

Original Research

Nursing Diagnoses in Acute Stroke Patients at the Emergency Department



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Article Info	Abstract
Article history: Received: 6 August 2024 Accepted: 18 October 2024	<p>Introduction: Stroke is the second leading cause of death and the third leading cause of disability worldwide. Nurses play a crucial role in providing care for stroke patients. Accurate and precise nursing diagnoses serves as the foundation for providing appropriate nursing care. This study aims to identify nursing diagnoses in acute stroke patients based on the Indonesian Nursing Diagnosis Standards.</p> <p>Methods: This study utilized a descriptive research design. The research sample consisted of 471 patients (205 hemorrhagic strokes; 266 ischemic strokes) selected through random sampling techniques. The data were collected from the medical records of stroke patients treated at the Emergency Department of Muhammadiyah Lamongan Hospital from January to December 2023. The research instrument was a summary sheet, and data were analyzed descriptively.</p> <p>Results: The results of this study indicate that common signs and symptoms in hemorrhagic stroke included headache, decreased level of consciousness, and increased blood pressure. The most frequent nursing diagnoses observed were decreased intracranial adaptive capacity, impaired physical mobility, and verbal communication impairment. Similarly, common signs and symptoms in ischemic stroke include difficulty moving extremities, decreased range of motion (ROM), and decreased muscle strength. The most frequent nursing diagnoses observed were impaired physical mobility, risk for falls, and decreased intracranial adaptive capacity.</p> <p>Conclusion: There are differences in signs and symptoms between hemorrhagic stroke and ischemic stroke during the acute phase, as well as differences in primary nursing diagnoses. However, these distinctions may vary in subsequent phases depending on the severity of the disease and underlying comorbidities.</p>
Keywords: acute stroke, nursing diagnosis, Indonesian nursing diagnosis standards	

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INTRODUCTION

Stroke is a profoundly perilous health problem when not promptly addressed. It stands as the second leading cause of mortality and the third leading cause of disability globally [1][2]. Stroke is a condition which can cause sudden, progressive, and rapid damage to the brain due to disruptions in blood circulation. The resulting disturbances lead to symptoms such as facial or limb paralysis on one side, slurred speech, unclear speech, altered consciousness, and visual impairments [3][4].

A nurse plays a crucial role in promptly and accurately providing care to stroke patients, thereby aiding them in achieving optimal health during the stroke management process. Accurate nursing diagnosis is essential for nurses in this regard, serving as an indicator to assist patients in reaching their maximum health potential. However, there are challenges in implementing nursing diagnosis in Indonesia. One primary obstacle is the lack of standardized nursing diagnosis usage. This can lead to inconsistencies and inaccuracies in nursing diagnoses performed by nurses [5][6].

The World Health Organization (WHO) stated that from 2020 to 2021, there was an increase in the number of deaths due to stroke from 2 million cases to 8.9 million cases (an 11% increase) [7]. According to data from the World Stroke Organization (WSO), there were 12,224,551 new cases of stroke reported annually in the year 2022 [8]. Based on the Basic Health Research (Riskesmas) results in 2020, the prevalence of stroke in Indonesia has been increasing, reaching a total of 10.9%

of cases [9]. Furthermore, in East Java province, the number of stroke patients reaches 40.3% [3].

Based on a preliminary study on November 23, 2023, at Muhammadiyah Lamongan Hospital, it was found that the number of stroke patients treated in the Emergency Department (IGD) in 2021 was 753 cases. Subsequently, in 2022, the number of stroke patients increased to 1,084 cases. From January to December 2023, a total of 1,215 stroke patients were treated in the emergency room, including 422 cases of hemorrhagic stroke and 793 cases of ischemic stroke. Among the 10 sampled nursing diagnoses at Muhammadiyah Lamongan Hospital are decreased intracranial adaptive capacity, activity intolerance, impaired physical mobility, communication disorders, acute pain, anxiety, and risk of falls.

Nursing diagnosis is a fundamental component in determining appropriate nursing care to assist patients in achieving optimal health. While every hospital and healthcare facility implements nursing diagnoses, standardized terminology and criteria are necessary to ensure consistent, accurate, and unambiguous nursing diagnosis establishment. Therefore, nursing professional organizations in Indonesia have established the Indonesian Nursing Diagnosis Standards to promote uniformity in terminology [10].

Based on previous research, there has been a lack of nursing diagnoses for stroke patients, especially in the acute phase in emergency departments. The research conducted by Wulandari on the development of a clinical pathway format based on the

Indonesian Standard Nursing Diagnosis (SDKI) encompassed several case types, including diabetes mellitus, thrombotic stroke, pneumonia, and acute myocardial infarction. The findings indicated that the nursing diagnoses identified for the clinical pathway concerning patients with thrombotic stroke admitted to inpatient care, as per SDKI, included physical mobility impairment (100%), decreased intracranial adaptive capacity (80%), and ineffective breathing pattern (70%) [11]. Additionally, Sukrisno's study on the development of a clinical pathway based on the 3S framework (SDKI, SLKI, SIKI) for patients with hemorrhagic stroke in the inpatient setting of Dr. Soetomo Regional Hospital, Surabaya, revealed that the nursing diagnoses prevalent among hemorrhagic stroke patients included decreased intracranial adaptive capacity, physical mobility impairment, ineffective airway clearance, acute pain, and risk of fluid imbalance [12].

Both studies primarily focused on the analysis of documentation, the formulation of clinical pathways, and the testing of the validity and reliability of these pathways, with only limited discussion regarding nursing diagnoses for stroke patients in the inpatient setting. To date, no research has been conducted to identify nursing diagnoses for stroke patients during their treatment in the emergency department (acute phase), particularly one that analyzes the signs and symptoms associated with stroke and presents a more comprehensive view of nursing diagnoses in a significantly larger

sample. Therefore, researchers are interested in identifying nursing diagnoses for acute-phase stroke patients in the Emergency Department based on the Indonesian Nursing Diagnosis Standards. The research aims to analyze the signs and symptoms in hemorrhagic and ischemic stroke patients, as well as to analyze nursing diagnoses for hemorrhagic and ischemic stroke patients.

METHODS

Design and Settings

This study utilized a retrospective descriptive design, analyzing medical records data of stroke patients treated in the Emergency Department of Muhammadiyah Lamongan Hospital from January to December 2023. The research was conducted from February to March 2024.

Samples

Population in this study consisted of all medical records of acute-phase stroke patients treated in the Emergency Department of Muhammadiyah Lamongan Hospital in 2023, totaling 1,215 patients, divided into hemorrhagic stroke (422 patients) and ischemic stroke (793 patients). The sample size included 205 patients with hemorrhagic stroke and 266 patients with ischemic stroke, determined using the Slovin's formula with $\alpha=0.05$. Sampling was conducted using cluster random sampling and selected randomly using simple random sampling, as shown in the following table.

Table 1. Cluster Random Sampling

No	Month	Population/Sample	
		Hemorrhagic Stroke	Ischemic Stroke
1	January	34/17	67/22
2	February	30/15	54/18
3	March	37/18	61/20
4	April	26/13	74/25
5	May	38/18	80/27
6	June	34/17	55/18
7	July	37/18	57/19
8	August	39/19	66/22
9	September	45/21	73/25
10	October	38/18	70/24
11	November	31/16	65/22
12	December	33/16	71/24
Total		422/205	793/266

The inclusion criteria for the study were patients admitted to the Emergency Department with a diagnosis of either hemorrhagic stroke or ischemic stroke from January to December 2023, without any accompanying illnesses, and who presented within 48 hours of symptom onset. Exclusion criteria included patients admitted to the Emergency Department with a diagnosis of hemorrhagic stroke or ischemic stroke from January to December 2023, who had accompanying illnesses such as Tuberculosis, Chronic Obstructive Pulmonary Disease, Acute Myocardial Infarction, Hyperglycemic Diabetes Mellitus, Diabetic Ketoacidosis (DKA), Severe Head Injury, Moderate Head Injury, Mild Head Injury, Cerebral Edema, and stroke patients admitted from outpatient care to the Emergency Department.

Instrument

The research instruments used included a summary sheet, medical record notes from patients in the medical records room of Muhammadiyah Lamongan Hospital, and the Indonesian Nursing Diagnosis Standards.

Procedures

The study began by collecting the names of hemorrhagic stroke and ischemic stroke patients treated in the Emergency Department from January to December 2023. For hemorrhagic stroke patients, 215 out of 422 patients met the inclusion criteria. The researcher then placed these names into a box and randomly selected the required number of samples, categorized by month, using an odd-even technique. This process resulted in a final sample of 205 patients. For ischemic stroke patients, 285 out of 793 patients met the inclusion criteria. Similarly, the researcher placed these names into a box, randomly selected the required number of samples using the odd-even technique, and categorized them by month. This process resulted in a final sample of 266 patients. The researcher solely analyzed the selected patient names from the medical record data.

Data Analysis

The obtained data was tabulated and analyzed descriptively.

Ethical Clearance

This research has been approved by the Ethics Committee of Muhammadiyah University Lamongan on March 5, 2024, with Ethics

Committee Number 032/EC/KEPK-S1/03/2024.

RESULTS

The total number of stroke patients analyzed in this study is 471, consisting of 205 hemorrhagic strokes and 266 ischemic strokes.

Table 2. Demographic Data

Variable	Category	Hemorrhagic Stroke		Ischemic Stroke	
		n	%	n	%
Age (y/o)	21-30	0	0	1	0.3
	31-40	8	4	3	1
	41-50	30	15	25	9.3
	51-60	77	37	85	32
	61-70	63	31	98	37
	71-80	20	10	46	17.4
	> 80	7	3	8	3
	Total	205	100	266	100
Gender	Male	104	51	153	58
	Female	101	49	113	42
	Total	205	100	266	100
Education	Elementary School	110	54	140	53
	Junior High School	36	18	26	10
	Senior High School	53	26	73	27
	Diploma 3	1	0,5	3	1
	Higher Education	5	1,5	24	9
	Total	205	100	266	100
Occupation	Farmer	47	23	75	29
	Self-employed	54	26	70	26
	Private Employee	7	3	9	3
	Civil Servant	4	2	25	9
	Others	93	46	87	33
	Total	205	100	266	100

Based on Table 2, hemorrhagic stroke most commonly occurs in the age range of 51-60 years (37%) with an average age of 59 years, a minimum age of 34 years, and a maximum age of 87 years. Ischemic stroke

most commonly occurs in the age range of 61-70 years (37%) with an average age of 62 years, a minimum age of 34 years, and a maximum age of 83 years. The majority of stroke patients are male for both hemorrhagic

and ischemic strokes (51%; 58%). The majority of stroke patients have completed elementary school education for both

hemorrhagic and ischemic strokes (54%; 53%).

Table 3. Medical Diagnoses of Hemorrhagic and Ischemic Strokes

Hemorrhagic Stroke			
No.	Medical Diagnosis	n	%
1.	ICH (<i>intracerebral hemorrhage</i>)	187	91
2.	CVA Bleeding	155	76
3.	IVH (<i>intraventricular hemorrhage</i>)	69	34
4.	Hypokalemia	32	16
5.	Essential Hypertension	30	15
6.	SDH Nontraumatic	23	11
7.	Hemiplegia	17	8
8.	SAH Nontraumatic	16	7
9.	SAH (<i>subarachnoid hemorrhage</i>)	7	3
10.	Cephalgia	2	1
11.	CVA Embolism	2	1
12.	EDH (<i>epidural hematoma</i>)	2	1
13.	Cardiomegaly	1	0.5
14.	Dyspnea	1	0.5
15.	Hypertensive Encephalopathy	1	0.5
Ischemic Stroke			
1.	CVA Infarction	235	88
2.	Essential Hypertension	52	19
3.	CVA Embolism	34	13
4.	Hypokalemia	23	9
5.	Hemiplegia	17	6
6.	Cardiomegaly	16	6
7.	Atrial Fibrillation	3	1
8.	Epilepsy	3	1
9.	ICH (<i>intracranial hemorrhage</i>)	3	1
10.	ARF (<i>acute renal failure</i>)	3	1
11.	Encephalopathy	2	0.8
12.	Atrophy Brain	2	0.8
13.	Cephalgia	1	0.3
14.	Arteritis	1	0.3
15.	Acute Subdural	1	0.3
16.	Transient Cerebral	1	0.3
17.	IVH (<i>intraventricular hemorrhage</i>)	1	0.3
18.	Ischemia	1	0.3
19.	SAH (<i>subarachnoid hemorrhage</i>)	1	0.3
20.	SDH (<i>subdural hematoma</i>)	1	0.3
21.	TIA (<i>transient ischemic attack</i>)	1	0.3
22.	EDH (<i>epidural hematoma</i>)	1	0.3
23.	Dyspnea	1	0.3

Based on Table 3, the majority of medical diagnoses in hemorrhagic stroke patients include ICH (Intracerebral Hemorrhage), CVA Bleeding, and IVH (Intraventricular

Hemorrhage) (91%, 76%, 34% respectively). For ischemic stroke patients, the majority of medical diagnoses include CVA Infarction, Essential Hypertension, and CVA Embolism

(88%, 19%, 13% respectively). Several hemorrhagic and ischemic stroke patients

were diagnosed with more than one medical condition.

Table 4. Signs and Symptoms of Hemorrhagic Stroke and Ischemic Stroke

Hemorrhagic Stroke			
No.	Signs and Symptoms	n	%
1.	Headache	186	90.7
2.	Decreased level of consciousness	186	90.7
3.	Blood pressure increases with <i>dilated pulse</i> pressure	186	90.7
4.	Physical weakness	158	77.0
5.	Complaining of difficulty moving the extremities	158	77.0
6.	Reduced range of motion (ROM)	158	77.0
7.	Decreased muscle strength	158	77.0
8.	Limited movement	158	77.0
9.	Complaining of dizziness	130	63.4
10.	Slurred speech	124	60.4
11.	Difficulty understanding communication	124	60.4
12.	Dysarthria	124	60.4
13.	Difficult to maintain communication	124	60.4
14.	Increased blood pressure	105	51.2
15.	Showing an inappropriate response	80	39.0
16.	Unable to speak or hear	72	35.1
17.	Aphasia	65	31.7
18.	Impaired cognitive function	56	27.3
19.	Bradycardium	43	20.9
20.	Dyspnea	40	19.5
21.	Irregular breathing patterns	30	14.6
22.	Abnormal respiration	30	14.6
23.	Agitation	25	12.1
24.	Impaired neurological reflexes	24	11.7
25.	Vomiting (without nausea)	19	9.2
26.	Slowed/unequal pupil response	19	9.2
27.	Sensory distortion	17	8.2
28.	Ineffective cough	14	6.8
29.	Inability to cough	14	6.8
30.	Feeling restless	4	1.9
31.	Inappropriate response	4	1.9
32.	Self-talk	4	1.9
33.	Feeling confused	4	1.9
34.	Feeling worried	4	1.9
Ischemic Stroke			
1.	Complaining of difficulty moving the extremities	247	92.8
2.	Reduced range of motion (ROM)	247	92.8
3.	Decreased muscle strength	247	92.8
4.	Slurred speech	235	88.3
5.	Limited movement	224	84.2
6.	Physical weakness	224	84.2
7.	Complaining of dizziness	220	82.7
8.	Headache	220	82.7
10.	Decreased level of consciousness	180	67.6
11.	Increased blood pressure	180	67.6
12.	Showing an inappropriate response	165	62.0
13.	Unable to speak or hear	140	52.6
14.	Impaired neurological reflexes	125	46.9
15.	Slowed/unequal pupil response	125	46.9

16.	Agitation	110	41.3
17.	Difficult to maintain communication	110	41.3
18.	Aphasia	95	35.7
19.	Dysarthria	95	35.7
20.	Sensory distortion	83	31.2
21.	Feeling worried	83	31.2
22.	Feeling confused	83	31.2
23.	Looks agitated	83	31.2
24.	Self-talk	70	26.3
25.	Inappropriate response	66	24.8
26.	Vomiting (without nausea)	54	20.3
27.	Abnormal respiration	20	7.5
28.	Irregular breathing patterns	20	7.5
29.	Bradycardia	15	5.6
30.	Impaired cognitive function	10	3.7
31.	Difficulty understanding communication	9	3.3
32.	Dyspnea	3	1.1
33.	Ineffective cough	3	1.1
34.	Inability to cough	3	1.1

Based on Table 4, the majority of signs and symptoms in hemorrhagic stroke patients include severe headache, decreased level of consciousness, increased blood pressure with widened pulse pressure

(90.7%). For ischemic stroke patients, the majority of signs and symptoms include difficulty moving extremities, decreased range of motion (ROM), and decreased muscle strength (92.8%).

Table 5. Nursing Diagnoses for Hemorrhagic Stroke and Ischemic Stroke

Hemorrhagic Stroke			
No.	Nursing Diagnosis	n	%
1.	Decreased intracranial adaptive capacity	179	87,3
2.	Impaired physical mobility	145	70,7
3.	Risk of falls	152	74,1
4.	Verbal communication disorders	85	41,4
5.	Risk of ineffective cerebral perfusion	62	30,2
6.	Ineffective breathing patterns	9	4,3
7.	Sensory disturbances	8	3,9
8.	Ineffective airway clearance	5	2,4
9.	Anxiety	4	1,9
10.	Risk of fluid imbalance	2	0,9
Ischemic Stroke			
1.	Impaired physical mobility	217	81,5
2.	Risk of falls	153	57,5
3.	Decreased intracranial adaptive capacity	132	49,6
4.	Verbal communication disorders	120	45,1
5.	Risk of ineffective cerebral perfusion	33	12,4
6.	Sensory disturbances	12	4,5
7.	Anxiety	12	4,5
8.	Risk of fluid imbalance	4	1,5
9.	Ineffective breathing patterns	3	1,1
10.	Ineffective airway clearance	3	1,1

Based on Table 5, the majority of nursing diagnoses for hemorrhagic stroke patients include decreased intracranial adaptive capacity, impaired physical mobility, and risk of falls (87.3%, 70.7%, 74.1% respectively).

DISCUSSION

Signs and Symptoms in Hemorrhagic

Stroke Patients

The results of this study identified the signs and symptoms that manifest in hemorrhagic stroke patients, including severe headache, decreased level of consciousness, increased blood pressure with widened pulse pressure, physical weakness, difficulty moving extremities, decreased range of motion (ROM), decreased muscle strength, limited movement, complaining of dizziness, slurred speech, difficulty understanding communication, dysarthria, difficulty maintaining communication, increased blood pressure, inappropriate responses, inability to speak or hear, aphasia, bradycardia, dyspnea, irregular breathing patterns, abnormal breathing patterns, agitation, disturbed neurological reflexes, vomiting (without nausea), slowed pupil response or unequal pupils, sensory distortion, ineffective cough, inability to cough, feeling restless, inappropriate responses, self-talk, confusion, and anxiety.

Based on theory, several common signs and symptoms experienced by hemorrhagic stroke patients include decreased level of consciousness, increased blood pressure, vomiting (without nausea), severe headache, and increased blood pressure with widened pulse pressure [13], complain of difficulty moving extremities, decreased range of

For ischemic stroke patients, the majority of nursing diagnoses include impaired physical mobility, risk of falls, and decreased intracranial adaptive capacity (81.5%, 57.5%, 49.6% respectively).

motion, decreased muscle strength, limited movement, physical weakness, and complaining of dizziness. [14], slurred speech, dan aphasia [15], abnormal breathing patterns, irregular breathing patterns and dyspnea [16], impaired neurologic reflexes, ineffective cough, inability to cough, feeling anxious and dysarthria [17], difficulty understanding communication, inability to speak or hear and impaired cognitive function [18].

The signs and symptoms identified in this study, which are included in the SDKI (Standard Diagnosis of Nursing in Indonesia) book but not explicitly mentioned in the theoretical framework, include difficulty maintaining communication, inappropriate responses, bradycardia, agitation, slowed or unequal pupil responses, sensory distortion, inappropriate responses, talking to oneself, confusion, and anxiety. Difficulty maintaining communication arises due to circulatory disturbances in stroke patients caused by reduced blood flow to the brain or hemorrhage. Inappropriate responses can occur because hemorrhagic stroke impedes blood flow to the brain, resulting in decreased brain function. Bradycardia refers to a slower than normal heart rate and results from damage to the autonomic nervous system regulating heart rhythm. Slowed pupil responses may indicate optic nerve damage or brain pressure. Sensory distortion occurs due to disruptions in sensory systems such as

vision, hearing, or touch. Agitation, talking to oneself, confusion, and anxiety arise because stroke patients struggle with independent activities, emotional control, and experience fear, restlessness, anger, and sadness due to their physical and mental limitations.

Signs and Symptoms in Ischemic

Stroke Patients

The findings of this study revealed the signs and symptoms that occur in ischemic stroke include complaining of difficulty moving extremities, decreased range of motion (ROM), decreased muscle strength, slurred speech, limited movement, physical weakness, complaining of dizziness, severe headache, decreased level of consciousness, increased blood pressure, inappropriate responses, inability to speak or hear, disturbed neurological reflexes, slowed or unequal pupil responses, agitation, difficulty maintaining communication, aphasia, dysarthria, sensory distortion, feeling worried, feeling confused, appearing restless, inappropriate responses, vomiting (without nausea), irregular breathing patterns, abnormal breathing patterns, bradycardia, impaired cognitive function, difficulty understanding communication, dyspnea, ineffective cough, and inability to cough.

According to theory, the signs and symptoms in ischemic stroke patients typically include complaints of difficulty moving extremities, decreased range of motion (ROM), decreased muscle strength, and limited movement [19], slurred speech, difficulty understanding communication, and aphasia [20], difficulty maintaining

communication and headaches, abnormal breathing patterns and irregular breathing patterns, feeling confused, feeling worried and appearing agitated [21], increased blood pressure [22], dizzy and dyspnea [23], dysarthria [24], physical weakness [25], decreased level of consciousness [26].

The signs and symptoms identified in this study, present in the Indonesian Nursing Diagnosis Standards but not explicitly mentioned in the theoretical framework, include inappropriate responses, inability to speak or hear, disturbed neurological reflexes, slowed or unequal pupil responses, agitation, sensory distortion, self-talk, inappropriate responses, vomiting (without nausea), bradycardia, impaired cognitive function, ineffective cough, and inability to cough. Inappropriate responses occur because in ischemic stroke, one of the blood flows to the brain is obstructed. The inability to speak can arise due to communication impairments caused by neurological disturbances. Impaired neurological reflexes occur when blood supply to a specific part of the brain is suddenly interrupted, often due to artery blockage or stenosis, leading to hypoperfusion that affects neurological function. Slowed or unequal pupil responses may indicate damage to the optic nerve. Agitation often occurs in ischemic stroke due to neurological disturbances in patients. Sensory distortion can occur due to disruptions in the sensory system. Self-talk is caused by damage to brain areas involved in emotional control and motor responses, which can lead patients to talk to themselves. Vomiting (without nausea) can be caused by increased pressure in the brain, leading to

vomiting without nausea. Bradycardia refers to a slower than normal heart rate. Cognitive impairment occurs due to decreased cerebral perfusion, which leads to damage to brain cells. Ineffective cough and inability to cough can lead to respiratory failure in the respiratory system due to excessive sputum accumulation, causing patients to be unable to cough effectively.

Differences in Signs and Symptoms Between Hemorrhagic and Non-Hemorrhagic Stroke

The common signs and symptoms in both hemorrhagic stroke (HS) and non-hemorrhagic stroke (NHS) include aphasia, agitation, ineffective cough, speaking to oneself, bradycardia, dysarthria, dyspnea, sensory distortion, physical weakness, impaired cognitive function, limited movement, reduced muscle rigidity, complaints of dizziness, difficulty moving extremities, inappropriate responses, confusion, anxiety, vomiting (without nausea), slurred speech, abnormal breathing patterns, irregular breathing, disrupted neurological reflexes, decreased range of motion (ROM), delayed or unequal pupillary responses, inappropriate reactions, headache, difficulty understanding communication, challenges in maintaining communication, restlessness, elevated blood pressure, inability to cough, inability to speak or hear, and decreased levels of consciousness.

The specific differences in signs and symptoms identified in this study between hemorrhagic stroke and non-hemorrhagic stroke include restlessness and increased blood pressure accompanied by widened

pulse pressure, which are manifestations exclusive to hemorrhagic stroke and not founded in non-hemorrhagic stroke.

Nursing Diagnosis in Hemorrhagic Stroke Patients

The results of this study identified 10 nursing diagnoses that emerged in patients with hemorrhagic stroke in the emergency department. These nursing diagnoses include decreased intracranial adaptive capacity, impaired physical mobility, risk of falls, verbal communication impairment, ineffective cerebral perfusion pattern, ineffective breathing pattern, sensory disturbances, ineffective airway clearance, anxiety, and risk of electrolyte imbalance.

The most frequent nursing diagnosis is decreased intracranial adaptive capacity. Decreased intracranial adaptive capacity refers to a disruption in the intracranial dynamic mechanism to compensate for stimuli that may reduce intracranial capacity. This condition is caused by cerebral edema or swelling within the central nervous system [17].

The second most frequent nursing diagnosis is impaired physical mobility. In hemorrhagic stroke, impaired physical mobility manifests as hemiparesis, which is paralysis of one side of the body due to damage in the motor areas of the frontal cortex. This damage is contralateral, meaning if the right hemisphere is damaged, there will be muscle paralysis on the left side, and vice versa [17].

The third most common nursing diagnosis is risk for falls. In stroke patients, the risk for falls persists from hospitalization

to rehabilitation at home, potentially causing physical and mental losses such as sensory and motor impairments that lead to balance and coordination disturbances. This vulnerability makes stroke patients prone to falling [27].

The fourth most common nursing diagnosis is verbal communication impairment. This condition arises from damage to brain areas responsible for language production and comprehension, leading patients to struggle with verbal communication and understanding words [28].

The fifth most common nursing diagnosis is ineffective cerebral perfusion risk. This risk arises due to circulatory disturbances caused by vascular damage affecting peripheral vessels, changes in small arteries or arterioles leading to blockages or vessel rupture, disrupting blood flow due to increased blood pressure [29].

The sixth most common nursing diagnosis is ineffective breathing pattern. Stroke patients may experience ineffective breathing patterns due to cerebral damage affecting the respiratory center, causing excessive response to CO₂. Furthermore, impaired blood flow in stroke patients can lead to hemodynamic abnormalities, affecting the distribution of oxygen throughout the body [16].

STUDY LIMITATIONS

The study was not without its limitations. A broad view is essential to get as much depth of the topic as possible. The study was limited by limited references regarding health

workers' knowledge of electronic medical records and a lack of specific issues and subjects in research regarding who the health workers in question are.

The seventh most common nursing diagnosis is sensory disturbances. This condition relates to damage in the brain areas responsible for processing sensory information, leading to disruptions in the patient's ability to comprehend and respond to sensory stimuli such as vision, hearing, or tactile sensations [30].

The eighth most common nursing diagnosis is ineffective airway clearance. In patients with hemorrhagic stroke and decreased consciousness, there is a lack of effective cough reflex to clear secretions, resulting in accumulation of thick mucus or phlegm in the airway [17].

The ninth most common nursing diagnosis is anxiety. From a psychological aspect, patients may feel overwhelmed by their illness and their body's condition with long-term disability and paralysis, causing them to feel unable to engage in activities and roles as they did before [31].

The nursing diagnosis with the least frequency is risk for fluid volume imbalance. This occurs in stroke patients with decreased consciousness, rendering them unable to control fluid intake or output in the body [32].

Out of the 10 nursing diagnoses identified, there are 2 nursing diagnoses that differ from those established by the researcher, namely activity intolerance and acute pain, because these diagnoses were not listed on the observation sheets.

Nurse Diagnosis in Ischemic Stroke

Patients

The results of this study reveal 10 nursing diagnoses identified in patients with ischemic stroke in the emergency department. These nursing diagnoses include impaired physical mobility, risk for falls, decreased intracranial adaptive capacity, verbal communication impairment, ineffective cerebral perfusion, sensory disturbances, anxiety, risk for fluid imbalance, ineffective breathing pattern, and ineffective airway clearance.

The most prevalent nursing diagnosis in patients with ischemic stroke is impaired physical mobility. Impaired physical mobility refers to limitations in independent physical movement of one or more extremities, often accompanied by complications such as pain, cognitive impairment, anxiety, depression, bed rest with assistive devices, and comorbidities commonly associated with ischemic stroke [14].

The second most common nursing diagnosis is the risk of falls. The risk of falls in stroke patients occurs from the time of hospitalization to rehabilitation at home [27]. The third most common nursing diagnosis is decreased intracranial adaptive capacity. Decreased intracranial adaptive capacity refers to the impairment of the brain's dynamic mechanisms to compensate for stimuli that may reduce intracranial capacity, typically caused by cerebral edema or swelling within the central nervous system [17].

The third most common nursing diagnosis is decreased intracranial adaptive capacity. Decreased intracranial adaptive capacity refers to the impairment of the

brain's dynamic mechanisms to compensate for stimuli that may reduce intracranial capacity, typically caused by cerebral edema or swelling within the central nervous system [28]. The fifth most common nursing diagnosis is ineffective cerebral tissue perfusion. Ineffective cerebral tissue perfusion occurs due to impaired blood circulation caused by vascular damage in peripheral vessels [29].

The sixth most common nursing diagnosis is sensory disturbances. Sensory disturbances are related to damage in the brain areas responsible for processing sensory information, causing stroke patients to experience difficulties in understanding and responding to sensory stimuli such as vision, hearing, or changes [30]. The seventh most frequent nursing diagnosis is anxiety. This is attributed to the psychological aspect of patients feeling resigned to their illness and the long-term disability affecting their body condition. As a result, patients are unable to perform activities as they would under normal circumstances.[31].

The eighth most frequent nursing diagnosis is risk for fluid volume imbalance. This condition can occur in stroke patients with decreased level of consciousness, resulting in an inability to control fluid intake or output in the body. [32]. The ninth most common nursing diagnosis is ineffective breathing pattern. Stroke patients may experience ineffective breathing patterns due to cerebral damage affecting the respiratory center, leading to excessive CO₂ response [16].

Another nursing diagnosis found in ischemic stroke patients is ineffective airway

clearance. In stroke patients with decreased consciousness, there is a lack of effective cough reflex to clear secretions, leading to accumulation of mucus or phlegm in the airway [17].

From the 10 nursing diagnoses identified in this study, there are 2 nursing diagnoses that differ from those established by the researcher, namely activity intolerance and acute pain, because these diagnoses were not listed on the observation sheets used in this study.

Differences in Nursing Diagnoses Between Hemorrhagic and Non-Hemorrhagic Stroke

Nursing diagnoses identified in this study in both hemorrhagic stroke (HS) and non-hemorrhagic stroke (NHS) include anxiety, ineffective airway clearance, verbal communication impairment, physical mobility impairment, sensory perception disturbance, decreased intracranial adaptive capacity, ineffective breathing pattern, risk of falls, risk of fluid imbalance, and risk of ineffective cerebral perfusion. While these nursing diagnoses are present in both types of stroke, the primary priorities differ between the two.

In the case of hemorrhagic stroke, the foremost nursing diagnosis is decreased intracranial adaptive capacity, followed by physical mobility impairment. Conversely, in non-hemorrhagic stroke, the primary nursing diagnosis is physical mobility impairment, followed by the risk of falls, with decreased intracranial adaptive capacity ranked as the third priority.

LIMITATION

This research could not utilize primary or real-time data due to time constraints and a limited sample size. Therefore, secondary data from medical records was employed. However, if data were not entered or reviewed properly, it could not be cross-verified with the patient in real time, which ultimately affected the accuracy of the nursing diagnosis.

CONCLUSION

Based on the study findings, it can be deduced that certain signs and symptoms observed in hemorrhagic stroke patients, documented in the Indonesian Nursing Diagnosis Standards but not comprehensively covered in theoretical frameworks, include difficulty maintaining communication, inappropriate responses, bradycardia, agitation, slowed or unequal pupil response, sensory distortions, self-talk, confusion, and anxiety. Predominant nursing diagnoses derived from the research encompass decreased intracranial adaptive capacity, impaired physical mobility, risk of falls, verbal communication impairments, ineffective cerebral perfusion, ineffective breathing patterns, sensory disturbances, ineffective airway clearance, anxiety, and risk of fluid imbalance. Meanwhile, signs and symptoms observed in ischemic stroke patients include inappropriate responses, inability to speak or hear, impaired neurological reflexes, slowed or unequal pupil responses, agitation, sensory distortions, self-talk, inappropriate responses, vomiting (without nausea), bradycardia, impaired cognitive function, ineffective cough and

inability to cough effectively. The most frequently encountered nursing diagnoses in these cases are impaired physical mobility, risk of falls, decreased intracranial adaptive capacity, verbal communication impairments, ineffective cerebral perfusion, sensory disturbances, anxiety, risk of fluid imbalance, ineffective respiratory patterns, and ineffective airway clearance.

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CONFLICT OF INTEREST

There is no conflict of interest in this research

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