

ORIGINAL ARTICLE

Response time with successful handling on call patient stroke

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ARTICLE INFORMATION

Article history

Received June 03, 2024

Revised July 17, 2024

Accepted July 30, 2024

Keywords

Response Time, successful treatment of stroke

ABSTRACT

Introduction: Stroke is a dangerous disease and can cause disability and death. Stroke is the second cause of death and the third cause of disability in the world. Stroke requires quick treatment to minimize disability and death. The impact that results if stroke treatment is delayed is that it can result in permanent disability and death. **Objectives:** The aim of this research is to determine the relationship between response time and successful treatment of oncall stroke patients at PSC 119 Depok in 2023. **Methods:** The research method that will be used is an analytical research design with a correlational cross-sectional approach, population of 80 respondents, total sample technique and sample size of 30 respondents. Using the Chi-Square parametric test. **Results:** The results describe the characteristics of respondents, age 20 years – 40 years (83.3%), D3 education in nursing (83.3%), gender female (63.3%), length of work \geq 5 years (90%). The description of the response time is less fast (63.3%). description of successful treatment of oncall stroke patients who were unsuccessful (66.7%) There is a relationship between response time and successful treatment of oncall stroke patients at PSC 119 Depok in 2023, p -value $0.023 < 0.05$ and $OR = 9.333$. **Conclusions:** Conclusion response time influences the success of stroke treatment.

Journal of Nursing is a peer-reviewed journal published by the School of Nursing at the Faculty of Health Science, University of Muhammadiyah Malang (UMM), and affiliated with the Indonesia National Nurse Association (INNA) of Malang.

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Website: <http://ejournal.umm.ac.id/index.php/keperawatan>

E-mail: journal.keperawatan@umm.ac.id

1. Introduction

Stroke is a sudden focal decline in the nervous system that lasts at least twenty-four hours and is thought to originate from the blood vessels, characterized by ischemic or hemorrhagic. Transient ischemic attacks (TIAs) are focal ischemic decline in the nervous system lasting less than 24 hours and usually less than 30 minutes (Mitcel, 2022). Stroke is one of the number one causes of disability in the world after cardiovascular disease and cancer (Venanda Putri Sholihah, 2022). Stroke can occur when the brain does not receive a blood supply that carries oxygen due to blockage or rupture of brain blood vessels, resulting in cell or tissue death (Arlitadelina, 2019).

According to the World Health Organization WHO, it is 13.7 million every year, the death rate is 5.5 million. The prevalence of stroke in Indonesia is 10.9% or those aged >15 years are estimated at 2,120,362 people (Indonesia, 2018). West Java Province with a percentage of 11.8% or 96,794 people. Based on the results of a 1year survey of activity data from the PSC 119 Ambulance Depok Health Office, it was found that the highest number of call data for patients with stroke included 326 control patient activities, 120 patients with traffic accidents, 380 patients with decreased consciousness due to or having a history of stroke, and 185 Duke standby activities.

Delays in providing treatment to stroke patients which can result in disability and death are a problem in Indonesia. Stroke patients who are taken to hospital will ultimately experience delays in treatment because those who should have received quick medical treatment are late because of the dangers that the public is not yet aware of (Astina, 2018). The recommended time for stroke patients is 3 to 4.5 hours or what can be called the golden period for stroke so it requires

fast treatment (Utami, 2018). The key to success in handling blows is to take quick action by maintaining adequate breathing and ventilation after an attack occurs (Verawati, 2020). One of the factors that influences the treatment of stroke patients in preventing accidents and death is the speed of providing help (response time).

Emergency management has a philosophy, namely Time Saving, Its Live Saving. This means that all actions taken during an emergency must be truly effective and efficient (Delinda, 2021). One indicator of the success of medical treatment for emergency sufferers is the speed of providing adequate assistance to emergency sufferers both in daily routine situations and when a disaster occurs. The success of the response time is very dependent on the speed available and the quality of assistance provided to save lives or prevent injuries from the scene of the incident on the way to hospital assistance (Ambarika, 2019).

Prehospital care is a form of Emergency Medical Service. If there is severe traffic jam on the road, it can have an impact on the delay in treating patients to get to the hospital (Kushayati, 2014). The important thing in pre-hospital emergency services is known as "The Golden Time," based on observations of patients who survive emergency situations, that patients who arrive at the hospital and receive further treatment within one hour have a greater chance of survival than patients who arriving late at the hospital (Setianingsih, 2019). Nurses' responsiveness in successfully handling patients is needed quickly and precisely, apart from skill, ability, referral infrastructure systems, and road conditions must also be supportive to support the rapid handling of evacuated patients from home to hospital in order to receive further service and treatment. From the results of response time data for PSC 119 Ambulance officers from the Depok Health Office obtained from the service quality section, it was found that officer response time was still very poor and there were many failures in handling, evacuation response time should not be more than 60 minutes.

Based on a preliminary study obtained from observations of 10 nurses, of which 3 nurses were given on call cadets with stroke patients from 14.30, the distance between PSC 119 Depok and the residence to the evacuation site was 10.9 km from maps \pm 30 minutes. However, the nurse arrived at the evacuation site in 45 minutes because the road conditions were congested, so handling took 10 minutes, seeking referrals > 30 minutes, response time achieved > 60 minutes. The next 3 nurses received cadets from the call center at 04.30, the distance between PSC 119 and the residence where the evacuation was located was 3.2 km from maps \pm 11 minutes. The nurse arrived on time in 11 minutes, treatment took 10 minutes, and waited 60 minutes for hospital referral, the response time achieved was > 60 minutes. And for 4 nurses from receiving cadets to handling evacuation and going to the hospital < 60 minutes, the response time was achieved.

The aim of this research is to determine the relationship between response time and successful treatment of on call stroke patients at PSC 119 Depok in 2023.

2. Methods

The research design or type of research used is analytical research with a correlational design to determine whether there is a relationship between variables using a cross sectional approach. Who wants to know the relationship between the use of an integrated referral system (SISRUTE) and the speed of success in emergency treatment of stroke cases at PSC 119 Depok City. Cross sectional research is a type of research where measurements or observations are made only once at that time. In this type, the independent and dependent variables are evaluated simultaneously, so no observations are made. Of course, not all subjects need to be observed on the same day or time, but both the independent and dependent variables are only assessed once.

3. Results and Discussion

a. Frequency distribution of respondent characteristics in PSC Depok in 2023 (n = 30)

Table 1 Frequency distribution of respondent characteristics in PSC Depok in 2023, Source: Primary Data

Variable	Frequency	Percentage (%)
Age		
20 years - 40 years	25	83,3
> 40 years	5	16,7
Pendidikan		
D3 Nursing	25	83,3
S1	3	10,0
Profession	2	6,7
Gender		
Man	11	36,7
Woman	19	63,3
Length of working		
< 5 years	3	10
≥ 5 years	27	90

Based on the table above, the results show the characteristics of the majority of respondents, aged 20 years - 40 years, 25 respondents (83.3%), D3 nursing education, 25 respondents (83.3%), gender female, 19 respondents (63.3%), length of work ≥ 5 year 27 respondents (90%).

b. Frequency distribution based on nurse response time at PSC 119 Depok in 2023 (30)

Table 2 Frequency distribution based on nurse response time at PSC 119 Depok in 2023, Source: Primary Data

Variable	Results	
	Frequency	Percentage (%)
Response Time		
Not fast enough	19	63,3
Fast	11	36,7
Total	30	100

Based on the table above, the results show that the response time of the majority is not fast enough for 19 respondents (63.3%).

c. Frequency distribution based on successful treatment of on call stroke patients at PSC 119 Depok in 2023 (30)

Table 3 Frequency distribution based on successful treatment of on call stroke patients at PSC 119 Depok in 2023, Source: Primary Data

Variable	Results	
	Frequency	Percentage (%)
Successful treatment of stroke		
Unsuccessful	20	66,7
Success	10	33,3
Total	30	100

Based on the table above, the results show that the majority of stroke treatment success was unsuccessful, 20 respondents (66.7%).

d. The relationship between response time and successful treatment of on call stroke patients at PSC 119 Depok in 2023

Table 4 Frequency distribution based on successful treatment of on call stroke patients at PSC 119 Depok in 2023, Source: Primary Data

Response Time	Successful treatment of stroke				p - value	OR		
	Unsuccessful		Successful				Total	
	f	%	f	%			f	%
Not fast enough	16	84,2	3	15,8	19	100	.023	9,333
Fast	4	36,4	7	63,6	11	100		
Total	20	66,7	10	33,3	30	100		

The table above shows an analysis of less fast response time and successful stroke treatment. Based on this it was not successful and the results of the Chi-Square statistical test at the 95% level showed that there was a relationship between response time and successful treatment of on call stroke patients at PSC 119 Depok in 2023 (p-value 0.023 < 0.05). The odds ratio value = 9.333 (95% CI 2.316 - .248) shows that the OR value is > 1: meaning that the response time is less than 9x the risk of successful stroke treatment being unsuccessful.

4. Conclusion

Univariate Analysis

1. Age

The research results showed that the characteristics of the majority of respondents were aged 20-40 years. According to (Rochani, 2020), the age of 2-56 years is a productive age where the older a person is, the more knowledge or knowledge and skills they have. The knowledge and experience possessed by a nurse will make the nurse skilled in carrying out actions (Rochani, 2020).

According to Bertnus, 2019, factors that influence skills are knowledge and experience. The more mature a person is, the more their knowledge and experience will increase. According to Notoadmodjo, 2010, a person's knowledge is influenced by age, where the higher a person's age, the greater their knowledge and knowledge (Akhirul, 2020).

This research is in line with (Rumampuk, 2019) results showed that out of a total of 36 respondents (100%), 31 people were aged 21-31 years (86.1%) and 5 people were aged 32-42 years (13, 9%). (Rumampuk, 2019) Respondents' age was categorized based on the theory put forward by Wong, et al which was classified into early adulthood (21-34 years), middle adulthood (35-64 years) and late adulthood (> 65 years). In this study, it was discovered that the majority of respondents were in the age range 21-34, namely 28 people (Yanty Gurning, 2011).

In the opinion of researchers, age influences a person's grasping power and thinking patterns, the older they get, the more their grasping power and thinking patterns will develop so that the knowledge they gain will get better. In early adulthood, trained health workers can carry out emergency measures properly because adulthood is the time when a person reaches the peak of their intellectual abilities. Critical thinking abilities also increase regularly during adulthood.

2. Education

The research results show that the majority have D3 Nursing. It is hoped that higher education can produce professional nursing staff who are able to provide innovative methods for improving quality in a service or in nursing care (Soleh, 2022). Education can also develop a nurse's self-knowledge and hone the abilities of a nurse. Education can also help to deal with problems that often occur in society (Maatilu, 2019).

According to the researcher's opinion, when observing 119 Depok ambulance officers, the average nurse education was D3 nursing, D3 nursing education is vocational education which produces graduates who have attitudes, knowledge and skills in the field of nursing. D3 nursing graduates are usually equipped with a training certificate for emergency care courses. So D3 nursing graduates have met the criteria to become emergency nurses. The level of education is one of the factors that influences a person's perception and is more receptive to ideas and

technology. The higher the level of education, the better knowledge people will produce which will lead to a quality life.

3. Gender

The research results show that the majority are women. Based on theory, ambulance officers on average are more interested in men than women, because ambulance officers often do outdoor activities and handle field or prehospital emergencies more often with patient and gurney lifting activities. According to the opinion of Siagian (2004) in (Yanty Gurning, 2011), which states that male emergency room health workers are physically stronger than women but in terms of responsiveness in sorting patients there is no difference with female health workers (Tinggi, 2018).

The research is in line with the Rumapuk research, 2019 gender shows that of the total 36 respondents (100%) female is the largest gender with 27 people (75%) while male respondents are 9 people (25%). Nursing jobs are still more sought after by women than men because nursing is still identified with work that is suitable and in accordance with the nature of women who are more patient, gentle and caring (Bürger, 2018).

According to researchers' opinion, the majority of gender in the 119 PSC Depok is female. Because on average men as drivers and ambulance drivers are not health workers, but civilians. For male and female officers, they are different in terms of physicality and skills when carrying out their duties in the field. However, it is not only seen from gender, because women can also meet the requirements for speed in carrying out actions with the skills they have.

4. Length of work

The research results show that the majority of work experience is ≥ 5 years. Period or work experience is very important in providing excellent service to improve knowledge and skills, so that with a long period of work or work experience you can improve your skills and methods in working so that you can have a lot of experience with problems or emergency cases that occur which have a big influence on response time for officers or workers (Karokaro, 2020).

In the opinion of researchers, work period or length of work is the process of forming knowledge or skills about the methods of a job due to the involvement of the individual/officer in carrying out work tasks, so that with a long work period you can improve your techniques and methods at work so you can have a lot of experience related to problems. or emergency cases that occur greatly affect the response time of officers or workers.

5. Response Time

The research results show that the majority of response times > 30 minutes are not fast enough. The requirement for a response time of < 30 minutes for handling emergencies is the policy of the PSC 119 Depok Health Office. This provision applies from the start of the call to the assessment of the patient's condition; however, road conditions sometimes cannot be passed quickly due to traffic jams. Apart from that, the distance between the house and the standby ambulance is too far. The selection of units cannot be determined or mapped properly, due to unit limitations and the large number of activities, which disrupts response time when handling emergency cases.

Response time is the speed of patient treatment calculated from the time the patient arrives until treatment is carried out. Service response time can be calculated in minutes and is greatly influenced by various things, both regarding the number of personnel and other supporting components (Hania, 2020).

This research is in line with (Prahmawati, 2021)'s research, which showed that the average response time in handling emergencies was > 30 minutes or less responsive. Time is a very important factor in managing emergency situations (Prahmawati, 2021). According to (Maatilu, 2019), the success of response time is very dependent on the speed available and the quality of assistance provided to save lives or prevent disability from the scene of the incident, on the way to hospital assistance (Maatilu, 2019).

In the researcher's opinion, emergency patient care is a service that requires immediate service, namely fast, precise and careful to prevent death or disability. One of the indicators of service quality is response time. The results above, researchers clearly prove the importance of response time, apart from reducing the extent of damage to organs leading to disability, can also reduce the death rate.

Successful handling of on call patients. The results of the study showed that the majority of successful treatment of on call stroke patients was unsuccessful. In the research results, the average patient with a stroke emergency has exceeded the response time limit. After observing, many families did not understand how to detect stroke patients early, so they had already passed the golden time for stroke. Apart from disability, some have even been found dead at the patient's residence.

Based on the theory, the success of treating pre-hospital conditions in families of patients with stroke is greatly influenced by the family's level of knowledge in detecting a stroke, the family being able to identify risk factors for stroke, the location of the incident being far from health services, the assistance of a life partner as a support system, a history of stroke Previously, stroke comorbidities were related to stroke severity, and economic factors in financing treatment (Triwijayanti, 2023).

In the opinion of researchers in this study, the patient's family did not observe many slanted faces because they focused more on the patient's paralysis and speech difficulties rather than asking the patient to smile as a detection of facial asymmetry. The treatment of lying the patient with the head elevated is also less common due to the lack of information about early stroke management at home. Placing the head in a higher position in stroke patients will facilitate venous return from the brain to the heart.

Bivariate Analysis

The relationship between response time and successful treatment of on call stroke patients at PSC 119 Depok in 2023.

Based on the results of the Chi-Square statistical test at the 95% level, it shows that there is a relationship between response time and successful treatment of on call stroke patients at PSC 119 Depok in 2023 (p-value $0.023 < 0.05$). The odds ratio value = 9.333 (95% CI 2.316 - .248) shows that the OR value is > 1 : meaning that the response time is less than 9x the risk of successful stroke treatment being unsuccessful.

Based on the theory, one indicator of the success of medical treatment for emergency sufferers is the speed of providing adequate assistance to emergency sufferers, whether in routine daily situations or during a disaster. The success of response time is very dependent on the speed available and the quality of assistance provided to save lives or prevent disability from the scene of the incident, on the way to hospital assistance. Response time is the speed in treating patients, calculated from the time the patient arrives until treatment is carried out. The nurse's response time is delayed due to the unavailability of equipment or medicine, this will have an impact on the patient's life expectancy (Mitcel, 2022).

According to research by (Muhammad Rossy, 2020), a long response time is associated with an increased risk of death. According to the Regulation of the Minister of Health of the Republic of Indonesia Number 19 of 2016 concerning an integrated emergency management system, in the form of an emergency ambulance. As a Public Service Agency, it is hoped that it can improve its performance which has been running so far to be optimal and more accountable, which in turn can improve pre-hospital emergency services. One effort to overcome the increasing cases of medical emergencies and disasters (Muhammad Rossy, 2020).

In the opinion of researchers, a stroke emergency is one of the emergency cases that can be life-threatening and requires a fast response time to provide good treatment. If the golden time exceeds the maximum limit, death will occur within minutes. One indicator of the success of medical treatment for emergency patients is the speed of providing adequate assistance to emergency patients.

Conclusion

Based on the results of research on the relationship between response time and successful treatment of on call stroke patients at PSC 119 Depok in 2023, it can be concluded that the distribution results describe the characteristics of respondents at PSC 119 Depok in 2023 aged 20 years - 40 years (83.3%), D3 education in nursing (83.3%), female gender (63.3%), length of work ≥ 5 years (90%). The results of the distribution of the response time description of the successful treatment of on call stroke patients at PSC 119 Depok in 2023 are less fast (63.3%). The distribution results depicting the success of treating on call stroke patients at PSC 119 Depok in 2023 were unsuccessful (66.7%). There is a relationship between response time and successful treatment of on call stroke patients at PSC 119 Depok in 2023, p-value $0.023 < 0.05$ and OR = 9.333.

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