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**UTILIZATION OF STROKE EARLY DETECTION CARD : STROKE RISK  
SCORE CARD IN DETECTING THE RISK OF STROKE IN THE  
ENVIRONMENT CITIZENS OF POLTEKKES JAKARTA I****Tarwoto, Sri Handayani, Uun Nurulhuda, Fenti Hasnani, Zeni Zaenal Mutaqin**

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fentihhasni112@gmail.com, zenizeni@poltekkesjakarta1.ac.id**Abstract**

Community service activities carried out within the residents of the Ministry of Health Polytechnic of Jakarta have a positive impact in detecting the risk of stroke for residents. Using a stroke early detection card, namely the Risk Stroke Scorecard, participants can be identified with mild stroke risk, a warning risk, and a high risk of stroke. Based on the results of examinations, measurements, and interviews of 150 participants, it is known that the condition of body weight is almost balanced between ideal body weight (49.3%) with overweight and obese (49.7%), most of them are non-smokers (72, 7 %), most have no family history of stroke (83.3 %), most of the blood pressure is abnormal ( 58 %), most of the heart rate is regular (96.7 %), the state of blood sugar when mostly average (58.7%), most of the cholesterol condition is not normal (60%). The analysis using the Stroke Risk Card showed that most of the participants had a warning stroke risk (48.7%).

**Keywords:** Early detection of stroke; Risk Stroke Scorecard; stroke risk factors

Received 20 December 2021, Revised 30 December 2021, Accepted 10 January 2022

**Introduction**

Stroke is one of the most common non-communicable diseases (NCD). Stroke is a disease caused by a blood vessel disorder in the brain that causes specific symptoms. According to the American Heart Association (Go et al., 2014), stroke is a disease with the third highest mortality rate after heart and cancer. Non-communicable diseases kill 41 million people every year, equivalent to 71% of all deaths globally. Cardiovascular disease accounts for the majority of NCD deaths, or 17.9 million people annually, followed by cancer (9.3 million), respiratory disease (4.1 million), and diabetes (1.5 million). These four disease groups account for more than 80% of premature NCD deaths (Organization, 2017).

Patients who have had a stroke may experience disability or have sequelae. This causes patients who have had a stroke will experience impaired activity and decreased quality of life. Clinical symptoms that hemorrhagic stroke patients often experience are headache, nausea, vomiting, seizures, and decreased consciousness. Prevent stroke by stopping smoking, drinking alcohol, consuming drugs, and increasing exercise (Setiawan, 2021). The level of physical and mental disability in post-stroke patients can affect the patient's quality of life (Hafdia, Arman, Alwi, & Asrina, 2018). The 2018 Rikesdas data shows the prevalence of stroke is 10.9 per mil; this means about ten stroke sufferers in 1000 people.

On the other hand, stroke can be prevented earlier by identifying the risk factors for

stroke. The risk factors for stroke can be identified into two factors that cannot be controlled/modified, such as age, gender, heredity, ethnicity, and factors that can be controlled or changed, such as weight factors, hyperglycemia, and blood pressure, hypercholesterolemia, activity, smoking habits (Boehme, Esenwa, & Elkind, 2017). Thus, various efforts are needed to control stroke risk factors.

One of the efforts made to detect it early is to screen for stroke risk using the Risk Stroke Scorecard that has been set by the National Stroke Association (Powers et al., 2018). There are eight risk factors for stroke in the card, namely hypertension, atrial fibrillation, cholesterol, diabetes mellitus, diet, activity, smoking, and family history of stroke. Each risk column has specific criteria, namely low-risk criteria if the low-risk criteria column is selected 6-8, warning risk is selected 4-6, and high-risk criteria if the high-risk column is selected more or equal to three points. Furthermore, participants can write down the value according to the column criteria for low risk, warning, and high risk.

This community service activity aims to identify stroke risk factors early for residents around the Poltekkes Kemenkes Jakarta 1 campus as part of the Poltekkes Kemenkes Jakarta 1 institution to contribute to the surrounding community to stay healthy and avoid stroke. The Risk Stroke Scorecard early detection card is used because it is simpler and easier to identify with predetermined criteria. Besides that, participants can quickly draw their conclusions.

#### **PROBLEMS, TARGETS, AND OUTCOMES**

The problems faced by residents around the Health Polytechnic of the Ministry of Health Jakarta I during the Covid-19 pandemic have not yet identified health problems, especially the risk of stroke in participants/individuals to detect stroke risk factors early.

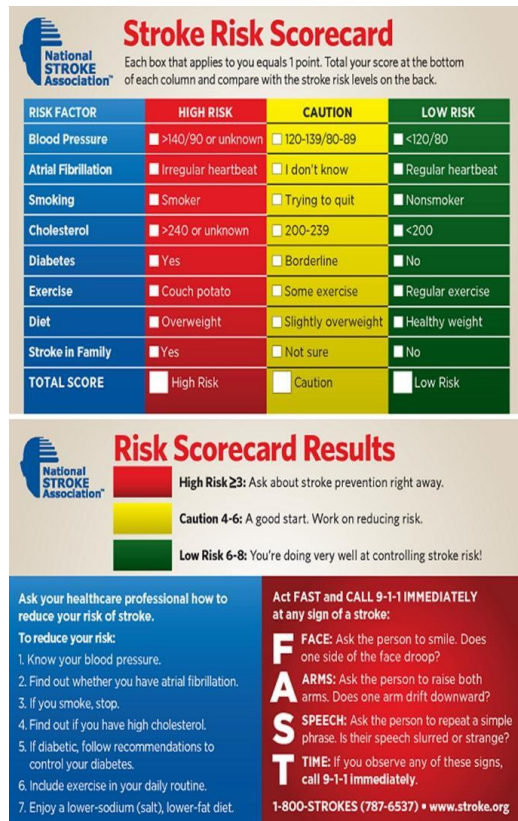
This community service activity aims to identify stroke risk factors in residents around the Health Polytechnic of the Ministry of

Health Jakarta I by using the Stroke Early Detection Card: Risk Stroke Scorecard, which can ultimately determine the degree of stroke risk of the individual concerned. This community service activity aims to identify stroke risk factors in residents around the Health Polytechnic of the Ministry of Health Jakarta I by using the Stroke Early Detection Card: Risk Stroke Scorecard, which can ultimately determine the degree of stroke risk of the individual concerned (Kalkonde, Alladi, Kaul, & Hachinski, 2018).

The main output of this community service activity is the use of early detection cards: Stroke Risk Scorecard. Is it effective enough to be used in identifying stroke risk factors and able to determine the degree of stroke in individuals?

#### **Method**

This community service activity is carried out in the area around the Poltekkes Kemenkes Jakarta I campus, namely on Jl. Wijayakusuma Raya No. 47 West Cilandak, South Jakarta. Before the implementation begins, the head of the community service executive and the team make notifications to residents for community service activities. The form of community service activities is the examination of stroke risk factors through examination and measurement and interviews related to stroke risk factors. The form of examination is checking blood pressure, blood sugar, cholesterol, uric acid. The form of measurement in community service activities is the measurement of weight, height, heart rate, and the form of the interview is related to smoking habits and daily activities. The examination, measurement, and interview results are then entered in the stroke early detection card: Stroke Risk Scorecard. Participants are considered to be at high risk of warning and are immediately presented with the results as part of the information that must be considered or followed up. The number of respondents in service activities was 150 participants.



**Figure 1**  
**Risk Scorecard Results**

**Results and Discussion**

Participants can communicate directly related to the results of measurements, examinations, and interviews of stroke risk. This community service activity showed positive results. The participants were very enthusiastic, and the considerable number. The results of examinations, measurements, and interviews are presented in the table below:

**Table 1**

**Characteristics of community service participants based on age, gender, weight, smoking habits, family history of stroke**

No	Variable	Frequency	%
1	Age :		
	1. < 30 year	33	22,0
	2. 30 – 59 year	110	73,3
	3. > 59 year	7	4,7

2	Gender :		
	1. Girls	65	43,3
	2. Boys	85	56,7
3	Weight :		
	1. Ideal	74	49,3
	2. Overweight	48	32,0
	3. Obesity	28	18,7
4	Smoking habit :		
	1. Non-smoker	109	72,7
	2. Trying to stop	5	3,3
	3. Smoker	36	24,0
5	Family history of stroke		
	1. None	125	83,3
	2. There	25	16,7

**Table 2**  
**Characteristics of community service participants based on checking blood pressure, heart rate, blood sugar, and cholesterol**

No	Variable	Frequency	%
1	Blood pressure :		
	1. < 120/80 mmHg	63	42,0
	2. 120 – 139 / 80-89 mmHg	55	36,7
	3. > 140/90 mmHg	32	21,3
2	Heart rate :		
	1. Regular	145	96,7
	2. Do not know	0	0
	3. Irregular	5	3,3
3	Blood sugar:		
	1. < 101 mg/dl	88	58,7
	2. 101 – 199 mg/dl	50	33,3
	3. > 200 mg/dl	12	8,0
4	Kolesterol :		
	1. < 200 mg/dl	60	40,0
	2. 200 – 239 mg/dl	61	40,7
	3. > 240 mg/dl	29	19,3

**Table 3**  
**Characteristics of community service participants based on level stroke risk**

Variable	Frequency	%
Stroke Risk Level :		
1. Low	63	42,0

2. Warning	73	48,7
3. Height	14	9,3
<u>TOTAL</u>	<u>150</u>	<u>100</u>

According to the World Stroke Organization (WSO, about 60% of strokes occur at <70 years, and 8% occur at <44 years. Stroke is more common in men (52%) than women (48%), whether it is ischemic stroke or hemorrhagic stroke. In addition, 72.1% of strokes are caused by metabolic problems (such as increased systolic blood pressure, body mass index, fasting plasma glucose (FPG), total cholesterol). In contrast, the rest are caused by atrial fibrillation and flutter (Lindsay et al., 2019).

The results of (Alagindera, 2016) on stroke patients at (Hasibuan, 2018) showed the results: as many as (43.4%) patients suffered from a stroke in the age group between 51-65 years and (58.6) female patients who suffered a stroke. The majority of patients (99%) had no family history of the disease, and (42.4) patients with ischemic stroke had the blood pressure of stage 2 hypertension. Based on a history of diabetes mellitus, 57.6% had no history of diabetes mellitus and 74.7%. Had no history of heart disease in ischemic patients. In addition, 60.6% of patients had low total cholesterol, and 76.8% had no smoking status.

The latest study by (Soto-Cámara et al., 2020) showed the characteristics of 436 patients included in the study. 55.70% of these patients were male. The mean age was 75.39 (SD  $\pm$  12.67) years. In addition, 19.27% (n = 84) of the patients were under 65 years of age, 18.58% (n = 81) were between 65 and 74 years of age. years, 37.84% (n = 165) were between 75 and 84 years, and 24.31% (n = 106) were 85 years or above. In addition, 404 patients were overweight/obese (64.91 %), and cardiovascular disease (49.77%), DM (25.00%) and active smoking habits (18.58%) (Soto-Cámara et al., 2020).

The results of the (Kesuma, 2019) of 65 ischemic stroke patients hospitalized at the

Klungkung Hospital, the most were in the age group 55 years - 64 years with a mean age of  $61.45 \pm 12,016$  years. Men dominated patients by gender with a ratio of ischemic stroke incidence between men and women of 2.4:1. The results of the assessment of the level of risk factors with the Stroke Risk Scorecard (SRS), 51 people (78.5%) had a high risk, nine people (13.8%) had a moderate risk, and five people (7.7%) had a low risk.

Research by (Wayunah & Saefulloh, 2017) of 73 people with stroke concluded that most of the respondents (55.3%) were male. Based on the risk factors for stroke, data was obtained (73.8.1%) of respondents had a family history of stroke, most (84.5%) of respondents had a history of hypertension.

Based on the results of research that researchers have carried out, it turns out that there are still differences in the results of stroke risk factors contained in the Stroke Risk Scorecard. However, most of the risk factors for stroke follow the Stroke Risk Scorecard, for example, blood pressure factors, heart disease factors, diabetes mellitus, age factors, and family history factors with stroke. The results of this community service illustrate that most of the participants have a stroke risk of 58%.

## Conclusion

The Risk Stroke Scorecard model for early stroke detection is easy to do and easy to understand so that every individual can fill it out quickly. The use of the Risk Stroke Scorecard model, the early detection card, is beneficial in identifying the level of stroke risk in individuals.

The early detection card model can be applied as a stroke control card so that individuals, especially those at risk of stroke, can control and control stroke risk factors that, in the end, do not occur. Based on the results of examinations, measurements, and interviews of 150 participants, it is known that the condition of body weight is almost balanced between ideal body weight (49.3%)

with overweight and obese (49.7%), most of them are non-smokers (72, 7 %), most have no family history of stroke (83.3 %), most of the blood pressure is abnormal ( 58 %), most of the heart rate is regular (96.7 %), the state of blood sugar when mostly average (58.7%), most of the cholesterol condition is not normal (60%). The analysis using the Stroke Risk card showed that most of the participants had a warning stroke risk (48.7%). The application of a stroke early detection card in identifying the risk of stroke in community service activities is very beneficial for the community in preventing early stroke attacks.

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