from the results of the research carried out by researchers, the low knowledge of respondents is influenced by several things, including: gender, age, education and occupation.

Sourced from the results of research carried out by researchers at the outpatient polyclinic and inpatient room of Santa Elisabeth Hospital Medan, as many as 36 respondents (53.7%) were male. This data shows that the male sex is higher than the female sex. The researcher assumed that respondents with the male gender had a poor lifestyle history, such as smoking habits (88.8%). This smoking habit can trigger stroke, because in a cigarette there are 2000 substances that have a bad impact on the health of the body. The nicotine content contained in cigarettes results in an increase in heart rate, increases heart contractions, and results in vasoconstriction in peripheral blood vessels and blood vessels in the kidneys which can cause an increase in blood pressure. In addition, the nicotine content in cigarettes can interfere with the functioning of the sympathetic nervous system by stimulating the hormone adrenaline which also affects the increase in blood pressure in the body. Increased blood pressure or we call hypertension can worsen if we do not maintain our diet and lifestyle. One of the factors that worsens the condition of a person diagnosed with hypertension can occur due to a lack of physical activity, so that fat burning in the body does not occur comprehensively which can cause stroke (Kartika, 2021).

Based on the results of research conducted by researchers at the outpatient polyclinic and inpatient room of Santa Elisabeth Hospital Medan, data was obtained that the age of the most respondents in the range of 51 – 60 years was 35 respondents (52.2%), the age of the lowest respondent was >71 years old as 1 person (1.5%). The age range of 51-60 years is a phase of life that lies between early and advanced adulthood, where a person will experience significant physical, emotional and social changes. Researchers assume that during this period a person will enter a period of preparation for retirement where a person begins to experience health changes related to the aging process that cause a decrease in the elasticity of stiff blood vessels that make blood pressure increase, hormonal changes especially in menopausal women that affect blood pressure. Other diseases such as diabetes, kidney disease, and obesity can also increase the risk of hypertension, decreased ability to remember or receive new information and degenerative processes because the body's organs have begun to decline in function. Respondents who ignored or had a negative attitude towards hypertension management caused primary hypertension at the age of <40 years. This condition can worsen the condition of patients if not controlled so that some of them can be attacked by stroke at the age of over 40 years (Ningrat & Hutahut, 2023).

In addition, Indriana and Swandari (2021) also support that age is a factor that affects knowledge, the older a person is, the more constructive he or she will be about the problems that will be faced. Age is an irreversible supporting factor that can cause a person to suffer from high blood pressure (hypertension).

Based on the results of research conducted by researchers at the outpatient polyclinic and inpatient room of Santa Elisabeth Hospital Medan, the education of the highest respondents was educated in elementary school, namely 31 respondents (46.3%). During the research, the researcher found that some of the respondents still could not read and write, this was due to the difficult economic situation of the family that did not support continuing education. According to researchers, a person with high education will find it easier to receive and analyze the information he gets so that it can affect his health behavior in the future, on the other hand, the low education of a person so that it will be more difficult to receive the information that will be given so that it can affect his health behavior. On the other hand, a person with a low education will find it difficult to accept new ideas and information, while a person with a higher education will more easily absorb information and acquire a lot of knowledge.

Education will influence a person's perspective on newly acquired knowledge and behavior by providing motivation to achieve better achievements Noble and Hutasuhut (2023). This is also supported by research by Yarden et al., 2022, higher education will make it easier for a person to absorb and understand the knowledge obtained so that it is hoped that the knowledge they have will increase.

Sourced from the results of research conducted by researchers at the outpatient polyclinic and inpatient room of Santa Elisabeth Hospital Medan, the data based on the work of respondents as many as 30 respondents (44.8%) worked as farmers and as many as 16 respondents (23.9%) as housewives. The researcher assumes that the work environment is a source of information, the more relationships we build, the more information we will receive. This makes the results of this study conclude the lack of knowledge of hypertension patients because most of the work of the respondents is farmers who are busy working from morning to night to minimize interaction with the environment.

The results of this study are in line with Kurniawan (2022), that the high workload and time as a farmer may be the cause of the high incidence of hypertension and lack of knowledge about the risk and treatment of stroke. Farmers are required to be disciplined with time so that in order for the expected results to be satisfactory, farmers rest only during mealtime. Because farmers are tired of working all day under the scorching heat of the sun, the time to get various information about hypertension is very minimal. Because if the farmers have arrived home they

will take a shower, cook for dinner after dinner they will immediately rest because they are tired from working as farmers all day so they can't take their time to study. This is the reason why the majority of farmers lack knowledge about hypertension risk and its treatment. In this case, the researcher hopes that it needs to be conveyed for farmers to introduce information sources from various media, implement a healthy lifestyle, follow health education conducted by the nearest health center/health facility, be diligent for re-control and regularly take medication to prevent stroke attacks that can worsen the patient's condition. Every farmer must expect a good harvest because there are various ways that farmers will do to produce a satisfactory harvest. One of the ways that farmers must do is to use pesticides as a powerful way to prevent plant pests, plant diseases, or weeds. These efforts cause farmers to have to use pesticides for a long period of time.

On the one hand, the use of pesticides can help farmers economically, but on the other hand, if you consider the ecology and health of farmers, pesticides can also have a negative impact on the environment. One of them is hypertension, which can be caused by prolonged exposure to pesticides. Pesticides cause acetylcholine to build up in the blood vessels, which in turn leads to irregular movement of nerve tissues and cells as well as an imbalance of blood vessels (Septiana, 2021). Uncontrolled hypertension can lead to stroke, so farming families must be involved in stroke prevention. It is hoped that families can help each other in maintaining their lifestyle to prevent stroke from happening early. The results of this study are also supported by Ekawati et al. (2021) if hypertension patients' knowledge about stroke risk is influenced by the lack of education provided about a healthy lifestyle.

5. CONCLUSION AND SUGGESTION

Sourced from the results of the study with a sample of 67 respondents related to "Knowledge of Hypertension Patients About the Risk and Treatment of Stroke at Santa Elisabeth Hospital Medan in 2024" that a total of 35 respondents (52.2%) had insufficient knowledge, 22 respondents (32.8%) had sufficient knowledge and a total of 10 respondents (14.9%) had good knowledge about the risks and their management. For education, the results of this research can be a source of data and support the theory of medical surgical nursing courses as an evidence-based practice for the application of nursing care with cardioneurological problems.

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