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Research Article

Early Handling of Stroke in the Community of a Public Health Center in Indonesia

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Abstract. 95% of stroke attacks happen in the community. Families therefore become the first responders for giving early care to patients when they have a stroke attack. This care can be very influential for stroke patients. This study aimed to explore the kinds of early handling of stroke patients given by families at home. This was a qualitative study with a phenomenology design, and there were six key informants (families which gave early care after strokes) recruited in this study. The data were collected through in-depth interviews and focus group discussions from November 30, 2019 to March 18, 2020. Data were analyzed by content analysis including through matrix, typology, and thematic analysis. Three themes and three stages of early handling of stroke in homes were identified in this study. The early handlings of stroke included medical handling, traditional handling, and combination handling. The early handling stages were stroke symptoms detection, contacting the medical or non medical staff, and taking patients to the public health facility. The family had enough knowledge about early handling of stroke. Families should be aware of stroke symptoms so that they can determine the right decision for patients, to reduce the risk of disability and mortality.

Keywords: stroke, early handling, family, community

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1. Introduction

Stroke was a disruption on the nervous system function directly caused by its blockage or rupture blood vessels in the brain. The brain which should be getting the nutritious supply and oxygen would have disruption because the blood supply disturbed [1]. Stroke prevalence in Amerika was estimated that there were 500,000 of new people got stroke and 150,000 died (Laily, 2017). Stroke is the 5th leading cause of death and disability in the United States [2]. Every year in developing country like Asia continent and Indonesia the stroke patients had increased, 2.5% died and the rest had light and heavy disability [3]. Non-communicable disease prevalence of Riskesdas 2018 data especially for stroke had increased compared with Riskesdas 2013. Stroke prevalence increased from 7% became 10.9% [4]/.In Indonesia, stroke ranks third as a cause of death after heart disease and cancer [5]. Based on public health office of South Kalimantan province in Banjarbaru on 2018, stroke was third rank after Banjarmasin and Martapura. In Banjarbaru on 2017,

stroke case had increased number of case, from 106 cases became 587cases. In 2018 at Liang Anggang Public Health Center working area, Banjarbaru was first rank of stroke case. That was 62 cases [6].

The high number of stroke death caused of the lack of understanding the "time is brain "concept soothe lateness happened [7]. Pinzon stated 87% stroke patients came to the hospital more than 3 hours after got attack and 46% more than 24 hours after got attack. So too in RSUD Ngudi Waluyo Wlingi, 80% came after 3 hours got attack [8].

Data recorded that 95% first complaint of stroke patients happened out of the hospital [7]. People at public health center working area at Liang Anggang still had low respond in giving early handling of stroke like let the patient over golden period and didn't take the patients to the public health. Based on the introduction study, only one of the local people directly brought patients to the hospital by their car. At first Family wanted to check up but in fact patients had the stroke symptoms.

When interviewed five families, the reasons why they let the patients for a while were lack of knowledge about the signal and symptoms of stroke. Family only knew the early handling from people to people not from the medical staff. Family didn't get information about the signal and symptoms of stroke and how to handle it. So family was still lack of knowledge about early handling of stroke. From that phenomenon above it was needed for doing early handling by patients or people around. This was for reducing the level of morbidity, mortality and disability of stroke. If this could be done the disability of stroke could be reduced.

It was necessary for the further research to know the family experience in doing early handling at Liang Anggang public health center working area. This expected to know the stages of early handling used by patients and family at Liang Anggang public health center working area. This research was done for exploring the family experience in giving early handling of stroke in community. Besides, the researcher also explored the family experience in doing early handling stages of stroke.

2. Material and Methods

This was a qualitative research with a phenomenolgy design. This research conducted at Public Health Center working area at Liang Anggang, Banjarbaru, Indonesia from November 30, 2019 to February 25, 2020. This research used trustworthiness such as credibility, transferability, dependability, and confirmability to maintain the quality of this research.

Credibility gained by asking permission to public health, meeting the gate keeper and explaining the purpose and benefit of the research. Furthermore, gatekeeper helped in observing the area in determining the sample candidates. Then, researcher did in-depth interview of key informants by using recorder and semi-structure in-depth interview guideline. For adding credibility level, researcher also did Focus Group Discussion (FGD) to key informant interviewed or called triangulation. Dependability was done by using semi-structure in-depth interview guidelines and using easy language for key informant. Data were analyzed one by one from the recorded, and then added two clarificators and analyzed the data. After interviewing, then doing FGD and analyzed again. Every data were discussed and confirmed by researcher team. Transferability was done with key informant. Data analysis used content analysis.

3. Results

3.1. Ethical Clearance

The ethical clearance of this study approved by ethics committee of the Faculty of Medicine Universitas Lambung Mangkurat University with number 564/KEPK-FKUNLAM/EC/XI/2

3.2. Sample

Six key informants employed in this study. A key informant was a family which gave the early handling of stroke patients. The sampling technique used purposive sampling with inclusion criteria required. The criteria were: (a) Age 18 years old or more. (b) People who involved in early handling of stroke and had family ties (c) A family which had no hearing problem. (d) A family which did not has a history of dementia. (e) Be ready for participated in this research.

3.3. Research Procedures

Key informant were selected by gate keeper aid and based on the criteria required. Before doing interview researcher observed at Liang Anggang public health center working area and built mutual trust among local society about one week.

Firstly the researcher made an appointment with key informant for determining the time and place. In-depth interview was done for about one hour with recorder and also observed the verbal reaction of key informant. After that data were analyzed.

TABLE 1: Family of stroke patients characteristics (n=6)

Demography characteristics	Amount	Percentage %
Gender: Male Female	1 5	16.67% 83.33%
Age 28-39 40-50 >50	2 2 2	33.33% 33.33% 33.33%
Religion: Moeslem	6	100%
Marital status: Married	6	100%
Education details: Elementary School Junior High school Senior High School	2 2 2	33.33% 33.33% 33.33%

Transcribing data is the first step, then doing the matrix making, and typology. These processes repeated every having interviewed and FGD.

Confirmability gained by confirming the data obtained to the other people who understand whether the data saturated or not. There were two ways of collecting the data. They were in-depth interview and FGD with guidelines required and were consulted with qualitative research expert of neurology nursing. The in-depth interview was done for asking family about the kinds and stages of early handling used. This done alternately. On the March 18, 2020 the researcher did FGD to six key informants at Public Health Center working area at Liang Anggang, Banjarbaru for two hours. This was for clarified the left data or not conveyed when in-depth interview.

Most of the early handling giver were female (83.33%). They were wife and his daughter. They were always beside and giving treatment the patient. Family age divided by four categories. The youngest was 37 years old and the oldest was 68 years old. The key informants were married and moeslem. This was because the majority of Banjar people were moeslem. Education background were elementary school (33.33%), junior high school (33.33%) and senior high school (33.33%).

4. Discussion

4.1. Early handling of stroke

4.1.1. Medical handling

The result showed family gave medical early handling of stroke. Family took patient to the hospital, clinic or called a nurse for home care. Referral hospital of stroke was about one hour away. However no one of family brought patients there. Family went to the nearest hospital. It was about 30 minutes. Based on the in-depth interview on six

TABLE 2: Themes of result study: Early handling of stroke

No.	Theme	Data
1.	Medical handling	*"blood pressure was 280 and couldn't resist. So we brought him to the hospital. The head was ill (while holding and shooking his head)" (in-depth interview with Mr. M, 68 years old, 6th February 2020) "yes, at night. That night he couldn't do anything (waving hand) then I brought him to the clinic at Jalan Pramuka (looked at the researcher and frowning) Dr. Jaya, yes, he is a neurologist" (in-depth interview of Mrs. D, 37 years old, 20th February 2020). "We were confused so called a nurse. At first we just wanted to check up but he got light stroke" (FGD, Mrs. M, 49 years old, 18th march 2020).*
2.	Traditional handling	*"We put telon oil on the foot and hands then massage him (holding his arms and foot alternately)" (in-depth interview, Mrs. Rh, 60 years old, on 15th February 2020). "I got a massage. I was rubbed with telon oil before going" (FGD, Mrs. Rh, 60 years old, 18th march 2020)*
3.	Combination handling	*"Because of we could treat him traditionally. So we brought him to the hospital" (FGD, Mrs.Ri,53 years old, line 57-59, 18th march 2020).*

TABLE 3: Themes of result study: Stages in giving early handling of stroke

No.	Theme	Data
1.	Detecting the stroke symptoms	*"I checked my father. Then I pricked my father's hand with a needle but no bleeding (pointing his fingers) my children said "mom, father could be having stroke" (in-depth interview, Mrs. A, 49 years old, line 52-53, 30th November 2019). "He could not left his hand and right foot (holding his hand and right foot)" (in-depth interview, Mrs. M, 49 years old, line 8-9, 28th January 2020). "He couldn't speak fluently, sometimes was low memory. He forced went home himself (frowning and smiling)" (in-depth interview, Mrs.Rh,60 years old, line 11-12, 15th February 2020). "Yes, couldn't speak. I asked why? What wrong with you? When in terrace suddenly fell from the motorcycle. Kept silent and couldn't speak. The lips were skewed (holding his cheek) but now he was normally, I thanked to god (laughing)"(FGD, Mr. B, 58 years old, line 63-66, 18th march 2020).*
2.	Calling the medical and non-medical staff	*"I contacted her (nurse). It was about one hour (frowning)" (in-depth interview, Mrs. M, 49 years old, line 41, 28th January 2020). "I was with my children, his friend and husband. Actually we were not strong enough for carrying. Our neighbor had been slept. So I called my friend (a man)"(FGD,Mrs.S, 38 years old, line 186-188, 18th march 2020).*
3.	Bringing the patients	*"Directly brought to the Idaman hospital (nodding)" (in-depth interview, Mr. M, 68 years old, line 37, 6th February 2020). "we didn't do anything because had just eating. We thought it was not serious ill (smiling)" (in-depth interview, Mr. M, 68 years old, line 40, 6th February 2020). "there were many people help us. There were 3 women, men, teenagers. It was almost 10 people. The car was full" (FGD, Mrs. Ri, 53 years old, line 204-206 and 362-364, 18th march 2020).*

key informants, 3 of them brought stroke patients to the hospital with the different time after attack. Another research also stated 3 from 4 participants brought stroke patients to the public health without knowing it was right or not [9].

The hospital chosen must had the complete facility to reduce the stroke effect of patients [10]. The patients must be brought by ambulance with complete equipment and expert handled [7]. Beside in hospital, clinic was also part of the public health service in society.[9] When in-depth interview family brought stroke patients to the clinic as the experience before and suggestion from other families.

The result showed only one key informant who brought stroke patient to the clinic. This was in line with another research that showed only 6 of 58 respondents who brought patient to the clinic [8]. Another medical handling was calling the nurse to the house. Family was confused what should they did and only just wanted to check out the patient condition without knowing the patient got stroke. Family stated when in-depth interview and FGD. There was only one key informant who called a nurse. This was in line with another research that showed only 10 of 58 respondents who called nurse to their house to examine the stroke patients [8].

4.1.2. Traditional handling

Another handling is traditional handling. Family gave massage and telon oil while waiting for the transportation or help. Family chose massage because they thought that stroke because of blood vessel cogged. So they gave message in order to make the blood flow was good. There were various effects like getting body relax. An early handling of stroke could be a traditional handling. One of them is giving a massage. A massage was an alternative way to reduce pain after accident and health enhancement [11].

Family had an initiative for rubbing telon oil on body patients to relieve the pain. Family admitted that rubbing telon oil would warm the body and revive fainting people. However in another research, family rubbed patient with telon oil before went to IGD. This was because of the lack of family knowledge and handling of stroke [9]. Telon oil contained essential oil as aromatherapy and could relieve of pain [12]. The efficacy got from telon oil were improving blood circulation, warm the skin, had volatile substance, also could increase blood monocytes (research based) [13].

4.1.3. Combination Handling

Family brought patient to public health when they failed of doing independent handling. The impact of this, the patient got late treatment. Family statement regarding this data was founded when FGD implemented. There was a family used "telon" oil then gave message. This was because of patients was unconscious and had weakness. However, there was no change. Patient still mumbled unclearly and family did not understand what patient want. Finally, family brought to the hospital. In line with Wardhani and Martini (2014), family gave massage first because of their experience before. Various effects patients would get. However, when family failed in doing independent handling, they were just leaving to the hospital with the worse condition as brain damage spread [10].

4.2. Stages in giving early handling of stroke

There were stages in giving early handling of stroke. The themes are detecting of stroke symptoms, calling the medical and non medical staff, and taking patients to the public health.

4.2.1. Detecting the stroke symptoms

The first step of early handling of stroke was handling the stroke symptoms correctly. Family had to know and understand of stroke signal. It means the family would have good decision in helping the patients. Based on the data, all family knew the signal of stroke symptoms appeared. But some of them did not know whether the signal was stroke symptoms or not.

Many emergence of stroke symptoms signal happened in outside of hospital. It was important for medical staff to give counseling society about signal of stroke symptoms and the its emergency [7]. Early detection of stroke symptoms was a beginning of giving fast aid of stroke patient. This was influenced by understanding and knowledge level of family about stroke symptoms. When family did not know the patient would get late aid. And this would affect of their health [9]. Besed on Sari, Yuliano & Almudriki (2019), there were 21 (72.4%) respondents able to do early detection and 25 (54.3%) respondents were not able to do that [14].

4.2.2. Calling the medical and non medical staff

Second stage of early handling of stroke was calling the medical staff. But another family also called the non-medical staff. Family was panic then looked for help. Based on in-depth interview, there were 4 families called medical and non medical staffs.

After family could detect the signal of stroke symptoms, family had to call the medical staff. On the other research which used questionnaire, the family brought the stroke patient to the public health or just calling the medical staff under 3 hours after having stroke symptoms. There were 60 (69.0%) respondents responded no [15].

4.2.3. Bringing the patients

After family had solid decision, family brought the patients to the place addressed. It could be medical or traditional service. Family expected that the quick response for bringing the patient to health care facility, it would be better and help to minimize the brain damage. Based on the in-depth interview, there were four key informants brought their family (patient) to the hospital. One key informant brought patient to the clinic and one key informant did not bring anywhere cause had called a nurse to their home.

Individual was suspected of stroke must be brought to the public health fast. Ambulance based on the early handling of stroke protocol had an important role in saving patients. The facilities must completed and the medical staff also must have ability in giving early handling of stroke (pre hospital).[7] Supported by another research that the family action of bringing patients still low (49.1%) caused the low of their knowledge about how to bring patient, ambulance and its function.

5. Conclusion

Family had enough knowledge about early handling of stroke. Family should aware of stroke symptoms so could determine the right decision for patients. This was to reduce the risk of disability and mortality. The medical staff were expected to give the education of health to the society related to right early handling stages of stroke so the people weren't confused and calmly to face the problem.

Further research could have qualitative research based on the researcher result. It can be medical staff utilization in community for early handling of stroke, family knowledge in detecting the stroke symptoms, family knowledge about scheme of bringing patients

to the hospital and the effect of nurse roles in educating society about early handling of stroke in community.

6. Acknowledgement

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