



Knowledge of Stroke Risk Factors Among Nurses at The Riverbank Public Health Centers in Banjar District, Indonesia

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ABSTRACT

The leading cause of mortality and morbidity worldwide is stroke. Nurses' knowledge of stroke risk factors is essential in intervening and taking preventive measures, identifying and managing patients at risk of stroke, and providing adequate care. An essential role for nurses is to prevent more severe complications to reduce disability and death from stroke. This study aimed to determine nurses' knowledge of the riverbank public health centers about risk factors for stroke in the Banjar district. The method used was descriptive quantitative using a questionnaire about nurses' knowledge of stroke risk factors with univariate analysis that presents frequency distribution tables and percentages of variables. The sample size was 45 respondents, using a total sampling technique in Martapura Barat, Martapura Timur, and Sungai Tabuk 3 Public Health Center. Data collected from September-October 2023. The study results were the knowledge of nurses at the riverbank public health centers; 33 participants (73.3%) had sufficient knowledge. Respondents' characteristics are that most women are 25 participants (55.6%). There were 32 participants (71.1%) with a Diploma III (D3) educational background, 43 participants (95.6%) who have never attended stroke-related training, and 36 participants (80%) who work for non-communicable diseases.

Keyword: Knowledge, Nurses, Risk Factors, Riverbank, Stroke



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1. Introduction

Stroke is the primary cause of mortality and morbidity globally (Woldetsadik et al., 2022). In both developed and developing countries, stroke is the third most common cause of death and the leading cause of disability worldwide, following cancer and heart disease (Khairatunnisa, 2017). Degenerative diseases, including stroke, are anticipated to continue to rise globally, with a particular emphasis on impoverished and developing nations, according to the World Health Organization. It is anticipated that the number of stroke patients will exceed 52 million annually by 2030 (Amila et al., 2022).

Low and middle-income countries accounted for 70% of strokes worldwide in 2020, according to the World Health Organization (Connie W.T., A, 2022). Indonesia has the highest stroke prevalence in Southeast Asia in 2021, with an annual prevalence of 116 to 483/100,000. The primary risk factors are hypertension, diabetes mellitus, and smoking (Connie W.T. A. et al., 2014). The incidence of stroke in South Kalimantan was 7192 people in 2019, according to data from the South Kalimantan Provincial Health Office for 2021. The most stroke patients are located in Banjar Regency, with a total of 2580 patients.

The South Kalimantan Provincial Health Office's analysis revealed that the stroke prevalence increased as a result of the adjustment for age. Women constituted the majority of the average gender, with low education and rural residence (Byna & Basit, 2020). Modifiable and non-modifiable risk factors are the two categories into which stroke risk factors are divided. Diabetes mellitus, hypertension, smoking, dyslipidemia and cholesterol levels, physical activity, obesity, alcohol, heart disease, and tuberculosis are all modifiable risk factors. Age, gender, education, family history, occupational income, previous stroke history, and rural/urban distribution are all non-modifiable risk factors (Agianto et al., 2022). Fishing is the primary occupation of people who reside along riverbanks. They cannot consume all the fish, so they preserve it as salted fish. In the region, it is customary to consume salted fish. Nevertheless, this is a contributing factor to stroke and hypertension.

In order to identify and manage patients at risk of stroke, provide adequate services, and take preventive and interventional measures, nurses must possess a comprehensive understanding of stroke risk factors (Jessyca & Sasmita, 2021). Not only that but prevention and treatment are essential for the community. Therefore, nurses must impart knowledge to them. There are three primary categories of nursing responsibilities: preventive, curative, and promotive. The promotive role of nurses is to promote a healthy lifestyle in the community by providing education on stroke risk factors. It enables nurses to assist in the prevention and reduction of stroke risk. Nurses play a preventive role by conducting stroke risk assessments and identifying stroke risk factors. The curative role of nurses in the care of patients who have experienced a stroke or are at a high risk of experiencing one (Budi et al., 2019).

The preliminary study indicated that stroke cases increased in 2023, particularly in public health centers in riverbank areas such as Martapura Barat, Martapura Timur, Sungai Tabuk 3, and Aluh-Aluh. Stress and physical and emotional issues are the primary causes of this rise in cases. People are more likely to have an unhealthy lifestyle, which can lead to health issues such as diabetes mellitus, hypertension, obesity, and cholesterol. These conditions can increase the risk of stroke. Additionally, age over 50 is a risk factor for stroke. Nurses' knowledge level regarding stroke risk factors remains low, as they are only aware of a few modifiable factors.

Nurses' knowledge in each health center regarding stroke risk factors remains limited, and the interview results tend to vary. Researchers are interested in determining the level of knowledge nurses in public health centers along the riverbank have regarding strokes in light of the phenomena above. The objective of this investigation is to characterize the level of awareness that nurses in riverbank health centers possess regarding stroke risk factors to prevent stroke and recurrent attacks, as well as reduce disability and mortality.

2. Methods

This investigation implemented a quantitative descriptive methodology, including univariate analyses of frequency distribution tables and variable percentages. This methodology was implemented to describe the current knowledge levels of nurses employed at Riverbanks public health centers. The study population consisted of 45 nurses employed at three public health centers on the riverbank in Banjar District, Martapura Barat, Martapura Timur, and Sungai Tabuk 3. These nurses were actively involved in the community health program and were willing to participate in the study. Martapura Barat Public Health Center had 12 nurses, Martapura Timur Public Health Center had 21 nurses, and Sungai Tabuk 3 Public Health Center had 12 nurses. The sampling technique employed in this investigation was total sampling. The data collection period spanned from September 1st to October 3rd, 2023. The administration phase occurred during the first week of September; the ethical approval process occurred during the second week of September; the expert panel of the instrument convened during the third week of September, and the data collection period lasted for one month from the end of September to the third week of October 2023.

The instrument utilized in this investigation was a questionnaire that assessed stroke risk factors and was evaluated by three experts for the Item Content Validity Index (I-CVI). An expert in medical-surgical nursing with experience in stroke was the initial expert. The second and third experts were in family and community nursing. An expert evaluated instrument items in the domain of knowledge, understanding, application, and analysis of stroke risk factors on the riverbank. They recommended the instrument items for terminology writing; the result was 1.00 as a high recommendation for use. The Institutional Research Board of the Faculty of Medicine and Health Sciences, Universitas Lambung Mangkurat, granted ethical approval for this research (No.212/KEPK-FK ULM/EC/VIII/2023).

3. Results

Table 1 Age and length of service characteristics of research respondents at the riverbank public health centers in the Banjar District area (n=45)

Characteristics of Respondents	Mean	SD	Min	Max
Age (Years)	35,11	8,139	24	57
Length of Service (Years)	10,42	7,206	1	30

Table 1 shows that the average age of nurses working at the riverbank public health centers was 35.11 years, and the length of work was 10.42 years.

Table 2 Research respondents' characteristics, as determined by their gender, most recent educational attainment, prior training, and division/program at the Banjar District Public Health Centers (n=45)

Characteristics of Respondents	Frequency (f)	Percentage (%)
Gender		
Male	20	44,4
Female	25	55,6
Level of Education		
Diploma's degree	32	71,1
Bachelor's of applied degree	4	8,9
Bachelor's degree	1	2,2
Ners	8	17,8
Have attended stroke training		
Yes	2	4,4
None	43	95,6
Program		
PTM	9	20
Other	36	80

Table 2 shows that the respondents' gender was primarily female, with 25 participants (55.6%). The most recent education was associate degree in nursing, held by 32 participants (71.1%). A total of 43 participants (95.6%) never participated in stroke-related training. 36 nurses (80%) were employed in programs other than PTM.

Table 3 The knowledge of nurses employed in the riverbank public health centers in the Banjar District area regarding stroke risk factors (n=45)

Nurse Knowledge	Frequency (f)	Percentage (%)
Sufficient	33	73,3
Less	12	26,7
Total	45	100

Table 3 shows that the knowledge of nurses at the public health centers was 33 participants (73.3%) and had sufficient knowledge, because several factors that influenced knowledge were the majority of the last education DIII Nursing and nurses work in programs other than PTM, and almost all respondents never attended training related to stroke.

4. Discussion

The results indicated that 33 participants (73.3%) possessed an adequate level of knowledge. The results of this investigation differ from those of prior investigations (Maratning et al., 2021). The results indicated that the majority of respondents, 16 (53.34%), had a limited understanding of the risk factors that possibly drove to stroke in their family. However, this study is consistent with the findings of Siregar & Batubara's (2021) research, which indicate that the knowledge level of respondents regarding stroke risk factors is 73.5% (sufficient) in the families of the FK USU study.

The research data indicated that the average age of nurses working at public health centers was 35.11 years old. It means that the average respondent is mature in thinking and working (Pawa et al., 2021). The age of 35 years was productive in working; in this study, although more nurses were productive, the nurses' knowledge

was in the sufficient category. Factors influencing knowledge are age and other factors such as information or mass media, cultural, social, and economic experience from others, and one's own experience last education. The study results showed that 32 nurses had the last education in D III Nursing, and 36 nurses worked in programs other than PTM.

The results show that nurses' work lengths range from 1 to 30 years, with an average of 10.42 years at the riverbank public health centers. The longer length of work could increase knowledge. However, in this study, nurses' knowledge is in the sufficient category because, from the research data, only 2 nurses received training related to stroke. In addition, factors such as age-related cognitive decline or lack of interest in work can also contribute to decreased knowledge over time. Conversely, the shorter a person works, the less their work experience.

The study included more females, precisely 25 participants (55.6%). According to Iqbal and Agritubella (2017), there are no consistent differences between men and women regarding problem-solving abilities, analytical skills, motivation, social abilities, learning abilities, and competitive drive. The gender of nurses is predominantly female, with 42 participants (85.7%) falling into this category. Additionally, this study does not distinguish between men and women regarding work productivity because both genders possess sufficient knowledge, which may be attributed to other factors such as sources of information, socio-cultural background, finance, and work experience.

The characteristics of education in the study were 32 participants (71.1%) Diploma III Nursing. The last education affects the knowledge of nurses. This can affect the competence of nurses' performance in providing care to patients with stroke risk. Nurses who have higher education can provide better care to patients with stroke risk in order to prevent stroke. According to research data, 43 nurses (95.6%) have never attended training, while 2 nurses (4.4%) have attended training related to PTM. 58 (74.4%) respondents have not participated in stroke care training. The level of knowledge of respondents who have attended training and those who have not is similar, as both possess adequate knowledge (Connie W.T A. et al., 2014). Attending stroke-related training enhances nurses' understanding of stroke risk factors, enhancing their ability to provide nursing care to patients at risk of stroke.

According to the research data, at the public health centers, 36 nurses (80%) are employed in programs other than PTM. Knowledge deficiency needed to be nt knowledge due to their lack of experience and training in the patient care of stroke risk factors. Additionally, nurses not affiliated with the PTM program may have a different level of access to PTM-related information and training than PTM program holders. The PTM division's nurses are more frequently involved with patients who have chronic diseases or are at a high risk of stroke. This experience may enhance their comprehension of stroke risk factors and their ability to mitigate them. Nurses in the PTM division frequently engage in patient education regarding preventing and managing stroke risk factors, which can enhance patients' comprehension of these factors (Wahyudi, 2020).

According to the research data, at the public health centers, 36 nurses (80%) are employed in programs other than PTM. Nurses needed to gain more knowledge due to their lack of experience and training in the patient care of stroke risk factors. Additionally, nurses not affiliated with the PTM program may not have the same level of access to PTM-related information and training as PTM program holders. The PTM division's nurses are more frequently involved with patients who have chronic diseases or are at a high risk of stroke. This experience may enhance their comprehension of stroke risk factors and their ability to mitigate them. Nurses in the PTM division frequently engage in patient education regarding preventing and managing stroke risk factors, which can enhance patients' comprehension of these factors (Wahyudi, 2020).

A total of 11 (24.4%) respondents did not know the steps to prevent stroke in hypertensive patients. In Ethiopia, the knowledge and practice of stroke prevention in hypertensive patients still need to be improved because almost half of the respondents (46.1%) did not know the risk factors for stroke (Woldetsadik, 2022). Nurses need to increase their knowledge about stroke prevention measures in hypertensive patients in order to reduce disability and death rates due to stroke. The risk factor for stroke, hypertension, is essential for nurses to know because hypertension is the main factor that causes stroke.

Nurses must be aware of the fact that physical activity is a significant factor in the prevention of stroke. They are responsible for educating patients about and promoting physical activity's benefits. A stroke is caused by the accumulation of fat, cholesterol, calcium, and other substances in the blood vessels, which reduces blood supply flow to the brain and heart. 43 (95.6%) respondents were unaware of the risk factors for stroke. The study conducted in Ethiopia also demonstrated that the respondents needed to understand better the risk factor of physical inactivity (33.8%) (Woldetsadik, 2022).

The study's findings indicate that nurses' knowledge is classified as moderate because most nurses have never attended training, with 43 nurses being the exception. Only two nurses have participated in stroke-related training, and the PTM program has only nine nurses. The increasing age, level of knowledge, life experience,

emotions, and nurses' knowledge may also contribute to this classification. Length of work, precisely the more time spent on a task, the more experience and knowledge it provides, as well as information or mass media, cultural, social, and economic factors. To acquire knowledge, one may also utilize experience from others and their own experiences. A participant's knowledge is influenced by their level of education, with participants who have received a higher education typically possessing a more comprehensive understanding than those who have received a lower level of education. Their training also influences the knowledge of nurses employed in the PTM program as knowledge increases. They are more experienced in managing patients who are at risk of stroke. Furthermore, the environment can also influence a participant's knowledge, as it initially influences an individual. Depending on the nature of the environment, an individual may acquire either beneficial or detrimental knowledge.

Stroke-related training is necessary to enhance nurses' knowledge, and they must actively pursue additional information. The more information they receive, the more diverse their knowledge will be, thereby enabling them to mitigate the effects of stroke on disability and mortality. The guidelines for stroke control in Indonesia stipulate that early detection of stroke risk factors is crucial in controlling and determining the prognosis of stroke five years in the future (Rosita & Tanastasya, 2019). One of the critical indicators that must be identified is stroke risk factors, as they are highly beneficial for developing preventive interventions (Ghani et al., 2016). Even though this research was conducted in three public health centers within two months, it still has limitations, including the small sample size and potential biases in self-reported data. Based on the findings of the study, the nurses employed in the riverbank area of the public health center must underscore the significance of continuous education and training programs to improve the knowledge and skills of nurses in stroke care, thereby enhancing patient outcomes.

5. Conclusion

The characteristics of respondents in the study were the age of nurses at the public health centers who worked on average 35.11 years, and the average length of work was 10.42 years. The majority of the respondents were female, 25 (55.6%), 32 (71.1%) had a D III Nursing degree, 43 (95.6%) never attended stroke-related training, and 36 (80%) nurses worked in programs other than PTM. The knowledge of nurses working in riverbank public health centers about stroke risk factors in Banjar District showed that 33 participants (73.3%) had sufficient knowledge. The study results showed that nurses' knowledge of stroke risk factors was sufficient to improve by increasing information about stroke, such as attending stroke care training or stroke management from the Health Office or other agencies. Therefore, the strengths of this study are the rigorous methodology (quantitative descriptive approach with validated questionnaire) and the clear presentation of findings through tables and statistical analysis.

In light of the study's findings, it is recommended that healthcare institutions prioritize stroke-related training for nurses and advocate for policy changes to facilitate continuous professional development in stroke care. Additionally, nurses must participate in continuous education and training programs to improve their understanding of stroke risk factors and to enhance patient care outcomes in the riverbank area. Finally, additional research is required to investigate the efficacy of educational interventions in enhancing nurses' knowledge and the outcomes of patients in the riverbank area concerning stroke care.

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