

The Effectiveness of the Siriraj Stroke Score (SSS) and National Institute of Health Stroke Scale (NIHSS) Assessment Methods in Determining the Actual Nursing Diagnosis of Stroke Patients in the Emergency Room

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ABSTRACT

Background: stroke is a disease of the brain in the form of focal nerve function disorders caused by disruption of blood circulation to the brain and causing symptoms in the form of neurological deficits. As the number of stroke patients increases, the assessment needs to focus on neurology and is an emergency.

Purpose: analyzing the effectiveness of the assessment method NSSS and NIHSS in determining the number of diagnoses actual nursing and the speed of time to determine the diagnosis of stroke patients in the Emergency Room.

Methods: this study used a pre-experimental approach. Theerty sample were used from a new patient with a medical diagnosis of stroke, while the sampling technique in this study was accidental sampling. Data collection on each sample was directly carried out using two assessment methods. The SSS assessment consists of 5 components and the NIHSS 11 components. Data analysis used sperm correlation and correlation coefficient interpretation test.

Results: the results of the sperm correlation test in the SSS and NIHSS methods both show $p=0.000$. The level of closeness were analyzed using the correlation coefficientthere is a very strong relationship is NIHSS to the length of the duration of determination ($r = 0.858$).

Conclusion: the SSS and NIHSS assessment methods are effective in establishing the diagnosisactual nursingin stroke patients in the Emergency Department, however, in terms of duration of assessment and determination of the number of diagnoses, SSS is more effective, while from the duration of determining nursing diagnoses, NIHSS is more effective.

Keywords:

Stroke; NIHSS and SSS methods; determination of actual nursing diagnosis.

BACKGROUND

Stroke is a disease of the brain in the form of focal nerve function disorders caused by disruption of blood circulation to the brain and causing symptoms in the form of neurological deficits. Brain damage or neurological deficits caused by stroke can be permanent and can even result in death if stroke treatment is given more than 3 - 4.5 hours (golden hours), therefore speed and accuracy are needed in the treatment and care of stroke patients (Mohtar MS, 2019). Stroke generally appears suddenly, progressively and rapidly (Sacco et al, 2013). According to the AHA (2018), a person can have a stroke every 40 seconds and can kill every 3 minutes 45 seconds.

Stroke is the 5th leading cause of death in the US, killing nearly 133,000 people annually. Stroke is the second most common cause of death (11.8%) especially in developing countries after ischemic heart disease (Feigin, et.al. 2017). According to Riskesdas 2017, the prevalence of stroke in Indonesia has increased from 7% to 10.9%. This is evidenced by the results of Riskesdas 2018 which was 10.9%, an increase compared to Riskesdas 2013 which was 7%. The prevalence of stroke based on Doctor's Diagnosis by province is the highest province of East Kalimantan with 14.7% and followed by the province of DI Yogyakarta which is 14.6% while in the province of South Kalimantan in 2018 it was 12.7% per mil at the age of >15 years with the age group over 75 years old 50.2%, male sex more likely 11.0%, and residences in urban areas are 12.6% higher than those in rural areas. (Riskesdas, 2018).

Along with the increasing number of stroke patients, it is necessary to study neurology in a comprehensive and emergency manner. This is because the scope of the assessment is more specific to the nervous system with a short time and can identify situations that involve saving the patient's life. (Smeltzer & Bare, 2008). Nurses as health practitioners where assessment is the main step in carrying out nursing care to determine the actual nursing diagnosis that occurs in stroke patients through several scores, but with many assessment models (Mohtar MS, 2021). Stroke score which has its own characteristics so that nurses are still unsure which stroke score is more effective in establishing a nursing diagnosis, one of them is the Siriraj Stroke Score (SSS) and the National of Institutes Health Stroke Scale (NIHSS) which are a tool for assessing neurological deficits related to stroke and are designed with tools that are easy, valid and reliable in evaluating stroke patients (Lyden, 2018). Based on this, it encourages researchers to examine the effectiveness of the SSS and NIHSS assessment methods in determining actual nursing diagnoses in stroke patients.

OBJECTIVE

Analyzing the effectiveness of the assessment method SSS and NIHSS in determining the number of diagnoses actual nursing and the speed of time to determine the diagnosis of stroke patients in the Emergency Room

METHODS

This study uses a pre-experimental approach (the one shot case study or posttest only design) with the aim of researchers wanting to know the effect of the treatment given to the group. Theerthy sample were used from a new patient with a medical diagnosis of stroke, while the sampling technique in this study was accidental sampling. Data collection

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on each sample was directly carried out using two assessment methods. The SSS assessment consists of 5 components and the NIHSS 11 components. Data analysis used sperm correlation test on SSS and NIHSS method variables. Meanwhile, to determine the level of closeness of the SSS and NIHSS methods, the researchers used the correlation coefficient interpretation test.

RESULTS

Table 1 illustrates that neurological deficits that occur when measured using SSS with the highest score of 53.33% in the Non-Hemorrhagic Stroke category, while the NIHSS with the highest score of 43.3% in the moderate category. This shows that the patient comes to the ER already in a state of damage to his neurological function. The duration of the SSS assessment took <10 minutes (100%), while the NIHSS was >10 minutes and even >20 minutes (96.7%). This shows that the shorter the points studied (SSS) the faster the assessment time required, and vice versa the longer the points studied (NIHSS) the longer the assessment time required.

The nursing diagnoses produced by the NIHSS and SSS are almost the same and the names vary, the most common diagnoses are Decreased intracranial adaptive capacity related to cerebral edema (93.3%). This shows that the average patient with a positive stroke will experience signs and symptoms of increased intracranial pressure so that the diagnosis is certain to be enforced. The highest number of diagnoses resulted from the highest SSS assessment were 2 diagnoses (80%), while the highest number of diagnoses resulted from the NIHSS assessment were 5 diagnoses (86.7%). The duration of determining the diagnosis using SSS both takes not > 40 minutes but each minute is different (< 10 minutes), while the NIHSS both take not > 40 minutes but each minute is different (> 10 minutes).

Table.1 Distribution of assessment scores, duration of assessment, names and number of diagnoses assigned and duration of diagnosis.

No.	Variable	n SSS	%	n NIHSS	%
1.	Assessment Score				
	SSS			NIHSS	
	<1 (SNH)	16	53.3	8	26.7
	>1 (SH)	14	46.7	13	43.3
		0	0	8	27.7
		0	0	1	3.3
	Total	30	100	30	100
2.	Study Duration				
	10 – 20 minutes (fast)	30	100	29	96.7
	>20 minutes (slow)	0	0	1	3.3
	Total	30	100	30	100
3.	Defined diagnosis				
	Decreased intracranial adaptive capacity related to cerebral edema	28	93.3	28	93.3
	Ineffective breathing pattern related to neuromascular disorders	0	0	1	3.3
	Impaired physical mobility related to neuromascular disorders	2	6.7	28	93.3

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Variable	n SSS	%	n NIHSS	%
Acute pain related to physiological (ischemic) injuring agent	14	46.7	0	0
Nausea related to increased intracranial pressure	4	13.3	0	0
Impaired spontaneous circulation related to intracranial haemorrhage & decreased ventricular function	0	0	2	6.7
Hypovolemia related to increased intracranial pressure	8	26.7	0	0
Nutritional deficiency related to neurological deficit	1	3.3	1	3.3
Total	57	100	110	100
4. Number of diagnoses set				
0 – 2 Actual diagnosis	24	80	4	13.3
3 – 5 Actual Diagnosis	6	20	26	86.7
6 – 10 Actual Diagnosis	0	0	0	0
11 – 17 Actual diagnosis	0	0	0	0
Total	30	100	30	100
5. Duration of diagnosis determination				
15 – 40 minutes (fast)	30	100	30	100
>40 minutes (slow)	0	0	0	0
Total	30	100	30	100

In table 2 The results show an assessment score of at least 0.5 (SSS) and a maximum of 28 (NIHSS), the longest duration of the assessment is 3 minutes at the fastest (SSS) and the latest 25 minutes (NIHSS), the number of diagnoses produced is at least 1 (SSS) and a maximum of 5 (NIHSS), the longest duration of determination is 5 minutes (SSS) and a maximum of 35 minutes (NIHSS).

Table 2. Distribution of Research Averages

No	Variable	N	Min	Max	mean	SD	95% CI
1	SSS Group Assessment Score	30	0.5	4.0	1.217	1.1721	0.779 – 1.654
2	NIHSS . Cohort Assessment Score	30	4	28	14.10	7,439	11.32 – 16.88
3	Duration of SSS group assessment (minutes)	30	3	7	5.00	1.174	4.56 – 5.44
4	NIHSS group study duration (minutes)	30	10	25	11.50	3,749	10.10 – 12.90
5	Number of diagnoses assigned to the group (SSS)	30	1	4	1.90	0.803	1.60 – 2.20
6	Number of diagnoses assigned to the NIHSS . group	30	1	5	3.60	1.037	3.21 – 3.99
7	Long Duration SSS group assignment	30	5	12	9.50	2,177	8.69 – 10.31
8	Length of Assignment NIHSS group	30	20	35	23.00	4,472	21.33 – 24.67

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In table 3 it is illustrated that the results of the analysis using the spearman correlation test on the NIHSS and SSS method variables on average showed $p = 0.000 < \alpha (0.05)$, so it can be concluded that there are several significant relationships between the use of the NIHSS assessment method and the length of the study duration, the number of diagnoses assigned and the duration of the determination. Table 3 also illustrates the results of the closeness level analyzed using the interpretation of the correlation coefficient that there is a relationship with the strength of a very strong relationship is the NIHSS method on the length of the determination duration ($r = 0.858$). There is a relationship with the strength of the relationship that is as strong as the SSS and NIHSS methods on the length of the study duration ($r=0.653$), but the SSS value is higher ($r=0.696$), while the duration of the SSS determination ($r=0.696$). There is a relationship with sufficient strength of the relationship is the SSS method itself to the number of diagnoses specified ($r = 0.495$). This is reinforced that the SSS assessment is simpler, simpler and explores the patient's problems is not as complete as the NIHSS so that the resulting diagnosis is not much unless the patient is multifactorial or complicated. There is no relationship, so the strength of the relationship becomes meaningless, this occurs in the NIHSS method for the number of diagnoses specified ($r=-0.027$). This shows that although rationally, with a complete assessment, the resulting diagnoses are certainly many, but they are unrelated and ineffective for the reasons because,

Table 3. Correlation of SSS and NIHSS Scores on Time of Actual Nursing Diagnosis

No.	Independent Variable	Dependent variable	<i>p</i> -value	coef. Correlation*	Information
1		Study Duration	0.000	0.696	There is a relationship with a strong relationship strength
2	SSS method	Number of Assigned Diagnosis	0.005	0.495	There is a relationship with sufficient relationship strength
3		Length of Assignment	0.000	0.696	There is a relationship with a strong relationship strength
1		Study Duration	0.000	0.653	There is a relationship with a strong relationship strength
2	NIHSS method	Number of Assigned Diagnosis	0.887	-0.027	There is no relationship, so the strength of the relationship becomes meaningless
3		Length of Assignment	0.000	0.858	There is a relationship with a very strong relationship strength

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DISCUSSION

SSS and NIHSS methods

The results of the initial analysis (table 1) showed that the neurological deficits that occurred in patients when measured using the SSS obtained the highest score with a score of 4 (53.33%) in the Non-Hemorrhagic Stroke category, while when measured using the NIHSS the highest score was obtained with a score of 28 (43.3%) with moderate category. The results of the analysis also obtained the lowest score of SSS with a score of 0.5 (46.7%) in the Hemorrhagic Stroke category and NIHSS with a score of 4 (3.3%) in the 28 category, which indicates the condition of the patient having a severe stroke with decreased consciousness. In accordance with the theory that in severe stroke patients the interpretation value of SSS is if the SSS score > 1 means the patient has a hemorrhagic stroke (bleeding) and if the SSS score is < -1 then the patient has an ischemic stroke. If it is between -1 and 1 , then the result is equivocal and requires a CT-Scan intervention as soon as possible, hemorrhagic (bleeding), and if the SSS score is < -1 , the patient has an ischemic stroke. If the score is between -1 and 1 , the result is equivocal and requires a CT-Scan examination intervention as soon as possible (Pavan, Madi, Achappa & Unnikrishnan, 2012). As for NIHSS above 22, there is a high risk of bleeding and poor final results that will result in neurological disorders, such as decreased consciousness, somnolence, coma, hemianopsia, hemiparesis, hemiplegia, ataxia, dysarthria, dysphagia, paresthesia, apasia, memory and intellectual and emotional loss. unstable. (Black & Hawks, 2005; Smeltzer & Bare, 2008).

Siriraj Stroke Score (SSS) is a scoring system for assessing stroke, hemorrhagic and ischemic types that do not require special examinations such as CT-Scan or MRI (McGee, 2012; Adams, Zoppo, & Kummer, 2007). Hemodynamic status in stroke patients was measured by the National Institutes of Health Stroke Scale (NIHSS) (Black & Hawks, 2005). The NIHSS is an assessment carried out on stroke patients to assess the progress of stroke patient care outcomes which consists of 11 components. The NIHSS is widely used in stroke care centers to assess the severity of a patient's stroke.

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Duration of SSS and NIHSS Assessment

The results of the initial analysis (table 1) showed that the length of time the assessment was carried out using SSS took < 10 minutes (100%), whereas with NIHSS > 10 minutes even > 20 minutes (96.7%). Classification of the speed level of stroke assessment according to the ASA guideline (2018), namely, it is said to be fast if the assessment process takes 10-20 minutes and is said to be slow if the speed of stroke assessment takes > 20 minutes. The classification of the speed of diagnosis according to the ASA guidelines (2018), namely, is said to be fast if the determination of nursing diagnoses takes 15-40 minutes and is said to be slow if the determination of nursing diagnoses takes > 40 minutes.

One of the advantages of SSS is that nurses who conduct initial assessments using this assessment system do not need a long time because nurses only conduct assessments and then assess with interpretations that are very easy to memorize so they do not require special training to use this SSS measuring tool (McGee, 2012; Adams, 2012). , Zoppo, & Kummer, 2007; Nyodu, Singh, Singh, Kenny, Sinhh, & Singh, 2013). Meanwhile, with a CT scan the patient must get this tool and it requires time and transportation if the location

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of the hospital is far from the facility (Kolapo, Ogun, Daresi, Osalusi, & Odusote, 2006; Nyodu, Singh, Singh, Kenny, Singh, & Singh, 2013 ; Pavan, Madi, Achappa, & Unnikrishnan, 2012; Salawu, Umar, & Danburam, 2009). Kogan (2020) in his journal states that the total NIHSS score in stroke patients is an assessment of the severity of stroke experienced by the patient. The NIHSS is widely used because it has several advantages or advantages including being able to be used to periodically assess neurological deficits in acute stroke conditions, while the shortcomings or limitations of this instrument are that the NIHSS assessment tends to pay more attention to disorders of the limbs and speech, while other components are less concerned. for example in nerve damage in the head (cranial).

Actual Nursing Diagnosis of Stroke Patients

The results of the initial analysis (table 1) nursing diagnoses from the NIHSS and SSS were almost the same, the most common diagnoses were Decreased intracranial adaptive capacity related to cerebral edema (93.3%). Consistent with the reference that decreased intracranial adaptive capacity is a condition in which an individual experiences or is at risk of experiencing a decrease in nutrition and respiration in cerebral tissue due to a decrease in blood supply in cerebral tissue (Carpenito, 2007: 493). The authors prioritize this diagnosis in the second place, while according to Maslow's Hierarchy in the first order, because cerebral perfusion is related to brain tissue oxygenation. Oxygen is a very primary requirement and absolutely must be met to maintain biological homeostasis and survival for humans. If this diagnosis is not treated immediately, there is a risk of experiencing a decrease in verbal, motor and sensory responses, and changes in vital signs (Hidayat, 2004: 119).

Furthermore, the nursing diagnoses produced by the NIHSS and SSS are almost the same. The most common diagnoses are Impaired physical mobility related to neuromuscular disorders (93.3%). In accordance with the reference that impaired physical mobility is a limitation in physical movement of certain body parts in an extremity (Rosenberg and Smith, 2005: 131). This diagnosis is prioritized by the authors as the second order, while according to Maslow's Hierarchy in the first order, namely physiological needs which include the need for activity and mobilization. If this diagnosis is not treated immediately, there will be a risk of contractures and dicubitus (Mohtar MS, 2022).

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Furthermore, the nursing diagnoses produced from the NIHSS and SSS are almost the same. The most common diagnoses are verbal communication impairment related to brain damage (86.7%). The data is in accordance with the theory according to (Amin, 2015), the symptoms that arise due to stroke are experiencing weakness and paralysis, sudden loss of sense of sensitivity, slurred and slurred speech, visual disturbances, a slanted or asymmetrical mouth when grinning, memory impairment, severe headache, vertigo, decreased consciousness and impaired brain function.

Number of Actual Nursing Diagnoses of Stroke Patients

The results of the initial analysis (tables 1 and 2) The highest number of diagnoses resulted from the highest SSS assessment was 4 diagnoses (80%), while the highest NIHSS was 5 diagnoses (86.7%). The number of actual nursing diagnoses in stroke patients is closely related to the results of the assessment using the SSS and NIHSS

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methods. The higher the SSS and NIHSS values, the more actual diagnoses are obtained, but the more points studied, the more diagnoses obtained, in this case, NIHSS is more than SSS. This shows that although rationally, with a complete assessment, the resulting diagnoses are certainly many, but they are unrelated and ineffective for the reasons because, even though many diagnoses are produced, it is hoped that in the speed range the duration of their determination can exceed the simple assessment of SSS. This can be seen in the previous analysis that there is no relationship, so that the strength of the relationship becomes meaningless, namely the NIHSS value on the number of actual nursing diagnoses seen at $r = -0.027$, while the SSS value on the number of actual nursing diagnoses is seen at $r = 0.495$. This can be seen from the previous analysis, namely, patients with decreased consciousness will have NIHSS values between 24 - 28 and SSS values > 1 (SH) each will have 2-5 actual nursing diagnoses. Meanwhile, NIHSS values between 6-14 (moderate) and SSS values < 1 (SNH) will each have 1-3 actual nursing diagnoses. All assessments of the SSS and NIHSS components are fully filled with maximum values so that the actual nursing diagnoses obtained are at most 5 diagnoses. Meanwhile, in composmentis conditions, all assessments of the SSS and NIHSS components are fully filled but the values are not maximal so that the scores obtained are 1-2 diagnoses. According to Hickey (2003), nursing problems that will arise in stroke patients with decreased consciousness are; Impaired breathing patterns, perceptual or sensory changes (vision, touch, aesthetics), impaired verbal communication, impaired physical mobility, impaired urinary elimination patterns, impaired thought processes and inability to care for oneself. Meanwhile, in composmentis conditions, all assessments of the SSS and NIHSS components are fully filled but the values are not maximal so that the scores obtained are 1-2 diagnoses. According to Hickey (2003), nursing problems that will arise in stroke patients with decreased consciousness are; Impaired breathing patterns, perceptual or sensory changes (vision, touch, aesthetics), impaired verbal communication, impaired physical mobility, impaired urinary elimination patterns, impaired thought processes and inability to care for oneself. Meanwhile, in composmentis conditions, all assessments of the SSS and NIHSS components are fully filled but the values are not maximal so that the scores obtained are 1-2 diagnoses. According to Hickey (2003), nursing problems that will arise in stroke patients with decreased consciousness are; Impaired breathing patterns, perceptual or sensory changes (vision, touch, aesthetics), impaired verbal communication, impaired physical mobility, impaired urinary elimination patterns, impaired thought processes and inability to care for oneself.

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Duration of Actual Nursing Diagnosis for Stroke Patients

The results of the initial analysis (tables 1 and 2) The duration of establishing a diagnosis using SSS both takes not > 40 minutes but every minute is different (< 10 minutes), while the NIHSS both takes not > 40 minutes but every minute is different (> 10 minutes). The speed of time for determining nursing diagnoses should ideally not exceed the golden time of help when you arrive at the ER. According to the ASA (American Stroke Association) 2018 standard, the golden period for stroke patients is 3 – 4.5 hours. Ideally pre-hospital to intra-hospital (emergency room) the first 20 minutes have received a Door to CT (CT Scan) and the first 60 minutes after the attack have received a Door to Needle (therapeutic). This means that 20 minutes in the ER, direct assessment & CT Scan and 40 minutes or so on, allotment of time to determine diagnosis and provide intervention, be it surgery or treatment in the treatment room (ICU or inpatient). Valid nursing diagnoses

can help solve patient problems, but the process of identifying appropriate nursing diagnoses is very difficult because of the complex and unique human response. Valid nursing diagnoses are very important to reduce the risk of misdiagnosing. In addition, the number of nursing diagnoses is also one of the factors that make it difficult for nurses to determine nursing diagnoses. The demands of nursing diagnoses including bio-psycho-socio-spiritual are also rarely fulfilled because the process of time used is quite long. Valid nursing diagnoses can help solve patient problems, but the process of identifying appropriate nursing diagnoses is very difficult because of the complex and unique human response. Valid nursing diagnoses are very important to reduce the risk of misdiagnosing. In addition, the number of nursing diagnoses is also one of the factors that make it difficult for nurses to determine nursing diagnoses. The demands of nursing diagnoses including bio-psycho-socio-spiritual are also rarely fulfilled because the process of time used is quite long. Valid nursing diagnoses are very important to reduce the risk of misdiagnosing. In addition, the number of nursing diagnoses is also one of the factors that make it difficult for nurses to determine nursing diagnoses. The demands of nursing diagnoses including bio-psycho-socio-spiritual are also rarely fulfilled because the process of time used is quite long. Valid nursing diagnoses are very important to reduce the risk of misdiagnosing. In addition, the number of nursing diagnoses is also one of the factors that make it difficult for nurses to determine nursing diagnoses. The demands of nursing diagnoses including bio-psycho-socio-spiritual are also rarely fulfilled because the process of time used is quite long. Valid nursing diagnoses are very important to reduce the risk of misdiagnosing. In addition, the number of nursing diagnoses is also one of the factors that make it difficult for nurses to determine nursing diagnoses. The demands of nursing diagnoses including bio-psycho-socio-spiritual are also rarely fulfilled because the process of time used is quite long.

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The Effectiveness of the Siriraj Stroke Score (SSS) and National Institutes Health Stroke Scale (NIHSS) Assessment Methods

In table 3 it is illustrated that the results of the analysis using the sperm correlation test on the NIHSS and SSS method variables on average showed $p = 0.000 < \alpha (0.05)$, so it can be concluded that there are several significant relationships between the use of the NIHSS assessment method and the length of the study duration, the number of diagnoses assigned and the duration of the determination. However, based on the results of the closeness level which was analyzed using the interpretation of the correlation coefficient, it was found that there was a relationship with the strength of the relationship that was as strong as the SSS and NIHSS methods on the length of the study duration ($r=0.653$) but a higher level of strength in the SSS assessment ($r=0.696$). It can be concluded that the duration of the assessment is more effective than the NIHSS SSS.

Based on the theory that reinforces that Siriraj Stroke Score is a method of assessing neurological deficits to assess the type of stroke, besides that it can also be useful for assessing patient's neurological deficits, it can also be useful for assessing early clinical diagnosis in determining the type of stroke based on its cause. The advantages of Siriraj Stroke Score for health workers, especially nurses, do not take a long time to use because they only carry out assessments and then interpret them which are quite easy to memorize.

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The drawback is that it allows getting a score range of -1 and 1 which obscures the results so that it requires an immediate CT-Scan examination.

The NIHSS assessment uses several assessment components, namely level of consciousness, patient response to questions, ability to follow commands, best gaze, visual ability, facial paralysis, assessment of right and left arm motor skills, assessment of right and left leg motor skills, extremity ataxia, sensory, language, dysarthria and attention. The number of scores from the NIHSS is an illustration of the severity of the neurological deficit, the higher the degree of neurological deficit in stroke patients. This is in accordance with Kogan (2020) in his journal stating that the number of NIHSS scores in stroke patients is an assessment of the severity of stroke experienced by patients.

The initial analysis (table 3) shows that from the results of the spearman correlation test on the SSS method for the number of nursing diagnoses $p = 0.000$ with a correlation coefficient value ($r = 0.495$). So it can be concluded that there is a significant relationship with sufficient strength of the relationship between the use of SSS assessment and the number of actual nursing diagnoses. This is reinforced that the SSS assessment is simpler, simpler, focuses on neurological problems, takes maximum time and explores patient problems, is not as complete as the NIHSS so that the resulting diagnosis is not much unless the patient is multifactorial or complicated. Saudin research (2020) states that the Siriraj Score has an accuracy of up to 90% while the accuracy of the Gajah Mada Algorithm only reaches 60%. Pujiastuti (2017) suggested that the accuracy of siriraj stroke score is between 80-91% and is good for assessing the type of stroke. Research conducted by Li (2020) obtained a predictive value in predicting stroke patients on the NIHSS of 85.9% and GCS of 81.9%. Saudin's research (2018) states that there is no difference between the Siriraj Score and the NIHSS assessment and both are stated to be applicable in hospitals that do not yet have a CT scan tool. NIHSS is widely used because it has several advantages or advantages including being able to be used to periodically assess neurological deficits in acute stroke conditions, while the shortcomings or limitations of this instrument are that the NIHSS assessment tends to pay more attention to disorders of the limbs and speech,

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The initial analysis (table 3) shows that from the results of the spearman correlation test on the SSS method variable for the duration of the determination of $p = 0.000$ with a correlation coefficient value ($r = 0.696$). So it can be concluded that there is a strong correlation between the use of SSS assessment and the duration of diagnosis. While the NIHSS method variable for the number of nursing diagnoses is $p = 0.000$ with a correlation coefficient value (0.858), so it can be concluded that there is a very strong relationship between the use of the NIHSS assessment and the duration of the diagnosis. This shows that although the assessment point is long, the duration of the diagnosis is the same as the SSS, in other words, in terms of the duration of the diagnosis, it is more effective to use the NIHSS than the SSS. This is reinforced by that the speed of time for determining nursing diagnoses should ideally not exceed the golden time of help when they arrive at the ER. According to the ASA (American Stroke Association) 2018 standard, the golden period for stroke patients is 3 – 4.5 hours. Ideally pre-hospital to intra-hospital (emergency room) the first 20 minutes have received a Door to CT (CT Scan) and the first 60 minutes after the attack have received a Door to Needle

(therapeutic). This means that 20 minutes in the ER, direct assessment & CT Scan and 40 minutes or so on, allotment of time to determine diagnosis and provide intervention, be it surgery or treatment in the treatment room (ICU or inpatient). According to the ASA (American Stroke Association) 2018 standard, the golden period for stroke patients is 3 – 4.5 hours. Ideally pre-hospital to intra-hospital (emergency room) the first 20 minutes have received a Door to CT (CT Scan) and the first 60 minutes after the attack have received a Door to Needle (therapeutic). This means that 20 minutes in the ER, direct assessment & CT Scan and 40 minutes or so on, allotment of time to determine diagnosis and provide intervention, be it surgery or treatment in the treatment room (ICU or inpatient). According to the ASA (American Stroke Association) 2018 standard, the golden period for stroke patients is 3 – 4.5 hours. Ideally pre-hospital to intra-hospital (emergency room) the first 20 minutes have received a Door to CT (CT Scan) and the first 60 minutes after the attack have received a Door to Needle (therapeutic). This means that 20 minutes in the ER, direct assessment & CT Scan and 40 minutes or so on, allotment of time to determine diagnosis and provide intervention, be it surgery or treatment in the treatment room (ICU or inpatient).

Based on the overall analysis of the variables, in terms of the duration of the study ($r=0.696$) and the determination of the number of nursing diagnoses ($r=0.495$) it was more effective to use the SSS, because the SSS assessment was simpler and simpler than the NIHSS so that the duration of the assessment was faster. Meanwhile, the number of nursing diagnoses generated from the SSS is more effective because it focuses on neurological problems and the time required according to the ASA guidelines. Meanwhile, from the duration of determining the actual nursing diagnosis ($r = 0.858$) the NIHSS is more effective because even though the assessment point is long, the duration of the diagnosis is able to match the speed of the SSS time span.

CONCLUSION

The SSS and NIHSS assessment methods are effective in establishing the diagnosis actual nursing in stroke patients in the In the Emergency Department, however, the duration of the assessment and the determination of the number of diagnoses is more effective, while the NIHSS is more effective from the duration of the determination of nursing diagnoses.

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