

ANALYSIS OF RISK FACTORS AND STROKE PREVENTION

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Abstract

Stroke is a disease known as the “silent killer,” in which there is a loss of brain function caused by a loss of blood supply to the brain. Several factors can contribute to the occurrence of a stroke, which can be divided into modifiable factors and non-modifiable factors. Variables/modifiers include hypertension, smoking, diabetes mellitus (DM), heart disease, dyslipidemia, exercise and obesity, alcohol, drug abuse, oral contraceptives, blood disorders, sleep, lipoproteins and homocysteine. On the other hand, factors that cannot be changed are age, gender, race/ethnicity, and genetics. The purpose of this study was to determine the repeated risk factors and prevention of repeated strokes. The method used in this study is research and literature research, and the source is obtained from Proquest, Ovid, and Google Scholar. 20 scientific journals were used in this study. The results showed that the main risk factors causing a stroke are the accumulation of fatty substances, cholesterol, calcium and other elements that supply blood to the heart and brain muscles, which has the effect of reducing the blood flow to the brain and heart. But strokes can be prevented by several efforts, stroke prevention efforts are carried out through several programs, one of which is the effect of providing healthy lifestyles CERDIK and PATUH Prevent stroke modification to stroke sufferers so that they know the promotive efforts of prevention of stroke.

Keywords: Factors, Risks and Prevention of Stroke

Introduction

According to the World Health Organization (WHO), stroke is a condition characterized by a rapidly developing clinical sign in the form of focal and global neurological deficits, which may be aggravating and last 24 hours or more and/ or cause death, without any other obvious cause other than vascular. A stroke occurs when blood vessels in the brain are blocked or ruptured, preventing part of the brain from receiving the blood supply that carries necessary oxygen, resulting in cell/network death (Kemenkes RI, 2019). In Indonesia, national data show that stroke is the leading cause of death at 15.4% and the leading cause of disability among adults (Ministry of Health of the Republic of Indonesia, 2008). Stroke is the leading cause of disability and the third leading cause of death worldwide after heart disease and cancer, in both developed and developing countries. The burden of stroke is mainly caused by disability (a public health problem) and also imposes high costs on patients, families, communities and governments. (Khairatunnisa & Dian, et al. 2017).

Stroke causes sudden, progressive, and rapid brain damage due to non-traumatic cerebral circulation disorders. This is a disease that causes symptoms such as sudden paralysis on one side of the face or limbs, unclear speech, changes in consciousness, and visual impairment (Yofa, et al. 2022). The number of stroke sufferers is increasing from year to year, and does not only occur in the elderly. Even among young and talented people. This is caused by people's unhealthy lifestyles such as: Due to

laziness, fatty diet, and high cholesterol levels, many of them suffer from stroke-causing diseases (Giri Udani, 2013).

Preventive measures are one of the most effective and efficient ways to reduce the incidence of stroke. Understanding the risk factors that cause stroke can lead to new prevention efforts. Factors that cause stroke are divided into irreversible risk factors and changeable or modifiable risk factors. Risk factors that cannot be changed include increasing age and increasing male gender. Modified risk factors include hypertension, diabetes, and dyslipidemia. Stroke can be prevented by making lifestyle changes and treating and controlling risk factors. Changing lifestyles is one of the ways to avoid repeated (secondary) brain accidents. The recurrence wakes up by monitoring dangerous factors due to treatment and lifestyle changes. Changes in lifestyle can effectively promote the occurrence of secondary stroke by risking stroke (Amila, et al. 2018). Stroke can cause various changes in humans. A severe stroke can be fatal. However, even if death does not occur, patients can suffer from depression, dementia, and recurrent strokes. The occurrence of recurrent strokes is of course a big concern because it increases the cost of treatment and the possibility of worsening the patient's condition (Makmur, et al. 2020).

Lifestyle and eating habits have a significant impact on the development of stroke risk factors such as frequent smoking, consumption of soft drinks and alcohol, frequent consumption of fast food, fast food, and junk food (Setiawan et al., 2020). Stroke prevention can be done through healthy activities such as regular exercise, avoiding alcohol, avoiding high cholesterol foods, and quitting smoking. The emergence of stress due to a very busy life requires relaxation (Srinayanti et al., 2021). If the treatment is done appropriately and quickly, the patient can recover. Delayed treatment can be life-threatening or fatal (Simbolon et al., 2018).

The main problem faced by stroke patients is their lack of knowledge about the factors and risks of stroke prevention. One of the main factors causing delayed treatment is lack of knowledge about the signs, symptoms, and indications of stroke (Widianti et al., 2021). It is undeniable that patients at risk of stroke may also have less knowledge about this disease Knowledge gap also occurs in patients who are at high risk of stroke (Setiawan et al., 2018). Recognizing the signs and warnings of stroke can reduce the impact of death and disability and ensure stroke patients get the right treatment immediately (Handayani, 2019). Patients will recover faster if family members are directly involved in the healing process. Without this family support, the patient's recovery would be slower. Therefore, the family plays an important role in the patient's physical and cognitive recovery period (Wurtiningsih, 2013).

Method

The method used in this study is the study literature study. The study literature study method is centered on the results of library data collection, reading and noting, and manage research materials with reference to journals, and articles relating to the research topic and the establishment of the formulation of problems on stroke risk factors and how to prevent it. Journals are searched with Google Scholar, ProQuest, Ovid and 20 Journals related to writing topics. The chosen journal is the journal viable for the last 8 years beginning from 2016 to the year 2024. The available data will be processed and served in the form of tabulation.

Result and Discussion

Publisher	Method	Result
Yofa, Anggriani U, <i>et al.</i> 2022	Use the results of screening and literature studies	Risk factors that influence the incidence of stroke include gender, age, education level, history of high blood pressure, obesity, blood cholesterol, coronary heart disease, smoking habits, intake of salt-rich foods, and physical activity. This includes decreases.
Wayunah, <i>et al.</i> 2017	Quantitative method using survey research design, cross sectional study.	People who use heavy activities have a risk of exposed to CVD-SH stroke by 5,8 times higher than CVD-SNH when compared to those who have moderate activities after being controlled by education, history of hypertension, family history, history of DM, Heart history, cholesterol levels Blood, obesity, and age.
Tunik, <i>et al.</i> 2022	The study of the study or literature review	Changeable factors and factors that cannot be changed; faktor penggunaan farmakologi dan nonfarmakologi; Disease control which is a risk factor; Another factor is the psychological factor of sufferers
Imran, Yudhisman. <i>et al.</i> 2024	Counseling online using the Zoom Video Conference Meeting application.	The results of the knowledge level after counseling are 71.88% of the correct answers and are expected to increase public knowledge about stroke risk factors and know the efforts that must be made if there are people around the stroke.
Handayani, <i>et al.</i> 2023	Cross sectional design studies	There is a relationship between age and the severity of stroke based on the analysis results using a sperm range test in the table obtained a significant value of $0.002 > 0.05$ which states that there is a relationship between age and severity
Sari, Indah. 2022	Ecological Analysis Approach	There is an influence on blood pressure control in no routine with the incidence of strokes. The more routinely control blood pressure increasingly the possibility of experiencing repeated strokes.
Susanti, <i>et al.</i> 2018	Observational analytic with retrospective data collection of cohorts	There was no distinction in accomplishing circulatory strain focuses among Lisinopril and Valsartan clients in ischemic stroke patients with a gamble figure of hypertension the Short term Establishment of the Bethesda Clinic in Yogyakarta
Amilia, <i>et al.</i> 2018	Community service	Respondents have a number of stroke attacks twice. Families of patients have sufficient knowledge of understanding, causes and symptoms caused by stroke but most of them also have less knowledge about diet, restrictions and rehabilitation stroke
Cahyanti, AN, <i>et al.</i> 2021	Literatur review	Who get family support goes into the medium to high category. While those who are able to manage their behavior well in prevention of stroke in hypertensive patients enter into the less up to sufficient category.
Safitri, Wahyuningsih, <i>et al.</i> 2020	Descriptive Correlational and cross-cut methods	Most of the knowledge and motivation for prevention of respondents is good, there is a strong

		relationship between knowledge with the motivation of prevention of stroke in hypertensive patients.
Udani, Giri. 2013	Cross sectional study method	It was found that there were 44 clients (74.6%) experiencing stress suffering from strokes and there was a relationship between stress risk factors with the incidence of suffering stroke, this shows that stress directly affects the occurrence of strokes.
Damanik, Hamonangan. 2018	Descriptive correlative with a cross sectional approach.	Stroke prevention behavior is very based on someone's understanding of the knowledge of the stroke itself.
Primantika, DA, <i>et al.</i> 2023	Descriptive correlative with short cross sectional	Suggestions for hypertension sufferers to always actively control regularly in blood pressure checks, cholesterol, gout and blood sugar. And always maintain a healthy lifestyle so that the stroke and suggestions for families are expected to always supervise and remind sufferers
Sulaiman, <i>et al.</i> 2017	Community service	There was an increase in the awareness of the elderly and the elderly family in checking his health every month to the posyandu. If done continuously there will be a decrease in cases experienced by the elderly. At least the activity of this service can be done 3 times a year
Aspiati, <i>et al.</i> 2021	Community service	Lack of knowledge about increasing family abilities on recurrent stroke prevention, healthy lifestyles, healthy diet.
Delima, M, <i>et al.</i> 2023	Community service and education	Increased community knowledge of how to prevent strokes by doing anti-stroke exercises. People can do this anti-stroke exercise repeatedly at home.
Sapang, FAER, <i>et al.</i> 2021	Quasi Experiments Pre and Posttest Without Control	Educational healthy lifestyle CERDIK and PATUH Modification prevent repetitive strokes to all Post Stroke patients so that they know the promotive post stroke efforts, recurrent stroke prevention efforts and rehabilitation programs that must be
Riani, <i>et al.</i> 2024	Model Community development	Diligently to always control blood pressure and blood cholesterol levels to the nearest health center or other health facilities
Wirastuti, K, <i>et al.</i> 2023	Community service dan check lab	Efforts to encourage smoking cessation, a healthy diet, regular exercise, and weight management are all part of stroke prevention. Essential and optional counteraction Stroke focuses on a gamble variable of a clinical stroke and an individual's particular way of life, for example, hypertension and diabetes mellitus..
Eriyanti, T, <i>et al.</i> 2019	Descriptive analysis	Absence of information is brought about by the low degree of training, the absence of action in following wellbeing directing, for example, customary games held by wellbeing laborers and furthermore an absence of correspondence and data media.

According to the review of 20 journals cited above, people who have had a stroke are more likely to have a stroke again. There are several factors that can cause a stroke to recur. These factors can be classified as modified factors and cannot be changed. Pharmacological and non-pharmacological factors; combating diseases that are risk factors. Another factor is the patient's psychological factors (Tunik et al., 2022). The modified emissions include hypertension, smoking, diabetes (DM), heart disorders, lipid lipemia, obesity, obesity, alcohol, alcohol, drug abuse, oral contraception, sleeping models, lipopults, and homososteine. I can. Factors that cannot be changed, age, gender, racial /ethnicity, inheritance (Handayani, et al. 2023).

Stroke attacks can occur suddenly, generally because patients do not know the symptoms of stroke attacks and do not make the right effort to reduce strokes. Efforts to reduce strokes can be done with regular exercise, regular diets, changes in lifestyle. So that someone can reduce stroke attacks needed sufficient knowledge and treatment of hypertension (Damanik, Hamonangan. 2018). Another step to reducing strokes includes checking blood pressure regularly and consuming foods containing stations. Research shows that consuming rich foods can reduce the risk of stroke by up to 40%. Examples of food containing potassium include avocado, soybeans, bananas, salmon, and tomatoes. (Amila, et al. 2018).

THE DEFINITION OF A MEASURED STROKE RISK FACTOR	
1. Blood pressure (MMHG):	Blood pressure is measured using a digital tensimeter, is carried out in a sitting position and repeated twice.
<ul style="list-style-type: none"> • Normal : < 120 dan < 80 • Pre Hipertensi : 120 – 139 atau 80 – 89 • Hipertensi grade I : 140 – 150 atau 90 – 99 • Hipertensi grade II : ≥ 160 atau ≥ 100 	
2. Atrial fibrillation : Fast and irregular heart rhythm disorder. Diagnosis with electro cardiography (ECG) examination. An easy way to recognize heart rhythms among others by fingering pulse: regular or irregular	
3. Smoking	
<ul style="list-style-type: none"> • Smokers: Smoking more than 100 stems in a month and still smoking until now. • Former smokers: never smoke every day and have stopped at least more than a year. • Not a smoker: never smoked since he was young 	
4. Cholesterol level (mg/dL)	
<ul style="list-style-type: none"> • Cool / Ideal : < 200 • Was : 200 – 239 • The high : ≥ 240 	

<p>5. Diabetes mellitus (mg/dL): metabolic diseases with the characteristics of hyperglycemia that occur due to insulin secretion disorders, insulin work or both.</p> <ul style="list-style-type: none"> • Yes : Glucose levels when ≥ 200 with classical complaints. • Borderline : Glucose levels when $> 110 - < 200$ • Not : glucose levels when $80 - 110$
<p>6. Sport: Sports carried out 30 minutes / time for 5 times a week or suggested at least 150 minutes in 1 week.</p>
<p>7. Body index (kg/m²): Calculation of body weight (kg) divided by height (m) ²</p> <ul style="list-style-type: none"> • Normal : IMT 18,5-25,0 • Overweight / BB more : IMT 25,1-27,0 • Obesitas/ BB more : IMT $> 27,0$
<p>8. Stroke in the family: There is a history of biological parents or grandparents directly from the biological parents who suffer from strokes. (Wirastuti, Ken, et al. 2023)</p>

Stroke is a major cause of disability throughout the world, currently a tendency for stroke can attack at a young age between the ages of 20-44 years. The occurrence of a stroke at a young age causes some problems in quality of life, namely physical disability, depression, cognitive disorders and loss of productivity, affect socio-economic (Yofa, Anggriani U, et al. 2022). Age is a risk factor that is independent not related to the incidence of strokes. Stroke can attack anyone, even young people. Family history is one of the risk factors related to the incidence of strokes. But family history is not an independent risk factor that causes a stroke. Physical inactivity is a major risk factor for heart attacks and strokes, which are characterized by the accumulation of fat substances, cholesterol, calcium and other elements that supply blood to the heart and brain muscles, which have an impact on the decline in blood flow to the brain and the heart (Wayunah, et al. 2017). Other risk factors such as obesity, hyperlipidemia, and diabetes can affect the achievement of blood pressure targets, thus increasing the risk of repeating strokes (Susanti, et al. 2018). The increase in stroke prevalence is closely related to behavior or habits that do not control blood pressure, lack of physical activity, and smoking behavior (Sari, Indah. 2022).

The risk factors for hypertension and stress are factors that are closely related to the incidence of stroke in stroke patients (Udani, Giri. 2013). Efforts to prevent strokes in hypertensive patients, namely to always actively control regularly in blood pressure checks, cholesterol, gout and blood sugar. And always maintain a healthy lifestyle so that it prevents a stroke (Primantika, DA, et al. 2023). Efforts to prevent complications due to hypertension, one of which is stroke, namely by means of pharmacological therapy and non-pharmacological therapy. (Eriyanti, Theresia, et al. 2019). Families are the closest person who can prevent hypertension / stroke behavior through lifestyle modifications. Families can function as peer educators to promote stroke detection and lifestyle modification such as controlling hypertension, DM, heart disease and atherosclerosis with drugs and diets, smoking stops and drinking alcohol, lowering weight and diligent sports, and reducing stress (Aspiati, et al. 2021). In the elderly it was infra red rays to experience symptoms of strokes and stroke patients and other physical disorders very effective because the benefits can be immediately felt by the elderly (Sulaiman, et al. 2017).

Counseling is one of the efforts that can increase public knowledge regarding the risk factors for strokes and stroke symptoms to avoid stroke, disability and death (Imran, Yudhisman, et al. 2024). Knowledge is related to someone's motivation in preventing stroke. Someone who has good knowledge then will also contribute to the strong motivation of someone. Motivation control of blood pressure is closely related and strong with knowledge. Good knowledge of stroke prevention can motivate someone to prevent complications also good (Safitri, Wahyuningsih, et al. 2020). The high effort to prevent strokes and high behavior in controlling health is obtained from good family support. It is very necessary for good cooperation between health workers, families with hypertensive sufferers in increasing self-awareness of hypertension to be able to carry out self-care in preventing complications in hypertensive patients (Cahyanti, AN, et al. 2021).

Stroke prevention efforts are carried out through several programs, one of which is the effect of providing healthy lifestyle patterns CERDIK and PATUH Prevent modification of repetitive strokes to the behavior of stroke patients and the risk of recurrent stroke events. The provision of health education has a healthy behavior of post-stroke plants to prevent repetitive strokes and have an impact on the factor that causes the risk of recurrent stroke events. Nurses provide educational healthy lifestyles CERDIK and PATUH Repeated prevented modification to all Post Stroke patients so they know the promotive post stroke efforts, efforts to prevent repetitive strokes and rehabilitation programs that must be passed by post-stroke sufferers to restore the body's function that has disabilities. Therefore, it is expected that this structured education has been given to patients and families with strokes during hospital treatment so that patients and family are ready to undergo social rehabilitation and life at home and in the community and can prevent and reduce the risk factors for recurring strokes (Sapang, FAER, et al. 2021). In addition, increasing public knowledge of how to prevent strokes by doing anti-stroke exercises. Communities can do this anti-stroke exercise repeatedly at home (Delima, mera, et al. 2023).

The main concept in handling stroke is to provide specific treatment in time as soon as possible since the attack occurs and recognizes the symptoms of stroke attacks, it is recommended to family or friends who happened to meet brothers or friends who happened to experience stroke symptoms such as lip smile lines that were not the same, some limbs Experiencing weakness, Pelo's talk, numbness, blind vision, severe headache, then use the immediate method to the hospital. (Riani, et al. 2024).

Conclusion

Stroke risk factors are divided into changeable factors and non-changeable factors. Fakor use of pharmacology and nonpharmacology (motivation, support, knowledge, life style). Stroke prevention is very important through healthy lifestyle education, anti-stroke gymnastics, and the role of nurses in providing education to post-stroke patients. Stroke prevention efforts involve various parties, including health cadres and increasing public knowledge about how to prevent stroke, as well as implementing CERDIK and PATUH programs.

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