# Nursing Care For Patients With Stroke Victims: An Integrative Review

Lorena Caroline Da Silva Neves[1], Milena Pereira Da Silva[1],
Samuel Etor Aragão Pereira Dos Santos[1],
Cássia Ellen Dos Santos Avelino Leal[1], Irene Suellen Araújo Dourado[1],
Maria Carolina Gomes Lima[1], Maria Vitória Rocha Félix[1],
Mariany Sousa Esteves[1], Nayla Marielly Lopes Do Nascimento[1],
Maria Nauside Pessoa Da Silva[2]

[1] *(Department Of Health / Mauricio De Nassau University Center Teresina South, Brazil )*
[2] *(Teacher At The Department Of Health / Mauricio De Nassau University Center Teresina South Brazil )*

***Abstract***
*The study aims to analyze the nursing care offered to patients who have suffered a stroke; identify the main risk factors and forms of prevention; describe the main conducts adopted by the nursing team to patients suffering from a stroke. As a method, it is characterized as an integrative literature review study. The search was carried out during the months of July and August 2024, in the databases: Medical Literature Analysis and Retrieval Online System (Medline), Latin American and Caribbean Literature in Health Sciences ( Lilacs ), Scientific Electronic Library Online (SciELO), Nursing Database (BDENF), National Library of Medicine (NLM/ PubMed ) and ScienceDirect . Using the combination of descriptors contained in the Health Sciences Descriptors ( DeCS ), the following descriptors were used in English, Portuguese and Spanish: "Stroke Vascular Accident" AND "Nursing Care" AND "Cerebrovascular Accident" in conjunction with the Boolean operator OR. Ten articles were selected. As a result, three categories were highlighted according to thematic similarity: Stroke (CVA) and risk factors; nursing care offered to patients who are victims of Stroke and the conduct adopted by the nursing team in the care of patients with Stroke. Finally, it is of great relevance to highlight the assistance to patients affected by Stroke, thus emphasizing that the nursing area is composed of professionals dedicated to offering assistance and care that aim at both the prevention of the disease, treatment, cure, and the rehabilitation of patients, providing quality assistance, applying conducts based on scientific knowledge.*
***Keywords:*** *Stroke; Nursing Care; Cerebrovascular Accident*

---------------------------------------------------------------------------------------------------------------------------
---------------------------------------------------------------------------------------------------------------------------

## I.    Introduction

Stroke occurs when blood vessels that carry blood to the brain become blocked or rupture, causing paralysis of the brain area that has lost blood circulation. Stroke can be classified as ischemic or hemorrhagic. Ischemic stroke occurs when an artery is blocked, preventing oxygen from reaching brain cells. Hemorrhagic stroke occurs when a spontaneous blood vessel in the brain ruptures, causing hemorrhage. The hemorrhage can be either intracerebral or in the subarachnoid space. Intracranial hemorrhagic stroke has the worst prognosis and the highest mortality rate (Costa et al 2016).

Stroke is the second leading cause of death worldwide (approximately 11% of total deaths). There has been a reduction in the incidence, prevalence and mortality of stroke globally, but an increase in the prevalence rates of the disease in people under 70 years of age (~22%); the stroke mortality rate in poor and developing countries is 3.6 times higher than in rich countries (Brazilian Stroke Society, 2023).

Approximately 80% of stroke cases could be prevented by controlling risk factors and changing lifestyle habits. Stroke prevention is mainly achieved by managing and controlling risk factors, the main ones being: hypertension, diabetes, obesity, dyslipidemia, smoking, diet, physical inactivity, atrial fibrillation, carotid stenosis, sickle cell anemia, among others. Since patients who have had their first stroke are at greater risk of having another occurrence, it is necessary to seek the cause of the stroke in order to avoid a new occurrence, adopting preventive measures. In other words, if the patient who has suffered their first stroke is a smoker, they should immediately stop smoking (PINNO et al, 2014).

The signs and symptoms depend on the affected cerebral hemisphere. When it occurs in the left hemisphere, there are signs such as conjugate gaze deviation to the left, sensory loss to the right, right hemiparesis,

and right hemianopsia. When the affected hemisphere is the right, there are signs such as conjugate gaze deviation to the right, left hemianopsia, left hemiparesis, and sensory loss to the left. It can also affect the brainstem, causing nausea and/or vomiting, diplopia, conjugate gaze deviation, gaze paresis, dysarthria/dysphagia, vertigo, hemiparesis or quadriparesis , sensory loss in one half of the body or all four limbs, decreased level of consciousness, and abnormal breathing; and in the cerebellum, causing gait ataxia and appendicular ataxia. Sudden and intense headache, nausea, vomiting, and decreased level of consciousness indicate hemorrhagic stroke (Moita et al, 2021).

Nursing care is present in all phases of care, from the recognition of signs and symptoms that indicate stroke to the rehabilitation of this patient. To provide nursing care to this type of patient, it is essential to know the signs and symptoms that indicate clinical worsening, in addition to constant monitoring, control of risk factors and possible complications such as pressure injury, venous thromboembolism and constipation. Care for patients who have suffered a stroke is multidisciplinary and is the responsibility of doctors, physiotherapists, nurses, nutritionists, psychologists and others, in order to offer a better possibility of health and quality of life after a stroke (Ribeiro et al, 2021).

Therefore, the purpose of this research is to reflect on the importance of implementing Nursing Care for hospitalized patients who have suffered a stroke. Thus, the guiding question of the research is: How is Nursing Care provided to patients affected by stroke? To answer this question, the following objectives were listed: to analyze the nursing care offered to patients who have suffered a stroke; to identify the main risk factors and forms of prevention; and to describe the main conducts adopted by the nursing team to patients with Stroke (CVA).

## II.    Material And Method

This is an integrative literature review study that allows data to be collected from bibliographic sources and analyzed in order to synthesize knowledge on a given topic. The integrative literature review is a research methodology that focuses on gathering results from primary studies. The literature review is part of evidence-based practice (EBP), an approach that uses scientific evidence as a basis for clinical practice (Souza; Silva; Carvalho, 2010).

The research question was formulated based on the PICo strategy , which consists of: P: Population - Nurse, I: Interest - Nursing care, Context: - Stroke. Therefore, the delimited research question is: How is Nursing Care provided to patients affected by stroke?

To select the articles, a search was carried out in the following databases during the months of July and August 2024: Medical Literature Analysis and Retrieval Online System (Medline), Latin American and Caribbean Literature in Health Sciences (Lilacs ), Scientific Electronic Library Online (SciELO), Nursing Database (BDENF), National Library of Medicine (NLM/ PubMed ) and ScienceDirect . Using the combination of descriptors contained in the Health Sciences Descriptors (DeCS ), the following descriptors were used in English, Portuguese and Spanish: Stroke AND "Nursing Care" AND "Cerebrovascular Accident" in conjunction with the Boolean operator OR.

Ten articles were selected that referred to the proposed theme, published in Portuguese, English, and Spanish, within the time frame of the last four years , and duplicate articles in the selected databases or that did not refer to the study theme were excluded.

## III.    Results

In this integrative review, ten articles that met the established eligibility criteria were analyzed. They were organized into a table containing databases, authors and year, titles, methodology and results.

**Table 01. Summary of articles selected for research. Teresina (PI), Brazil, 2024**

| Databases | Authors/ year | Titles | Methodology | Results |
|---|---|---|---|---|
| BDENF/ LILACS | Souza et al, 2021 | Perception of post-stroke patients on case management conducted by nurses | Descriptive qualitative research | Case management was perceived by participants as a health-promoting tool capable of increasing treatment adherence. |
| PubMed | Rao et al, 2022 | Deep Transfer Learning for Automatic Prediction of Hemorrhagic Stroke on CT Images | Retrospective study | The proposed model outperforms previous models for classification by a detectable margin with 99.6% accuracy. |
| BDENF/ LILACS | Souza et al, 2022 | Case management for people with stroke: a quasi-experimental study | Quasi-experimental study | Case management led by a nurse is a valid strategy for monitoring people in stroke recovery. |
| LILACS | Zhai et al, 2022 | Nursing influences on motor function recovery | Experimental object | Exercise rehabilitation can improve lower limb mobility and quality of |

| | | | | |
|---|---|---|---|---|
| | | in patients on post stroke hemiplegia | | life in post-stroke hemiplegic patients. |
| PubMed | Ohashi et al, 2023 | Role of Inflammatory Processes in Hemorrhagic Stroke | Revision | amyloid angiopathy , intracerebral hemorrhage, and subarachnoid hemorrhage share central nervous system inflammation, which can either aid recovery or aggravate the condition. Understanding inflammatory mechanisms is essential to developing effective treatments and improving patient outcomes. |
| Science Direct | Sanjuan et al, 2023 | Management of acute stroke. Specific nursing care and treatments in the stroke unit | Revision | Recommendations for acute stroke treatment are based on limited evidence, requiring further research and studies with multidisciplinary collaboration to improve nursing interventions. |
| MEDLINE | Fors et al, 2024 | Experiences of chain of care and rehabilitation after stroke: a qualitative study of persons discharged to skilled nursing facilities before returning home. | Semi-structured qualitative interview design | Support and rehabilitation of stroke survivors after discharge should include goal setting, ongoing information, and personalized care, with home monitoring and coordination between institutions for an effective transition. |
| SCIELO | Fochesatto et al, 2024 | Nursing competencies in the care of patients with stroke who are eligible for thrombolytic therapy . | Integrative literature review | The nurse's skills in caring for stroke patients eligible for thrombolytic therapy involve three main areas: assistance, management and education. |
| SCIELO | Çaka , Fahri et al, 2024 | Aortic Arch Calcification Seen on Chest Radiograph May Serve as an Independent Predictor of Stroke Recurrent Cerebral | Prospective cohort study | Recurrent stroke is an important cause of morbidity and mortality, aortic arch calcification is an important clinical marker of vascular disease burden, aortic arch calcification on chest radiography chest may be a key factor in strokes recurrent cerebral palsy. |
| SCIELO | Magagnin , AB et al 2024 | Attention Primary Health Care in transition of care for people with stroke | Clinical case study | The high demand of teams and the Social Determinants of Health conditions interfere with adequate continuity of care. Transitional care programs are recommended to enable continuity of care. |

Source: organized by the author, 2024

The results obtained in the studies in an analytical synthesis, highlighted three categories according to thematic similarity: Stroke and risk factors; nursing care offered to patients who are victims of Stroke and the conduct adopted by the nursing team in caring for patients with Stroke.

**Stroke and risk factors**
Stroke is a health condition of significant global importance, characterized by its high frequency and significant costs associated with hospitalization and rehabilitation, especially in developing countries. In Brazil, stroke has a strong economic and social impact, being the main cause of death and disability. A national study revealed an annual incidence of 108 cases of stroke per 100,000 inhabitants, with a mortality rate of 18.5% in the first 30 days and 30.9% in the first year after the event, in addition to a recurrence rate of 15.9%. In cases of stroke recurrence, the risk of death varies between 23% and 41% in the first 30 days, and the risk of disability ranges between 39% and 53% (Souza *et al*, 2022).

Systemic Arterial Hypertension (SAH), along with other Chronic Noncommunicable Diseases (NCDs), such as diabetes mellitus (DM), heart disease and dyslipidemia, is a significant risk factor for the development of Stroke, as it contributes to the process of arteriosclerosis. In addition, behavioral factors, such as overweight, obesity, sedentary lifestyle, smoking, alcohol consumption and use of oral contraceptives, also negatively influence SAH. Recognizing and addressing these risk factors is essential for the effective prevention of SAH and, consequently, of stroke, which can result in better prevention strategies and reduced mortality and disabilities (Souza *et al*, 2021).

Advances in medicine and new emergency care strategies in Brazil have led to a decrease in the mortality rate from stroke, as indicated by epidemiological data. However, despite the survival of many patients due to

emergency treatment, approximately 50% of them face varying degrees of physical dysfunction later on, which significantly compromises their quality of life. In addition to physical difficulties, these patients often face neurocognitive, psychosocial and behavioral sequelae, which require prolonged rehabilitation (Zhai *et al*, 2023).

Receiving comprehensive care in a specialized stroke unit is extremely beneficial. Rehabilitation usually begins in this unit and aims to improve the functioning, participation, and well-being of patients who have suffered a stroke. The rehabilitation process combines different approaches, such as training, symptom elimination, and compensation. Training aims to improve specific activities or functions, while symptom elimination may require medical treatment, and compensation involves adapting to a disability. There is a temporary window of neuroplasticity during which training has its greatest impact on improving function (Fors *et al*, 2024).

**Stroke Classifications**

Stroke can be classified according to its etiology as ischemic (ischemic stroke) or hemorrhagic (ischemic stroke). Ischemic stroke occurs when blood flow to the brain parenchyma is interrupted due to the occlusion of a vessel. On the other hand, ischemic stroke occurs when a blood vessel ruptures, and depending on the location of the bleeding, it can be classified as intracerebral hemorrhage or subarachnoid hemorrhage (Rao *et al*, 2022).

Intracerebral hemorrhage (ICH) results from bleeding in the brain, and one of the main causes in the elderly is cerebral amyloid angiopathy . This type of stroke is the least treatable and the most lethal. It has a significant impact on the quality of life of survivors, as data indicate that only 20% of ICH survivors regain their functional independence after six months, in addition to presenting high rates of cognitive decline ( Ohashi *et al*, 2023).

Subarachnoid hemorrhage (SAH) occurs due to bleeding into the subarachnoid space, the most common cause being a ruptured aneurysm. This condition has a mortality rate of between 20% and 40%, in addition to a high rate of disability among survivors. Unfavorable outcomes are generally associated with two pathophysiological processes that arise after SAH: early brain injury (EBI), which occurs up to 48 hours after the event, and delayed cerebral ischemia (DCI). Both EBI and DCI are linked to neuroinflammation , and EBI can trigger a secondary inflammatory phase, predisposing to DCI (Ohashi *et al*, 2023).

**Nursing care for patients suffering from stroke**

Rapid and efficient recognition of stroke symptoms by prehospital services is essential in patient management. The stroke code protocol aims to ensure rapid access to reperfusion therapy. There are several validated tools that help in the detection and assessment of stroke severity in the prehospital setting. The Cincinnati Scale is a rapid method for assessing three signs of stroke: facial asymmetry, arm weakness, and speech abnormality. The Rapid Arterial Occlusion Assessment (RACE) is highly sensitive for identifying large vessel occlusions, especially with scores above 4, indicating eligibility for endovascular treatment (Sanjuan *et al*, 2023).

In this context, the nurse plays a categorical role in recognizing the signs of stroke, ensuring that the patient is referred for the most appropriate treatment and maintaining their safety by anticipating their needs. The nurse is responsible for organizing and implementing nursing care, from history taking, nursing diagnosis and care planning to the execution and evaluation of each patient's treatment (Fochesatto *et al*, 2024).

In patients with stroke, care is based on protocols to prevent and detect complications early, offering appropriate treatment. Monitoring blood pressure is essential, since hypertension is common due to the stroke itself, stress, pain, previous hypertension and responses to hypoxia. Controlling blood pressure helps to reduce cerebral edema and the risk of hemorrhagic transformation, but it is important to avoid an excessive drop, which can compromise perfusion in the penumbra area and increase ischemia (Sanjuan *et al*, 2023).

In the first few days after a stroke, many patients present with fever, hyperglycemia, and dysphagia, factors that increase the risk of complications and mortality. Fever, especially in the first 24 hours, doubles the risk of early death and should be treated quickly, with the identification of possible infections. The nursing team must be vigilant to prevent infections and maintain strict control of blood glucose, promptly correcting hypoglycemia, which can simulate a stroke , and controlling hyperglycemia, which worsens the prognosis. Dysphagia is common and should be detected early to avoid aspiration and ensure adequate nutrition. And in patients who have undergone endovascular procedures , it is essential to monitor the puncture site to prevent complications (Sanjuan *et al*, 2023).

**Conduct Adopted by the Nursing Team in Caring for Patients with Stroke**

The conducts adopted according to the nurse's competencies in the care of stroke patients eligible for thrombolytic therapy are aimed at care management, assistance and education. Regarding care management conducts, they include facilitating communication between the multidisciplinary team, implementing a standardized workflow and conducting a stroke protocol/flow. Regarding patient care conducts, they include monitoring vital signs, assessing/monitoring neurological status, obtaining intravenous access, collecting laboratory tests, performing an electrocardiogram, performing appropriate transfer of care when transferring the

patient, observing signs of bleeding, obtaining the patient's health history and reviewing previous hospitalizations, hemodynamic monitoring, observing side effects of medications, among others. Regarding the nurse's competencies in education at work, it is responsible for providing training on thrombolytic therapy, having knowledge about thrombolytic therapy, its risks, benefits and eligibility criteria, providing health education to patients and family members, and others (Fochesatto, Michele Marcon et al, 2024).

The perspectives of nursing performance in health promotion in a hospital context are relevant to multidisciplinary work in the Unified Health System, with a view to the Stroke Care Line and care in the Health Care Network. The understanding of health management regarding the evaluation of the results of established flows, encouraging articulation between the points of the Health Care Network, based on the creation of public policies to reduce mortality from stroke and to coordinate care after discharge in Primary Health Care, on the possibility of transitional care programs that enable continuity of care without gaps between points of the health care network, in addition, continuing education is necessary to train nursing teams for assistance, enabling the transition of care (Magagnin AB et al, 2024).

Regarding nursing care in the Stroke Unit, there should be nurses specialized in stroke care, ideally in a ratio of one nurse for every two beds, when it is semi-intensive care, according to the European Stroke Organization. Care focuses on managing the patient according to pre-established protocols, aiming to prevent complications, identify them as quickly as possible and provide specific care or treatments. Essential care includes monitoring blood pressure, stress, pain, pre-existing hypertension and physiological responses to hypoxia. Normalizing blood pressure in the stroke unit reduces cerebral edema and the risk of hemorrhagic transformation. Due to the potential risk of hemorrhagic transformation associated with arterial hypertension, the vital signs of patients receiving reperfusion therapy should be monitored frequently to avoid harm to the patient's health (Sanjuan et al, 2023).

## IV. Conclusion

Stroke is a universally important clinical health condition, with high frequency and morbidity and mortality rates, high costs both in hospitalization and rehabilitation. It presents several risk factors, such as Systemic Arterial Hypertension (SAH), other Chronic Noncommunicable Diseases (NCDs), such as diabetes mellitus (DM), heart disease and dyslipidemia, in addition to behavioral factors, such as overweight, obesity, sedentary lifestyle, smoking, alcohol consumption and use of oral contraceptives and several others.

Regarding nursing care for stroke victims, nurses play a fundamental role in recognizing signs of stroke, enabling patients to be referred for specialized treatment more quickly and appropriately, while maintaining safety and the likelihood of providing care in specialized healthcare settings for the earliest possible diagnosis, minimizing clinical complications and the risk of death. Nurses are responsible for organizing and implementing nursing care, from data collection, preparation of nursing diagnoses and care planning to the implementation and evaluation of each patient's treatment.

In conclusion, the procedures adopted by the nursing team in the care of patients with stroke are as diverse as possible, following the technical skills of each team member. Thus, care includes monitoring vital signs, assessing/monitoring neurological status, obtaining intravenous access, collecting laboratory tests, performing an electrocardiogram, observing signs of bleeding, hemodynamic monitoring, observing side effects of medications, among others. Nurses have the extremely important role in education at work, such as conducting team training on thrombolytic therapy, promoting adequate and individualized care for each patient, providing health guidance and care to patients and family members.