VARIATIONS OF NURSING DIAGNOSIS LANGUAGE IN STROKE PATIENTS BASED ON SDKI (STANDARD DIAGNOSIS NURSING INDONESIAN)

Ilkafah Ilkafah[1]* , Ouvin Qur'aini[2] , Joko Susanto[1] , Anestasia Pangestu Mei Tyas[1] , Akbar Harisa[3]

[1]Faculty of Vocational Studies, Universitas Airlangga Surabaya, Indonesia
[2]Faculty of Nursing, Universitas Airlangga Surabaya, Indonesia
[3]Faculty of Nursing, Universitas Airlangga Surabaya, Indonesia

Research Report

ABSTRACT

Introduction: The nursing system in Indonesia has an SDKI (Standard Diagnosis Nursing Indonesia) as the basis for determining nursing diagnoses. Inappropriate enforcement of nursing diagnoses based on the SDKI causes the objectives of the SDKI to not be fully achieved. Stroke is a state of cerebrovascular disease that can occur due to death in brain tissue caused by a lack of blood flow and oxygen flow to the brain. This study aims to find out the description of variations in writing nursing diagnoses in stroke patients based on the SDKI in Hospital RSUD Dr. Soegiri Lamongan. **Methods**: This research method is a documentation study, of 125 medical records of stroke patients at Hospital RSUD Dr. Soegiri Lamongan from August 2021 to February 2022, totaling 125 medical records. The data collection used consecutive sampling. The research was carried out in the working area of Hospital RSUD Dr. Soegiri Lamongan in March 2022. **Results**: The results showed that nursing diagnoses in patients with hemorrhagic stroke and non-hemorrhagic stroke were based on the SDKI Hospital RSUD Dr. Soegiri Lamongan, which are mostly written by nurses are impaired physical mobility (63%), variations in writing nursing diagnoses according to the SDKI (66%) and not according to the SDKI (34%), signs and symptoms in patients with hemorrhagic stroke and non-hemorrhagic stroke are mostly experienced weakness in moving the right extremity (31%). **Conclusions**: Nurses in establishing nursing diagnoses are appropriate based on the SDKI.

INTRODUCTION

The hospital is a service institution that has a complex organization with multi-profession, multi-competence, multi-production so that it allows for many errors or errors inprovide services to the community. The existence of evidence-based standards in each organization is one form of avoiding mistakes, but requires the ability of the profession to document correctly. Documentation in nursing plays an important role in all kinds of public demands that are increasingly critical and affect public awareness of their rights from a health unit. Documentation that is not done completely can reduce the quality of nursing services because it cannot identify the extent to which the level of success of nursing care that has been provided. Nursing care can run very well, but undocumented nursing care means care that is not carried out in legal courts. In accordance with Article 13 of Law no. 44 of 2009 concerning Hospitals, every health worker who works in hospitals must work in accordance with professional standards, hospital service standards, applicable standard operating procedures, professional ethics, respecting patient rights and prioritizing patient safety. Article 30 of Law no. 38 of 2014 concerning nursing in carrying out their duties as nursing care providers, nurses are authorized to enforce nursing diagnoses. Nurses must act as nursing diagnoses that have been standardized and established by the PPNI professional organization and approved by the minister, namely the Indonesian Nursing Diagnosis Standard (SDKI) (Suryono & Nugroho, 2020). The purpose of the preparation of the SDKI is to serve as a reference or basis for establishing nursing diagnoses, increasing nurse autonomy, facilitating intraprofessional communication, and improving the quality of nursing care, as well as measuring the workload or rewards of nurses (Tim Pokja SDKI DPP PPNI, 2017).

Even though the Indonesian nursing system has an SDKI as a basis for determining nursing diagnoses, based on the results of interviews with professional students in several hospitals, there are still several health service agencies in establishing nursing diagnoses that are still not appropriate based on the SDKI (Company-Sancho et al., 2017).

Inappropriate enforcement of nursing diagnoses based on the SDKI in several health agencies causes the objectives of the SDKI to not be fully achieved. The expected uniformity of terminology in establishing a diagnosis and describing the scope of the client's health problems is also not achieved, as well as the high

incidence of stroke and also the number of nursing problems that arise. Therefore, the researcher aims to know the description of variations in writing nursing diagnoses in stroke patients based on the SDKI at Hospital RSUD Soegiri Lamongan so that researchers can find out the description of nursing diagnoses from the reference for establishing the diagnosis because it is important to maintain accuracy and consistency in explaining client care using standard nursing terminology (Kim et al., 2012).

MATERIALS AND METHODS

This research uses descriptive in the form of documentation studies. In this study, to find out the variation of writing nursing diagnoses in stroke patients based on the SDKI RSUD Dr. Soegiri Lamongan. The approach used is an observational approach to nursing care medical records and only focuses on variations in writing nursing diagnoses in stroke patients. The research was conducted at hospital RSUD Dr. Soegiri Lamongan in March 2022.

The population in this study were all medical records of patients with a medical diagnosis of stroke who were treated at RSUD Dr. Soegiri Lamongan. The samples taken were some of the medical records of patients with a medical diagnosis of stroke who were treated at RSUD Dr. Soegiri Lamongan in August 2021 to February 2022 totaled 125 medical records. The sampling used in this study was consecutive sampling , namely the selection of samples by determining subjects who met the research criteria to be included in the study for a certain period of time, so that the number of medical records required were fulfilled, namely 125 medical records of stroke patients. The measurement method used in this study is observation on the medical records of stroke patients. The measuring instrument is by putting a checklist on the observation sheet, and on the measurement results, namely Nursing Diagnosis that is in accordance with the SDKI and Not in accordance with the SDKI. The measuring scale used is the ordinal scale. Collecting data in this study through direct observation, namely by the following steps: After obtaining permission from the Academic and Director of RSUD Dr. Soegiri Lamongan, researchers looked at several medical records of stroke patients as research subjects, namely nursing diagnoses in stroke patients based on the SDKI at RSUD Dr. Soegiri Lamongan. Data analysis was carried out in this study, after the data was collected and then tabulated, then the same nursing diagnoses were grouped and summed according to the items in one category and the percentage was calculated. The data that has been percentage is then entered in the frequency distribution table and then analyzed with descriptive narration. In this study, permission from the hospital with ethical feasibility No. 445/0332.4/413.209/KEPK/2022.

RESULTS

Table 1. Characteristics of stroke patients by age, gender, education, ethnicity, type of stroke (n=125).

Patient Characteristics	Frequency (F)	Percentage (%)
Age		
20-30 years	1	0.8
31-40 years	2	1.6
41-50 years	14	11.2
51-60 years	44	35.2
61-70 years	41	32.8
71-80 years	17	13.6
81-90 years	6	4.8
Gender	**Frequency (F)**	**Percentage (%)**
Male	77	61.6
Female	48	38.4
Education	**Frequency (F)**	**Percentage (%)**
Elementary School	10	8.0
Junior High School	65	52.0
Senior High School	47	37.6
DIII/PT	3	2.4
Tribes	**Frequency (F)**	**Percentage (%)**
Java	124	99.2
Madura	1	0.8
Types of Stroke	**Frequency (F)**	**Percentage (%)**
Hemoragik	50	40.0
Non Hemoragik	75	60.0
Total	**125**	**100**

Based on table 1, the age group shows the majority of respondents aged 51-60 years as many as 35 patients (35%), and a small proportion aged 20-30 years as many as 1 respondent (0.8%). Based on gender in the table, it can be seen that most of the respondents were male as many as 77 patients (61.6%) and a small proportion were female, namely 48 patients (38.4%). The table shows that most of the patients with Hemorrhagic Stroke and Non-Hemorrhagic Stroke had junior high school education, namely 65 patients (52.0%), while a small proportion had DIII/PT education, namely 3 patients (2.4%). Based on ethnicity, the majority of patients with Hemorrhagic Stroke and Non-Hemorrhagic Stroke are Javanese, namely 124 patients (99.2%), while a small proportion of patients are Madurese, namely 1 patient (0.8%). The table shows that the majority of patients with Non-Hemorrhagic Stroke (CVA Infarction) namely 75 patients (60.0%), while a small proportion of patients with Hemorrhagic Stroke (CVA Bleeding) were 50 patients (40.0%).

Overview of Nursing Diagnosis in Patients with Hemorrhagic Stroke and Non-Hemorrhagic Stroke Based on the SDKI at RSUD Dr. Soegiri Lamongan

Table 2. Nursing Diagnosis in Hemorrhagic Stroke and Non-Hemorrhagic Stroke Patients Hemorrhagic Based on the SDKI at RSUD Dr. Soegiri Lamongan (n=125).

Nursing Diagnosis	Frequency (F)	Percentage (%)
Of Impaired Physical Mobility	79	63.2
Acute Pain	16	12.8
Risk of Falling	11	8.8
Impaired Comfort	9	7.2
Risk of Ineffective Cerebral Perfusion	5	4.0
Risk of Ineffective Cerebral Perfusion	3	2.4
Circulatory Disorders Spontaneous	2	1.6
Total	**125**	**100**

Based on table 2, it shows that most of the nursing diagnoses in patients with hemorrhagic stroke and non-hemorrhagic stroke are based on the SDKI at RSUD Dr. Soegiri Lamongan written by nurses with Physical Mobility Disorders were 79 patients (63.2%) and a small portion of nursing diagnoses written by Spontaneous Circulation Disorder nurses were 2 patients (1.6%).

Overview of Variations in Writing Nursing Diagnosis in Patients with Hemorrhagic Stroke and Non-Hemorrhagic Stroke Based on the SDKI at RSUD Dr. Soegiri Lamongan

Table 3. Variations in Writing Nursing Diagnosis in Stroke Patients Hemorrhagic and Non-Hemorrhagic Stroke Based on SDKI in RSUD Dr. Soegiri Lamongan (n=125).

Nursing Diagnosis Based on SDKI	Variation in Writing Nursing Diagnosis	Frequency (F)	Percentage (%)
Of Physical Mobility	Disorders Physical Mobility	52	41.6
	Barriers to Physical Mobility	27	21.6
Acute Pain	Acute Pain	16	12.8
Risk of Falling	Risk of Falling	11	8.8
Impaired Sense of Comfort	Impaired Comfort Pain	8	6.4
	Impaired Comfort	1	0.8
Risk of Ineffective Cerebral Perfusion	Cerebral Perfusion Impaired Ineffective	4	3.2
	Impaired Cerebral Tissue Perfusion	1	0.8
Impaired Verbal Communication	Verbal Communication Damage	3	2.4
Impaired Spontaneous Circulation	Impaired Spontaneous Circulation	2	1.6
	Total	**125**	**100**

Based on table 3, it shows that most of the Variations in Writing Nursing Diagnosis in Hemorrhagic Stroke and Non-Hemorrhagic Stroke Patients at RSUD Dr. Soegiri Lamongan written by nurses with Physical Mobility Disorders, namely 52 patients (41.6%) and a small number of nursing diagnoses written by nurses with Comfort Disorders, namely 1 patient (0.8%) and Cerebral Tissue Perfusion Disorders, namely 1 patient (0). 8%).

Table 4. Variations in Writing Nursing Diagnosis for Hemorrhagic Stroke and Non-Hemorrhagic Stroke at RSUD Dr. Soegiri Lamongan (n=125).

Variations in Writing Nursing	Diagnosis Nursing Diagnosis	Frequency (F)	Percentage (%)
According to the SDKI	Physical Mobility Disorders	83	66.4
	Acute Pain		
	Fall Risk		
	Disturbance of Comfort		
	Risk of Ineffective Cerebral Perfusion		
	Verbal Communication Disorder		
	Spontaneous Circulatory Disorder		
Not appropriate based on SDKI	Physical Mobility Barriers	42	33.6
	Pain Comfort Disorder		
	Ineffective Cerebral Perfusion Disorder		
	Cerebral Tissue Perfusion Disorders		
	Total	**125**	**100**

Based on table 4, it shows that most of the Variations in Writing Nursing Diagnosis in Patients with Hemorrhagic Stroke and Non-Hemorrhagic Stroke at RSUD Dr. Soegiri Lamongan was appropriate based on the SDKI, namely 83 patients (66.4%), and a small number of variations in writing nursing diagnoses that were not appropriate based on the SDKI, namely 42 patients (33.6%).

Overview of Signs and Symptoms in Hemorrhagic Stroke and Non-Hemorrhagic Stroke Patients at RSUD Dr. Soegiri Lamongan

Table 5. Signs and Symptoms in Patients with Hemorrhagic Stroke and Non-Hemorrhagic Stroke at Dr. Hospital. Soegiri Lamongan (n=125).

Signs and Symptoms CVA Bleeding and CVA Infarction	Frequency (F)	Percentage (%)
Weakness in moving the right extremity	39	31.2
Weakness in moving the left extremity	34	27.2
Decreased consciousness	19	15.2
Sudden difficulty speaking / Pelo	16	12.8
Headache Severe	7	5.6
Pain Head Heavy	7	5.6
Pain Head Heavy	2	5.6
Blurred/unclear vision	1	1.6
Total	**125**	**100**

Based on table 5, it shows that most of the Signs and Symptoms in Hemorrhagic Stroke and Non-Hemorrhagic Stroke Patients experienced weakness in moving the right extremities, namely 39 patients (31.2%) and a small number of Signs and Symptoms experienced blurred/unclear eyesight in 1 patient (0.8%).

Table 6. Comparison of Signs and Symptoms Differences in Patients with Hemorrhagic Stroke and Non-Hemorrhagic (n=125).

Stroke Types of Stroke	Signs and Symptoms	Frequency (F)	Percentage (%)
Hemorrhagic Stroke	Decreased consciousness	19	15.2
	Weakness in moving the left extremity	12	9.6
	Weakness in moving right extremity	10	8.0
	Headache Severe	7	5.6
	Nausea and Vomiting	2	1.6
Stroke Non Hemoragik	Weakness in moving the right extremity	29	23.2
	Weakness in moving the left extremity	22	17.6
	Sudden difficulty speaking / Pelo	16	12.8

Stroke Types of Stroke	Signs and Symptoms	Frequency (F)	Percentage (%)
Stroke Non Hemoragik	Headache	7	5.6
	Blurred/unclear eyesight	1	0.8
	Total	**125**	**100**

Based on table 6, it shows that mostly there are differences in signs and symptoms in patients with hemorrhagic stroke and non-hemorrhagic stroke.

DISCUSSION

From the results of the study, it was found that based on gender, stroke patients were more commonly found in men than women. The results of this study are in line with research conducted by Heidy Patricia et al in 2015 (Patricia et al., 2015) which states that ischemic stroke patients are more common in men than women. This is because women are more protected from heart disease and stroke until middle age due to the hormone estrogen they have. However, gender cannot be the main thing for someone suffering from stroke, because the incidence of stroke can be multifactorial, not only because of gender, including other risk factors such as diabetes mellitus, hypercholesterolemia, smoking, alcohol and heart disease.

Age as one of the characteristics of people, in epidemiological studies is a fairly important variable because quite a lot of diseases are found with various variations in frequency caused by age. From the results of the study, it was found that stroke patients were more common at the age of 51-60 years. The results of this study are in line with the results of research conducted by Puspita in 2008 (Puspita & Putro, 2008) which stated that the risk of stroke in the age group > 55 years was 3.640 times compared to the age group 55 years.

From the results of research based on the latest education, it was found that most stroke patients had junior high school education. The results of this study are different from the results of research conducted by Heidy Patricia et al in 2015 (Patricia et al., 2015) which found that the most stroke patients based on the latest education were high school. The level of education as a socio-economic factor is not directly related to the incidence of stroke. However, a person's level of education determines that person's attitude towards healthy behavior. Education can increase knowledge (Zhao et al., 2024).

Overview of Nursing Diagnosis in Patients with Hemorrhagic Stroke and Non-Hemorrhagic Stroke Based on the SDKI at RSUD Dr. Soegiri Lamongan

The results showed that most of the nursing diagnoses in patients with hemorrhagic stroke and non-hemorrhagic stroke were based on the SDKI at RSUD Dr. Soegiri Lamongan which many nurses write about is Physical Mobility Disorder.

These results were corroborated by research conducted by Alice Gabrielle de SC et al on 121 stroke patients, the results obtained 90% or 109 stroke patients showed nursing problems with physical mobility disorders (Selvia, 2015). This diagnosis is defined as limitations in performing physical movements in one or more extremities independently and purposefully. Movement disorders are a common problem in stroke sufferers and require long rehabilitation (Duarte-Clíments et al., 2021; Toral, 2021; Zakel et al., 2024).

Nursing diagnoses of physical mobility disorders are mostly enforced by nurses as nursing diagnoses in stroke patients, because stroke patients will experience limitations to perform certain physical movements in one or more extremities of the body. Characteristics for nursing diagnosis of impaired physical mobility are unstable posture during daily routine activities, limited ability to perform gross and fine motor skills, no coordination or jerky movements, limited ROM, difficulty turning, and changes in style walk.

Variations in Writing Nursing Diagnosis in Patients with Hemorrhagic Stroke and Non-Hemorrhagic Stroke Based on the SDKI at RSUD Dr. Soegiri Lamongan

The results showed that most of the variations in the writing of nursing diagnoses for hemorrhagic stroke patients and non-hemorrhagic stroke patients were written by nurses at RSUD Dr.Soegiri Lamongan, variations of writing nursing diagnoses for each nursing diagnosis are different, there is one nursing diagnosis consisting of two variations of writing nursing diagnoses, and there is also one nursing diagnosis consisting of one variation of writing nursing diagnoses and. The variation nursing diagnosis based on clinical condition and model of documentation (Bertocchi et al., 2024; Oliveira-Kumakura et al., 2021). Most of the nurses in establishing a nursing diagnosis are in accordance with the SDKI and only a small number of nurses are still in establishing a nursing diagnosis that is not appropriate based on the SDKI.

Competency of nurses in RSUD Dr. Soegiri Lamongan in documenting nursing diagnoses, most of the variations in writing nursing diagnoses in patients with hemorrhagic stroke and non-hemorrhagic stroke are in accordance with established standards, namely according to the SDKI, but there are still a small number of nurses who in establishing nursing diagnoses are still not appropriate based on the SDKI. The competence of nurses in establishing nursing diagnoses is still not appropriate based on the SDKI, it is still unknown the exact cause, is it because there are still nurses who have not received training in establishing nursing diagnoses using the SDKI, or there are other causes. Based on research conducted by Suryono et al in 2020 which stated that the competence of nurses in documenting nursing

diagnoses in accordance with the SDKI, the majority were sufficient and good, this was inseparable from their backgrounds, all of whom (100%) had attended training related to the SDKI, the majority working period > 8 years by 66.67% and also policies in the room that have provided the selected diagnosis format by ticking the appropriate diagnosis from the results of the assessment so as to facilitate the process of remembering or making decisions (Suryono & Nugroho, 2020).

This study has similarities with the findings of Ningrum et al in 2013 who reported that education and training for employees had a significant influence on employee performance, in this case education and training related to the SDKI and nurse competence in making nursing documentation. Education and training have a significant effect on competence. The training is necessary to improve the knowledge, skills and attitudes of employees (Rofii et al., 2018).

Signs and Symptoms in Hemorrhagic Stroke and Non-Hemorrhagic Stroke Patients at RSUD Dr. Soegiri Lamongan

The results showed that most of the signs and symptoms that occurred in patients with hemorrhagic stroke and non-hemorrhagic stroke in RSUD Dr. Soegiri Lamongan is experiencing weakness in moving the right extremity, weakness in moving the left extremity and decreased consciousness.

These results are corroborated by research conducted by Selvia Harum et al. It was found that 93% of stroke patients experienced a decrease in muscle strength. Decreased muscle strength is a manifestation of hemiparesis (weakness on one side of the body) which is most often found in stroke patients (Selvia, 2015).

The results also showed that most of the signs and symptoms were different in patients with hemorrhagic stroke and non-hemorrhagic stroke. In hemorrhagic stroke, the difference with non-hemorrhagic stroke is decreased consciousness, severe headache, nausea and vomiting, while in non-hemorrhagic stroke the difference with hemorrhagic stroke is sudden difficulty in speaking / slurred, headache, blurred vision / unclear. Signs and symptoms in patients with Hemorrhagic Stroke and Non-Hemorrhagic Stroke have some similarities, namely having the same weakness in moving the right extremity and weakness in moving the left extremity.

The signs and symptoms that can occur in stroke patients include experiencing sudden weakness or numbness which usually occurs in the arms or legs, and also usually occurs in half of the body or one side of the body, has difficulty speaking or understanding when spoken to, has difficulty seeing things with one eye or both eyes, has difficulty walking, feels dizzy in the head, often experience severe headaches and the exact cause is unknown, and also usually experience loss of consciousness (Simatupang & Samaria, 2019).

CONCLUSIONS
Nurses in establishing a nursing diagnosis are appropriate based on the SDKI and only a small proportion of nurses are still in establishing a nursing diagnosis that is not appropriate based on the SDKI.

REFERENCES

Bertocchi, L., Dante, A., La Cerra, C., Masotta, V., Marcotullio, A., Caponnetto, V., Ferraiuolo, F., Jones, D., Lancia, L., & Petrucci, C. (2024). Nursing Diagnosis Accuracy in Nursing Education: Clinical Decision Support System Compared With Paper-Based Documentation - A Before and After Study. *CIN - Computers Informatics Nursing*, 42(1), 44–52. https://doi.org/10.1097/CIN.0000000000001066

Company-Sancho, M. C., Estupinan-Ramirez, M., Sanchez-Janariz, H., & Tristancho-Ajamil, R. (2017). Relacion entre diagnósticos de enfermería y uso de recursos sanitarios. *Enfermería Clínica*, 27(4), 214–221. https://doi.org/10.1016/j.enfcli.2017.04.002

Duarte-Climents, G., Mauricio, T. F., Gomez-Salgado, J., Moreira, R. P., Romero-Martin, M., & Sanchez-Gomez, M. B. (2021). Assessment of cardiovascular risk factors in young adults through the nursing diagnosis: A cross-sectional study among international university students. Healthcare (Switzerland), 9(1), 1–14. https://doi.org/10.3390/healthcare9010091

Kim, T. Y., Coenen, A., & Hardiker, N. (2012). Semantic mappings and locality of nursing diagnostic concepts in UMLS. *Journal of Biomedical Informatics*, 45(1), 93–100. https://doi.org/10.1016/J.JBI.2011.09.002

Oliveira-Kumakura, A. R. de S., Sousa, C. M. F. M., Biscaro, J. A., Silva, K. C. R. da, Silva, J. L. G., Morais, S. C. R. V., & Lopes, M. V. de O. (2021). Clinical Validation of Nursing Diagnoses Related to Self-Care Deficits in Patients with Stroke. *Clinical Nursing Research*, 30(4), 494–501. https://doi.org/10.1177/1054773819883352

Patricia, H., Kembuan, M. A. H. N., & Tumboimbela, M. J. (2015). Karakteristik Penderita Stroke Iskemik Yang Di Rawat Inap Di Rsup Prof. Dr. R. D. Kandou Manado Tahun 2012-2013. *E-CliniC*, 3(1). https://doi.org/10.35790/ecl.3.1.2015.7402

Puspita, M. R., & Putro, G. (2008). Hubungan Gaya Hidup terhadap Kejadian Stroke di Rumah Sakit Umum daerah Gambiran Kediri. *Buletin Penelitian Sistem Kesehatan*, 11(3), 263–269.

Rofii, M., Warsito, B. E., Santoso, A., & Ulliya, S. (2018). Diagnosa Keperawatan yang Sering Ditegakkan Perawat Pada Pasien Tuberkulosis Paru di Rumah Sakit. *Jurnal Kepemimpinan Dan Manajemen Keperawatan*, 1(2), 1. https://doi.org/10.32584/jkmk.v1i2.139

Selvia, D. (2015). Batasan Karakteristik Dan Faktor Yang Berhubungan (Etiologi) Diagnosa Keperawatan: Hambatan Mobilitas Fisik Pada Pasien Stroke. Universitas Lambung Mangkurat, 3(1).

Simatupang, D. R., & Samaria, D. (2019). Kajian Literatur: Hubungan Antara Tingkat Pengetahuan Tanda Awal Gejala Stroke Dengan Keputusan Mencari Bantuan Kesehatan Pada Individu Dengan Risiko Stroke. *Jurnal Keperawatan Widya Gantari Indonesia*, 3(1). https://doi.org/10.52020/jkwgi.v3i1.1082

Suryono, & Nugroho, C. (2020). Kompetensi Perawat Mendokumentasikan Diagnosis Keperawatan Berdasarkan Standar Diagnosis Keperawatan Indonesia (SDKI). *Jurnal ILKES (Jurnal Ilmu Kesehatan)*, 11(1), 233–238. https://doi.org/10.35966/ilkes.v11i1.168

Tim Pokja SDKI DPP PPNI. (2017). Standar Diagnosis Keperawatan Indonesia Definisi dan Indikator Diagnostik, Edisi 1. Jakarta: Dewan Pengurus PPNI. 53(9).

Toral, L. (2021). BE FAST to recognize stroke. *Nursing2025*, 51(2). https://journals.lww.com/nursing/fulltext/2021/02000/be_fast_to_recognize_stroke.13.aspx

Zakel, J., Chae, J., & Wilson, R. D. (2024). Innovations in Stroke Recovery and Rehabilitation: Poststroke Pain. *Physical Medicine and Rehabilitation Clinics of North America*, 35(2), 445–462. https://doi.org/https://doi.org/10.1016/j.pmr.2023.06.027

Zhao, Y., Xu, Y., Ma, D., Fang, S., Zhi, S., He, M., Zhu, X., Dong, Y., Song, D. P., Yiming, A., & Sun, J. (2024). The impact of education/training on nurses caring for patients with stroke: a scoping review. *BMC Nursing*, 23(1), 1–18. https://doi.org/10.1186/s12912-024-01754-x