# THE EFFECT OF EDUCATION ON EARLY STROKE DETECTION BY USING ACT FAST METHOD TOWARD HIGH RISK STROKE PATIENTS' FAMILY SELF EFFICACY

**Mike Asmaria[1*], Hilma Yessi, Hidayati[2]**
Diploma of Nursing Study, Faculty of Sport Sciences Universitas Negeri Padang

*Corresponding author:Email: mikeasmaria@fik.unp.ac.id .

## ABSTRACT

Non-Communicable Diseases which are still experiencing an increase, one of which is stroke. Stroke can cause disability and death. According to WHO, 15 million people worldwide suffer a stroke every 5 million of them die and 5 million others experience permanent disability. To prevent this, one of them can be done by early detection of stroke. The F-A-S-T (facial, arm, speech, and time) method as a pre-hospital management can prevent disability and death rates from stroke. The purpose of this study was to determine the effect of stroke early detection education on family self-efficacy in high-risk stroke patients in the Air Santok Health Center, Pariaman City. The study used a quasi-experimental research design with pre and post research design with 34 respondents as sample. The results showed that there was a difference in the score for early detection of stroke by the FAST act method on self-efficacy (p = 0.000) between the treatment group and the control group after the educational intervention for early detection of stroke was carried out. In the study, it was found that there was an effect of providing education on early detection of stroke by the act FAST method on self efficacy. Of the 17 respondents who initially had low self-efficacy (29.41%), it increased to 70.59% to 100%. It is hoped that respondents can maintain self-efficacy by sharing knowledge with other family members about early detection of stroke with the FAST Act method and increasing awareness of stroke.

*Keywords : Stroke, Education, FAST, Self Efficacy*

## INTRODUCTION

Non-Communicable Diseases has increased compared to communicable diseases, one of which is stroke. [13] Stroke causes disability and death, so it requires fast treatment. The delay in the *pre-hospital* phase , among others, is due to underestimation and a lack of knowledge about the early signs of

e-ISSN 2745-7818

*Oral Presentation*
1ST SYEDZA SAINTIKA INTERNATIONAL CONFERENCE ON NURSING, MIDWIFERY, MEDICAL LABORATORY
TECHNOLOGY, PUBLIC HEALTH, AND HEALTH INFORMATION MANAGEMENT (SeSICNiMPH)

stroke. [6] First rescuers who do not understand the concept and application of early stroke detection will worsen the patient's condition. Asmaria's research, M (2019) found that most participants did not know how to properly detect early signs and symptoms of stroke.

The *FAST* method *(facial, arm, speech, and time)* as a pre-hospital management can prevent disability and death rates from stroke. Arianto's research (2016) showed that before being given the *Act FAST* method, 100% of respondents had less knowledge. After being given the *Act FAST* treatment method, 66% had good knowledge and 34% of respondents had sufficient knowledge about the signs and symptoms of stroke. Rizki's research (2019) shows the effect of pre-hospital education on *self-efficacy* .

According to the WHO report (2018), 15 million people worldwide suffer a stroke every 5 million of whom die and 5 million suffer permanent disabilities. Stroke is the leading cause of disability and the second leading cause of death in the world. In the United States nearly 800,000 strokes occur each year[2.] In Indonesia, the incidence of stroke was 10.9 per 1000 population in 2018, or reached 8.3 out of 1,000 population. Indonesia's national data states that stroke is the leading cause of death, namely 15.4%. [4] Stroke prevalence in West Sumatra is 8.1 out of 1000 populations. [18]

Pariaman City contributed stroke data for 155 patients with 32 new cases in 2018, while in 2019 it increased to 329 people with 40 new cases with a death rate of 4 people. Air Santok Health Center is one of the working areas of the Pariaman City Health Office which has experienced an increase in cases. In 2018 there were 3 new cases and 2019 increased to 14 cases. The cases of patients at risk of stroke also increased, namely Hypertension, Diabetes Mellitus, and Coronary Heart[5] . The results of a survey conducted on March 2, 2020 found that 3 people with hypertension and 1 diabetes mellitus did not know about stroke detection using the FAST act method in detecting the occurrence of a stroke .

Based on the above facts, the authors are interested in examining the " *The effect of education early detection of stroke by Act FAST method to sefl family efficacy in patients with High Risk Stroke On Air Santok Puskesmas Kota Pariaman Year 2020 "* .

## MATERIAL AND METHOD

This type of research is a *Quasi-* experimental research *pre test - post test with control group design.* The study was conducted by giving a *pre-test* to the control group and the intervention group, then the intervention group was given education about *early detection of stroke using the FAST Act Method* . then the control group and the intervention group were subjected to a *post test.* This research was conducted

from August to September 2020. The place used was the Air Santok Health Center in Pariaman City.

The sample in this study was 34 people, namely the families of patients who had risk factors for stroke in the working area of the Air Santok Health Center, Pariaman City: hypertension, diabetes mellitus, dyslipidemia, heart disease, smoking, alcohol, obesity, and use of oral contraceptives, willing to be respondents, able to communicate well.

## RESULTS

From the results of this study were taken from 34 samples that have been obtained by the *stratified random sampling* method. This research was conducted by collecting data on patients at high risk of stroke who live in Santok Village and Bungo Tanjung Village, the working area of Air Santok Health Center, Pariaman City. Furthermore, a random selection was carried out and continued by visiting him on August 10 -5 September 2020. This study used a guided questionnaire that had been previously validated for 30 respondents. Based on the results of the validation, there were two invalid questions that were not included in the questionnaire. Based on table 1, it is known that from 34 respondents, most of them in the treatment group were the age group 46-54 years, namely 9 respondents (52.94%). Whereas in the control group, most of the age> 55 years were 6 respondents ( 35, 29 %). Based on

gender, it is known that most of the 34 respondents are female as many as 14 respondents ( 82.35 %), this is the same as the control group. Based on the latest education, most of the education in the treatment group was primary hight school as many as 8 respondents (47.05%), while in the control group the majority was senior hight school as many as 8 people ( 47.05 %). Based on the risk factors for stroke, most of the respondents in the treatment group had a history of hypertension as many as 12 people (70.58%). Whereas in the control group most of them also had a history of hypertension as many as 10 people (58.82%).

**Table 2.**
***Distribution of* Pre-Test *Self-efficacy* of Treatment Group (n = 17)**

| Respondents | Pre | | Post | | p |
|---|---|---|---|---|---|
| | f | % | F | % | |
| High | 8 | 47.05 | 1 7 | 100 | 0,000 |
| Low | 9 | 52, 94 | 0 | 0 | |

Berdasarkan Table 2 note of 17 respondents treatment groups largely on the *pre-test* that has *self-efficacy* low that as many as 9 people (52.94%), while at the time of the *post test* all respondents had high *self-efficacy* , namely 17 people (100%).

e-ISSN 2745-7818

*Oral Presentation*
1ST SYEDZA SAINTIKA INTERNATIONAL CONFERENCE ON NURSING, MIDWIFERY, MEDICAL LABORATORY
TECHNOLOGY, PUBLIC HEALTH, AND HEALTH INFORMATION MANAGEMENT (SeSICNiMPH)

**Table 3.**
***Distribution of* Respondents
Pre-Test *Self-efficacy* Control Group
(n = 17)**

| Respondents | Pre | | Post | | p |
|---|---|---|---|---|---|
| | f | % | F | % | |
| High | 12 | 70.58 | 12 | 70.58 | 0,000 |
| Low | 5 | 29.41 | 5 | 29.41 | |

Based on Table 3 note of 17 respondents treatment groups largely on the *pre-test* that has *self* High *efficacy* , namely as many as 12 people (70.58%), while at the time of the *post test* all respondents still had the same percentage of *self-efficacy* , namely 70.58%

**Table 4.**
**Analysis of educational scores for early detection of stroke FAST *act* on *self-efficacy* in patients before ( *pre* ) and after ( *post* ) treatment**

| Variable | Group | Mean | z | p-value |
|---|---|---|---|---|
| *Educational score Stroke early detection the Act FAST method to self efficacy* | Ex. Treatment | | | |
| | *pre-test* | 8.50 | -3,517 | 0.000 |
| | *post test* | 0.00 | | |
| | Difference | 8.50 | | |
| | Ex. Control | | | |
| | *pre-test* | 11.05 | -1,611 | 0.107 |
| | *post test* | 6,07 | | |
| | Difference | 4.98 | | |

Based on table 4 the results of the analysis showed that there was a difference in the score for early detection of stroke by the FAST *act* method on *self-efficacy* (p = 0.000) between the treatment group and the control group after the educational intervention for early detection of stroke was carried out. In the study, the results showed that there was an effect of providing education on the early detection of stroke by the *act* FAST method on *self-efficacy* based on respondents' answers after education on the FAST *act* method to 17 respondents, 29.41% who originally had low *self-efficacy*, namely "Very Unsure" in detecting. early stroke independently and increased to "Very Sure" able to perform early detection of stroke independently, namely as much as 100%. Respondents' confidence increased significantly after receiving personal early detection of stroke health education using direct simulation methods. These results were obtained from the results of the *Wilcoxon Sign Range Test* analysis . z = -3,17 and *p value* = 0,000, which means *p value* <0.05 where H $_0$ is rejected, then H $_a$ is accepted. This illustrates that the *Act* FAST method of early stroke detection education is effective for the *self-efficacy of* respondents as families of patients who are at high risk of stroke.

e-ISSN 2745-7818

*Oral Presentation*
1ST SYEDZA SAINTIKA INTERNATIONAL CONFERENCE ON NURSING, MIDWIFERY, MEDICAL LABORATORY TECHNOLOGY, PUBLIC HEALTH, AND HEALTH INFORMATION MANAGEMENT (SeSICNiMPH)

## DISCUSSION

According to Bandura (1997) in Pudjiati (2018)*, Self-efficacy* is the *belief* or a person's confidence that he can master the situation and produce t indakan ( *outcome* ) is positive. According to the study Hu and Arau 2013, *Self-efficacy* as the main factors that influence in performing self-care and chronic disease management[20].

Based on table 4, it is explained that after a statistical test was carried out using the *Wilcoxon* test with a value of $\alpha$ = 0.05, the results of the significance value or *ρ-value were obtained* at the *self-efficacy* value of 0,000, which means that the *ρ-value* <$\alpha$ value (0.05) obtained is $H_0$ rejected. Thus it can be concluded that there is an effect of providing education on early detection of stroke on *self-efficacy* for respondents in early detection of stroke. Whereas in the control group there was no significance value or *ρ-value* at the *self-efficacy* value of 0.107, which means that the *ρ- value* value > $\alpha$ value (0.05) so that the hypothesis obtained is Ha accepted.

The results of the analysis showed that there was a difference in the score for early detection of stroke by the FAST *act* method on *self-efficacy* (p = 0.000) between the treatment group and the control group after the educational intervention for early detection of stroke was carried out. In the study, the results showed that there was an effect of providing education on the early detection of stroke by the *act* FAST method on *self-efficacy* based on respondents' answers after education on the FAST *act* method to 17 respondents, 29.41% who originally had low *self-efficacy*, namely "Very Unsure" in detecting. early stroke independently and increased to "Very Sure" able to perform early detection of stroke independently, namely as much as 100%. Respondents' confidence increased significantly after receiving personal early detection of stroke health education using direct simulation methods. These results were obtained from the results of the *Wilcoxon Sign Range Test* analysis. z = -3,17 and *p value* = 0,000, which means *p value* <0.05 where $H_{0\ is}$ rejected, then $H_{a\ is}$ accepted. This illustrates that the *Act* FAST method of early stroke detection education is effective for the *self-efficacy of* respondents as families of patients who are at high risk of stroke.

According to Bandura (1997) in Pudjiati (2018)*, Self-efficacy* is the *belief* or a person's confidence that he can master the situation and produce action ( *outcome* ) is positive. According to the study Hu and Arau 2013, *Self-efficacy* as the main factors that influence in performing self-care and chronic disease management[20].

According to Bandura (2009), people who have stroke risk factors must have an understanding of *pre-hospital* stroke

e-ISSN 2745-7818

*Oral Presentation*
**1ST SYEDZA SAINTIKA INTERNATIONAL CONFERENCE ON NURSING, MIDWIFERY, MEDICAL LABORATORY TECHNOLOGY, PUBLIC HEALTH, AND HEALTH INFORMATION MANAGEMENT (SeSICNiMPH)**

management [18] . *Pre-hospital* provides knowledge about how to do early detection of stroke and proper assistance before the patient is brought to the hospital. Patients who have had a stroke are confirmed by early detection of stroke, so that the family can determine the next help to give to the patient. Proper assistance will reduce the number of disabilities and deaths from stroke. To provide assistance to stroke patients, it is necessary to have confidence so that they can take actions that have an impact on the patient's life. To have this belief, first be able to know the symptoms of a stroke that occurs in a patient. This is in accordance with the theory of *self-efficacy* which states that the processes for the formation of *self-efficacy,* one of which is from cognitive or knowledge. In this research, which was carried out to improve *self-efficacy,* namely using simulation actions to personalize how to do early detection of stroke.

The results of this study are the same as Santosa, W., & Trisnain. A. (2019), entitled "The Effect of Health Education *Pre-Hospital* Stroke of the Knowledge and *Self Efficacy* Public in doing Measures the firts help *Pre-hospital* Stroke in Jongbiru village in the district of Kediri Gampengrejo". This research was conducted on 33 respondents with the results of the *p-value* = 0.000 so that the *p value* <0.05 and $H_0$ was rejected. The results of this study also show that there is

an influence from pre-hospital education, which mostly contains how to do early detection of stroke.

This is also in accordance with Ambarika's (2017) study entitled "The Effectiveness of *Pre-hospital Care* Simulation on *Self Efficacy for* the common people in providing first aid for traffic accident victims. The study illustrates that direct health education with *pre-hospital* simulations can affect the level of *self-efficacy* that the community has in providing first aid. This is also very visible in the respondent's *self-efficacy* , which has changed greatly after being given education by direct action to the respondent personally, so that respondents are more confident in conducting early detection independently.

The low *self-efficacy* of the treatment group before being given education was caused by several factors such as the respondent's education level. In this study, most of the treatment group had low education, namely still low, namely the Elementary School level, while in the control group most of the respondents already had a higher education level, namely the Hight school and the university level. Despite having a low level of education, the treatment group was able to increase *self-efficacy* after being given education about the early detection of stroke by the FAST *Act* method . This is probably due to the respondent's desire to observe, imitate and follow what the

e-ISSN 2745-7818

*Oral Presentation*
1ST SYEDZA SAINTIKA INTERNATIONAL CONFERENCE ON NURSING, MIDWIFERY, MEDICAL LABORATORY
TECHNOLOGY, PUBLIC HEALTH, AND HEALTH INFORMATION MANAGEMENT (SeSICNiMPH)

researchers directly demonstrated when giving the FAST Act early detection education. When researchers were given education, respondents were asked to do what the researchers did with the Act FAST ( *Facial movement, Arm movement, Speech, and Time to call)* method . [25]

When doing the FAST action by sampling *Facial droping, the* researcher gave an example by asking the respondent to order the researcher to smile (the researcher smiled with his lips tilted to one side). After that asked the respondent to ask the researcher to drink water from a glass (the researcher dripped the water he drank from a glass of showing an expression of difficulty drinking from a glass).

The action was taken during *Arm weakness,* namely the researcher asked the respondent to raise both hands up (at that time the researcher did not raise one hand perfectly), and the researcher asked the respondent to observe and conclude whether the patient had difficulty moving his arms. Respondents were also asked to ask whether the patient experienced numbness or a sensation of numbness even though he could still move his hands.

The action is performed during the *Speech difficulties* , meaning difficulty speaking. At this stage, the sufferer speaks incoherently and tends to be difficult to understand. At the time of this study the researcher asked the respondent to mention a few words, after which the respondent asked the researcher to repeat it again and the researcher would give an example as a patient who was having difficulty speaking and repeating the words of the respondent. From the response of the researcher, respondents were asked to conclude what signs and symptoms had happened to the patient.

*Time* is the time that is used as a guideline to respond if any of the things above occur. Time is very important, because a stroke damages about two million brain cells per minute. So, immediately call for medical help and take the sufferer to the hospital. According to Senapati (2015), referral transport for emergency equipment and transport preparation must be standardized according to emergency conditions. Emergency ambulance staff must have competence in prehospital assessment of stroke patients[20].

The action at the moment *time* in this study is to provide an example of using a cell phone to call an ambulance at the health center or health workers who can respond directly to send an ambulance and ask health workers to pick up patients who have shown signs of stroke symptoms. After the respondents were asked to repeat keopen actions taken by the researcher.

From the action of the FAST method given by the researcher, most of the respondents were able to repeat the method of early detection of stroke in patients who had a stroke. With the success of practicing this early detection method again, the respondents felt that they were very confident of being able to

e-ISSN 2745-7818

*Oral Presentation*
1ST SYEDZA SAINTIKA INTERNATIONAL CONFERENCE ON NURSING, MIDWIFERY, MEDICAL LABORATORY
TECHNOLOGY, PUBLIC HEALTH, AND HEALTH INFORMATION MANAGEMENT (SeSICNiMPH)

carry out early detection of stroke by the Act FAST method. This corresponds to Dwidiyanti (2015) stated that the confidence -confidence is something that can guide the independence of the patient to be increased. Everyone has a level of proficiency in k emandirian patient as start can not, willing to learn, often reminded, rarely reminded of and independently change or maintenance actions and the improvement of health generated by the health education that knowledge[20].

In addition to the above, the increase in respondent *self-efficacy* may also be obtained from previous experiences seen in other people in the neighborhood who have had a stroke. This is in accordance with Bandura's research in Mustaqim (2011) that the development of *self-efficacy* in each development phase requires individual competence. Although the stages of development that individuals go through are not the same, according to growth and development, age, experience and expansion of the environment.

With the increase in *self-efficacy* in respondents, it is expected that respondents can maintain self-efficacy by sharing knowledge with other family members about early detection of stroke with the Act FAST method and increasing awareness of stroke. With the increase in *self-efficacy* in respondents, it is expected that there will be an increase in the health status of the community in general and prevent disability and premature death of stroke sufferers.

## CONCLUSION

Based on the results of the study it can be concluded as follows: Most of the respondents in both the control treatment group and the treatment group indicated that there was a significant difference in *self-efficacy* scores on *self-efficacy* (p = 0.000) between the treatment group and the control group after the educational intervention was carried out on: early detection of stroke . Based on the above, the education on stroke detection system, the *Act* FAST method, is very effective in increasing *self-efficacy* for respondents. Health center are expected to be able to carry out health education about stroke early, and be able to carry out health education about early detection of stroke by the FAST Act method. For further research, it is expected to be able to provide stroke prevention measures for the community, especially those with high risk of stroke.

## REFERENCES

Ambarika, Rahmania. (2017). The Effectiveness of *Prehospital Care* Simulation on the *Self-efficacy* of the *Common* in Providing First Aid for Traffic Accident Victims. *Journal of Nursing* Vol. 8, No.1, P-ISSN: 2086-307, E-ISSN: 2443-0900.

American Diabetes Association. (2015). *Diagnosis & classification of Diabetes mellitus.* Care Diabetes Journal. 35 (1): 64-71

e-ISSN 2745-7818

*Oral Presentation*
1ST SYEDZA SAINTIKA INTERNATIONAL CONFERENCE ON NURSING, MIDWIFERY, MEDICAL LABORATORY
TECHNOLOGY, PUBLIC HEALTH, AND HEALTH INFORMATION MANAGEMENT (SeSICNiMPH)

Asmaria, M. (2019). *Stu in Phenomenology of Patient's Family Experience in Early Detection of Signs and Symptoms of Pre-Hospital Stroke at Pariaman Hospital.*

Bandura, A. (2009). *Cultivate Self-Efficacy for personal and organizational effectiveness. In EA Locke (ed) ,. Handbook of principles of organization behavior. (2 nd Ed.), (Pp.179-200)* . New York: Wiley.

EC, Indah. (2018). The Influence of Health Education on Stroke Prevention Behavior in Hypertension Patients in Pitu Village, Pitu District, Ngawi Regency. Repository.stikes.bhm.ac.id

Fassbender, K., *et al* (2013). *Streamlining Of Prehospital Stroke Management: The Golden Hour.lancet neurology journal* ; 12: 585–96.

Hinkle, JL. Guanci, MM. (2007) Acute Ischemic Stroke Review. J Neurosci Nurs .; 39 (5): 285-293, 310

Vincent-Onabajo and A. Adamu, (2014) " *The impact of post-stroke fatigue on quality of life related to stroke health in Nigerian survivors* ," *Journal of Stroke* , vol. 16, no. 3, p. 195–201,

GO Vincent-Onabajo, TK Hamzat, and MO Owolabi, (2015) "Consistent determinants of health-related quality of life in the first 12 months after stroke: a prospective study in Nigeria," *Topics in Stroke Rehabilitation* , vol. 22, no. 2, pp. 127–133,

Kemenkes (2014 *). Stroke control guidelines.* Jakarta. Ministry of Republic of Indonesia, Directorate of Non-communicable Disease Control

Khasanah. (2012). Beware of Various Degenerative Diseases Due to Diet, Publisher Laksana Jogjakarta

Ministry of Health of the Republic of Indonesia. (2011). *8 Out of 1000 Indonesians Affected by Stroke.*

National Center for Health Statistics. (2016). *Underlying cause of death 1999–2014* . Atlanta, GA: US Department of Health and Human Services, CDC, National Center for Health Statistics.

Notoadmodjo, (2012). Health Research Methods. Jakarta: Rineka Cipta

Nurafif, Amin H and Hardhi Kusuma. (2015). *Nursing Care Application Based on Medical Diagnosis and Nanda NIC NOC. Revised Edition Volume 3.* Yogyakarta: Mediaction Publishing.

Permana & Firmawati. (2016). *Health Education Against Knowledge About Stroke Prevention in Patients with Hypertension in the Work Area of Gamping 1 Public Health Center, Sleman* .

e-ISSN 2745-7818

*Oral Presentation*
**1ST SYEDZA SAINTIKA INTERNATIONAL CONFERENCE ON NURSING, MIDWIFERY, MEDICAL LABORATORY TECHNOLOGY, PUBLIC HEALTH, AND HEALTH INFORMATION MANAGEMENT (SeSICNiMPH)**

Prabawati, Yan Ari. (2014). Influence Health Education with Methods Lecture on Knowledge and Attitude of Housewives about Stroke Prevention in Kelurahan Pucangsawit Jebres . [ *Publication of Works Scientific* ]. Surakarta: Faculty of Science Muhammadiya University Health Surakarta.

Prestiana, Novita Dian Iva & Dewanti Purbandini. (2012). Relationship between *Self-Efficacy* & Work Stress with Work Saturation (Burnout) in IGD and ICU Nurses at Bekasi City Hospital. *Journal of the Soul, Vol. 5, No. 2*

Rikesdas (2018). Stroke Prevalence (Permil) Based on Diagnosis in Population Ages ≥ 15 Years by Province. RI Ministry of Health

Santosa, W., & Trisnain. A. (2019), entitled "The Effect of Health Education *Pre-Hospital* Stroke of the Knowledge and *Self Efficacy* M asyarakat in doing Measures P ertolongan *P re-hospi tal* Stroke in Jongbiru village in the district of Kediri Gampengrejo". Sugiyono. 2011. *S tatistics For Research.* Bandung: CV Alfabeta

Susanti Niman, 2017 *Health Promotion and Education* . Kramat Jati. East Jakarta. Trans Info Media

Tanto, Chris. et. Al, (2014). *Capita Selecta Medicine, 4th Edition.* Jakarta: Media Aesculapius

Wahyuningsih,Ratnasari. (2013). Influence Health Education about Stroke on Stroke Prevention Behavior in Hypertension Patients in the Kelurahan Needles Bayat Klaten District, Central Java. [ *Publication Manuscript* ]. Yogyakarta: Institute of Health Science 'Aisyiyah

WHO. 2018. *Global Health Estimates 2016: Deaths by Cause, Age, Sex, by Country and by Region, 2000-2016.* Geneva: World Health Organization

Yueniwati, Yuyun. (2014). *Early detection of stroke ischemia by vascular ultrasound examination and genetic variation.* Malang: UB-Press