



## **THE RELATIONSHIP BETWEEN FAMILY KNOWLEDGE AND FAMILY BEHAVIOR IN EARLY HANDLING OF STROKE**

**Elis Nurhayati Agustina\*, Editha T Puente, Rani Santika Indriyani, Silvania Heidy Faturachman, Siti Khoeriyah Daulay**

Bachelor of Nursing Study Program, Wijaya Husada Health Institute  
Jl. Letjend Ibrahim Adjie, No. 180, Sindang Barang, Bogor, West Java, Indonesia  
**\*corresponding author:** wijayahusada@gmail.com

### **ABSTRACT**

Stroke is a condition where the brain experiences a lack of oxygen so that the brain area dies. This condition of lack of oxygen occurs suddenly and persists for 24 hours or more can cause death. Stroke is a disorder of brain function that arises suddenly caused by a disturbance in the circulation of blood to the brain and can happen to anyone and at any time. The causes of stroke include a variety of blood vessel clots in the brain, ruptured blood vessels in the brain, high blood pressure, and the effects of blood-thinning drugs. This type of research is an analytic survey, the research design used is a cross sectional design. The sampling method used total sampling with a population of initial handlers of stroke events at the dental clinic and obtained 30 respondents. Data collection was obtained through distributing questionnaires. Univariate and bivariate data analysis using Kendall's Tau test. The results showed that from a total of 30 respondents, it was known that there was a relationship between family knowledge and family behavior in the initial treatment of stroke. The statistical test results obtained a p value of 0.000.  $H_a$  is accepted,  $H_o$  is rejected with a p value  $<0.05$ . Based on the conclusions of this study, it is hoped that the relationship between family knowledge and family behavior in the initial handling of stroke events at Bogor City Hospital can provide information and include it for improvement in improving the initial handling of stroke events.

**Keywords: Knowledge, behavior, stroke**

### **INTRODUCTION**

Stroke is a condition where the brain experiences a lack of oxygen so that the brain area dies. This condition of lack of oxygen occurs suddenly and persists for 24 hours or more can cause death. Stroke is a brain function abnormality that arises suddenly caused by a disturbance in the blood circulation of the brain and can happen to anyone at any time.(1)The causes of stroke include a variety of blood vessel clots in the brain, ruptured blood vessels in the brain, high blood pressure, and the effects of blood-thinning drugs.

WHO data shows that every year there are 13.7 million cases of stroke, and around 5.5 million deaths occur due to stroke. Approximately 70% of strokes and 87% of deaths and disabilities due to stroke occur in low- and middle-income countries. Over the last four decades, the incidence of stroke in low- and middle-income countries has more than doubled. Meanwhile, the incidence of stroke has decreased by as much as 42% in high-income countries. During the last 15 years, the average stroke



occurred and resulted in more deaths in low- and middle-income countries compared to high-income countries. Stroke is a part of cardiovascular disease which is classified as a catastrophic disease because it has a broad impact economically and socially.

In 2018 as many as 10.9 per 1000 Indonesians had a stroke. This figure decreased from the previous five years of 12.10 per 1,000 population and increased compared to 2007, which was 8.3 per 1,000 population. Nationally, the prevalence of stroke in Indonesia in 2018 based on a doctor's diagnosis in the population aged more than 15 years is around 10.9% or an estimated 2,120,362 people. Stroke disease in Indonesia is the most common and ranks first in Asia. The number of deaths caused by stroke ranks second among those aged over 60 years and fifth among those aged 15-59 years. Based on the diagnosis of health workers and diagnoses/symptoms, West Java Province has the highest estimated number of sufferers, namely 238,001 people (7.4%) and 533,895 people (16.6%).<sup>5</sup> Data on the prevalence of stroke events in Bogor Regency in 2020 there were: 2,034 cases, with the first order of death rates due to non-communicable diseases, amounting to 164 people. There was a trend of increasing cases compared to 2019, namely: 1,026 cases and in 2018, namely: 822 cases. The most common age for people with stroke is 45 years and over

Researchers have conducted a preliminary study, at Bogor City Hospital in September 2022 there were 30 patients who were having a stroke or post-stroke. Researchers conducted interviews with nurses at the Bogor City Hospital and the results of the interviews obtained information that the family's reason for not bringing the family to the hospital was because they were lazy to come and were out of control.

Based on a preliminary study in October, there were 10 respondents at Bogor City Hospital, 10 of the families of stroke patients had good knowledge and 5 respondents had poor knowledge, while 5 respondents had good initial stroke handling behavior and 5 respondents had poor initial stroke behavior.

Stroke requires fast treatment and this is greatly influenced by the right early detection in the pre-hospital. Alertness to stroke with quick recognition of the signs of stroke is needed because most (95%) of the first complaints of stroke occur at home or outside the hospital. . Optimal management is the golden period for stroke sufferers to get optimal rescue, which is 3-6 hours after the stroke was first discovered. New medical treatment given more than 12 hours after a stroke occurs has a greater risk of causing permanent damage.

The large number of incidents, deaths and disabilities due to stroke significantly increases the burden of disease and increases the cost of care that must be incurred as well as increases the burden on the family. One of the efforts made to reduce the burden due to stroke is to improve outcomes by providing action/handling immediately after a stroke. and provide comprehensive services during hospitalization. About 83.9% of delays in handling stroke events were caused by pre-hospital delays. The first cause of delay is 62.3% due to lack of family knowledge about risk factors and warning symptoms of stroke so that they underestimate the early signs of stroke, families and sufferers hope that the symptoms and signs will disappear 2.7%.<sup>8</sup>



In order to avoid the risk of stroke, the knowledge and attitude of the family is needed to get early treatment at home so as not to become permanently disabled. Stroke is a medical emergency that must be handled quickly, precisely, and also carefully. Comprehensive efforts to approach stroke events require knowledge and attitude. family in this case.

Several factors of delay emphasize the components of patient care centered on family decision-making when handling, coordinating, communicating, supporting the patient's family and empowering health facilities. There are still many community members who do not know or at least the signs and symptoms that appear as an acute stroke are still a major problem delay in management after acute stroke. Another problem that is often found in the community is attitude, behavior and low level of education which can also affect delays in the management of acute stroke patients.

The role of the family in the initial handling of stroke events is very helpful in overcoming the problem of stroke management has been studied. Other research states that delays in helping in the early phase must be avoided by introducing stroke complaints and symptoms to patients and those closest to them. Family knowledge about stroke and its impact on the treatment of stroke patients has not been studied. This study aims to determine the relationship between family knowledge and family behavior in the early treatment of stroke

Based on the background above and the research that has been done, the researcher is interested in developing the research that has been done. This study aims to find a relationship between family knowledge and family behavior in the early management of stroke events in Bogor City Hospital.

## **RESEARCH METHODS**

This type of research uses an analytic survey, which is research that tries to explore how and why health phenomena occur. When conducting this research, it is analyzed by the correlation between the phenomenon of risk factors and effect factors. The effect factor in question is a result of the risk factor. In this research design, using a cross-sectional design, namely studying the dynamics between risk factors and effects, by way of approach, observation, or data collection at one time. This type of research is descriptive quantitative analytic, which is a research method that aims to see a description of phenomena that occur in a particular population and try to explore how and why these phenomena can occur.

## RESEARCH RESULT

Table 1  
 Characteristics of Respondents Based on Gender  
 At Bogor City Hospital in 2022

No	Gender	Frequency	Percentage
1	Woman	18	60%
2	Man	12	40%
	Total	30	100%

Based on table 1 on the characteristics of the respondents based on the gender of the respondents in Bogor City Hospital from 30 respondents, it was found that the majority (60%) were female, namely 18 respondents.

Table 2  
 Characteristics of Respondents by Age at Bogor City Hospital in 2022

No	Age	Frequency	Percentage
1	30-35	8	27%
2	36-40	12	40%
3	< 41	10	33%
	Total	30	100

Based on table 2 on the characteristics of the respondents based on the age of the respondents in Bogor City Hospital from 30 respondents, it was found that the majority (40%) were aged 36-40 years, namely 12 respondents.

Table 3  
 Frequency Distribution of Family Knowledge at the Beginning of Stroke Occurrences at Bogor City Hospital in 2022

No	Family Knowledge	N	%
1	Good	6	20%
2	Enough	15	50%
3	Not enough	9	30%
	Total	30	100

Based on table 3 the frequency distribution of family knowledge in the initial handling of stroke events in Bogor City Hospital from 30 respondents, it was found that the majority (50%) of the family's knowledge was sufficient, namely as many as 15 respondents. Based on table 4.3 it was found that the majority (66%) were educated, namely as many as 20 respondents.

Table 4  
 Frequency Distribution of Family Behavior in Early Handling of Stroke Events at Bogor City Hospital in 2022

No	Behavior	N	%
1	Good	9	30%
2	Enough	13	43.3%
3	Not enough	8	26.7%
	Total	30	100%

Based on table 4 of the frequency distribution of family behavior in the initial handling of stroke events in Bogor City Hospital from 30 respondents, it was found that the majority (43.3%) of family behavior was sufficient, namely as many as 13 respondents

Table 5  
 The Relationship between Family Knowledge and Family Behavior in the Early Handling of Stroke Events at Bogor City Hospital in 2022

Knowledge Family	Family Behavior						Amount Total		P-value
	Good		Enough		not enough		F	%	
	F	%	F	%	F	%			
Good	1	3,3	3	10	2	6,6	6	20	0.003
Enough	6	20	7	23,3	2	6,6	15	50	
Not enough	2	6,6	3	10	4	13,3	9	30	
Amount	9	30	13	43,3	8	26,7	30	100	

Based on table 5, the relationship between family knowledge and family behavior in the initial handling of stroke events at Bogor City Hospital in 2022, out of 30 respondents, 7 (23.3%) had sufficient family behavior. The statistical test results obtained a p value of 0.003 <0.05, which means that there is a relationship between family knowledge and family behavior in the initial handling of stroke events at Bogor City Hospital in 2022.

## **DISCUSSION**

### **1. Family Knowledge on Early Handling of Stroke Events.**

The results of the research on the frequency distribution of family knowledge in the initial handling of stroke events in Bogor City Hospital from 30 respondents, it was found that the majority (50%) of the family's knowledge was sufficient, namely as many as 15 respondents.

This research is in line with research conducted by Fitri Handayani in 2019 which shows the results of research on family knowledge about risk factors and early symptoms of stroke in table 4, showing that family knowledge about risk factors and early symptoms of stroke has the lowest score of 9 and the highest score 23 with a median value of 14.00. The data shows that respondents with knowledge values above the median were 32 people (41.56%) and knowledge below the median were 45 people (58.44%).

Knowledge is influenced by formal education factors and is very closely related. It is hoped that with higher education, the knowledge will be wider. But people with low education are not absolutely knowledgeable either. Increased knowledge is not absolutely obtained from formal education, but can also be obtained from non-formal education. Knowledge of an object contains two aspects, namely positive aspects and negative aspects. Both of these aspects will determine a person's attitude. The more positive aspects and objects that are known, the more attitudes will arise.

Based on the results of the research and theory above, the research analysis is that there is harmony between the theory and the results of this study where the majority of respondents have sufficient family knowledge.

### **2. Family Behavior in Early Handling of Stroke Events.**

The results of the research on the frequency distribution of family behavior in the initial handling of stroke events in Bogor City Hospital from 30 respondents, it was found that the majority (43.3%) of family behavior agreed, namely as many as 13 respondents.

This research is in line with research conducted by Fitri Handayani in 2019 which shows the results of family behavior analysis in the initial treatment of stroke in table 7, has a score of 3-7 with a median value of 4.00. The data shows that respondents with behavior values above the median were 32 people (41.56%) and behavior values below the median were 45 people (58.44%).

In line with the boundaries of health behavior is a person's response to stimuli or objects related to health-illness, disease, and factors that affect health-illness (health) such as the environment, food, drink, and health services.(16)

Based on the description above, the study can conclude that there is a match between the results of the research and the existing theory, where is family behavior.

### **3. The relationship between family knowledge and family behavior in the initial handling of stroke events at Bogor City Hospital**

Based on table 4.5 the relationship between family knowledge and family behavior in the initial handling of stroke events at Bogor City Hospital in 2022, out of 30 respondents, 7 (23.3%) had good family behavior. The statistical test results obtained a p value of 0.003 <0.05, which means that there is a relationship between family knowledge and family behavior in the initial handling of stroke events at Bogor City Hospital in 2022.

This research is in line with research conducted by Ainun Na'im1 in 2019 showing that the results of the correlation analysis between family knowledge and family behavior in the initial treatment of stroke using the Spearman rank test showed a p value of 0.000 ( $p < 0.05$ ), which means there is a relationship between family knowledge about risk factors and early symptoms of stroke and family behavior in early stroke management. The strength of the correlation between the two variables is strong and shows a positive correlation ( $r = 0.839$ ). Correlation with a positive direction means that the correlation is unidirectional (the greater the value of one variable, the greater the value of the other variable), meaning that the higher the value of family knowledge, the better family behavior

Knowledge or knowledge is the result of human sensing or the result of knowing someone about an object through the five senses they have. The five human senses for sensing objects, namely sight, hearing, smell, taste and touch. At the time of sensing to produce knowledge is influenced by the intensity of attention and perception of the object. Most of one's knowledge is obtained through the sense of hearing and the sense of sight.

Behavior is formed in a person from the main factor, namely the stimulus is a factor from the person (external factor), and the response is a factor from within the person concerned (internal factor). External factors or stimuli are environmental factors, both physical and non-physical in the form of social, cultural, economic, political, and so on. Internal factors that influence the formation of behavior such as attention, motivation, perception, intelligence, fantasy, and so on.

In line with the boundaries of health behavior is a person's response to stimuli or objects related to health-illness, disease, and factors that affect health-illness (health) such as the environment, food, drink, and health services.

Based on the description above, the study can conclude that family knowledge and family behavior in the initial handling of stroke events. so that there is compatibility between theory and research results.

## CONCLUSION

Based on the results of research conducted regarding the relationship between family knowledge and nurse behavior in the initial handling of stroke events in Bogor City Hospital, it can be concluded as follows:

1. It is known that the frequency distribution of family knowledge based on the results shows that as large (56.7%) is good, namely 17 respondents.
2. It is known that the frequency distribution of family behavior in Bogor City Hospital from 30 respondents, the results show that the majority (43.3%) of family behavior is good, namely as many as 13 respondents.
3. There is a relationship between family knowledge and family behavior in the initial handling of stroke events at Bogor City Hospital, from 30 respondents, 7 respondents (23.3%) had sufficient knowledge in the category of agreeing with family behavior in carrying out the initial stroke events.
4. Based on the results of bivariate analysis using the Kendal Tau correlation test, a p value of  $0.003 < (0.05)$  is obtained, so it can be interpreted that there is a relationship between family knowledge and family behavior in the initial handling of stroke events at Bogor City Hospital in 2022.

## SUGGESTION

1. For research sites, it is suggested that it be used as a guideline to provide family knowledge with family behavior in the early handling of stroke events.
2. For Educational Institutions  
It is recommended to add reference materials and reading materials for nursing courses, especially emergency nursing related to the initial handling of stroke events
3. For Further Research  
This research is expected to provide insight and add to the experience of knowledge gained during the practice into real practice.

## BIBLIOGRAPHY

1. PK St. Caralus. (2013). 60 things about stroke care at home.
2. RI, BP and PKK (2018). RKDBP and PKK (2018). Basic Health Research.
3. Rosmary, MTN, & Handayani, F. (2020). Relationship between Family Knowledge and Family Behavior in Early Handling of Stroke Incidents. *Holistic Nursing and Health Science*, 3(1), 32–39. <https://doi.org/10.14710/hnhs.3.1.2020.32-39>
4. Sari, LM, & Yuliano, A. (2019). Correlation between knowledge and attitude of the family towards the ability of early detection of acute ischemic stroke in prehospital management.
5. *data on RI health. As much as 2010%2C9%20per%201,000,flow%20blood%20to%20part%20brain*
6. *infodatin.pusdatin health RI.Ministry of Health*<file:///C:/Users/Lenovo/Downloads/infodatin->



*[stroke-dont-be-the-one%20\(2\).pdf](#)*

7. Katrisnani. (n.d.). Literature review. [http://eprints.poltekkesjogja.ac.id/2136/3/BAB II stroke literature review.pdf](http://eprints.poltekkesjogja.ac.id/2136/3/BAB%20II%20stroke%20literature%20review.pdf)
8. Muttaqin, A. (2011). Nursing Care for Clients with Nervous System Disorders.
9. Terry, CL, & Weaver, A. (2013). Critical Nursing.
10. Un., U. (2019). Literature review. [http://eprints.umpo.ac.id/5051/3/BAB 2.pdf](http://eprints.umpo.ac.id/5051/3/BAB%202.pdf)
11. Yueniwati, Y. (2016). Understanding hemorrhagic stroke and ischemia. Erlangga, R. Imaging of stroke.
12. Gofir, A. (2022). Stroke Management.
13. Mutiasari, D. (2019). Ischemic Stroke: symptoms, Risk factors, and prevention. Medika Tadulako.
14. Donsu, JD (2017). Nursing Psychology.
15. Notoatmodjo, S. (2014). Health Behavioral Science.
16. Dewi, W. and. (n.d.). Theory and Measurement of Knowledge, Attitudes and Human Behavior. 2010.
17. Yusnabeti. (2018). The relationship between physical activity and the incidence of stroke in Central Bogor residents in 2016. FKM, University of Indonesia, 128.
18. Nursalam. (2016). Nursing Science Research Methodology Practical Approach Edition.4.
19. M. Kom, NA. MK and TRJ (2020). Textbook of Family Nursing Askep Stroke. Ns.wahuni tri, S.kep, M.Kep, ns.parliani, MNS, and HD (2022). Family Textbook, bojong tile sukabumi.
20. Swarjana, IK (2012). Health Research Methodology
21. Zulfikar. (2016). Introduction to Capital Markets and Statistics Education. DEEPUBLISH.
22. Sugiyono. (2016). Quantitative Research Methods, Qualitative and R&D.
23. Douglas A. Lind, W. . (2007). Statistical Techniques in Business Economics Using Global Data Groups.