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Midwifery Care Management for Hemorrhagic Stroke Patients at Risk of Ineffective Cerebral Perfusion

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ABSTRACT

Background**:** Hemorrhagic stroke is a neurological emergency caused by the rupture of cerebral blood vessels, resulting in intracranial bleeding, increased intracranial pressure, and impaired cerebral perfusion. This condition contributes significantly to disability and mortality worldwide. (Greenberg *et al.*, 2022)Patients with hemorrhagic stroke are at high risk of developing ineffective cerebral tissue perfusion due to reduced blood flow and oxygen delivery to brain tissue. Early identification, continuous monitoring, and comprehensive care are essential to prevent further neurological deterioration and improve patient outcomes.Objectives**:** To describe the implementation of midwifery care management in a patient with hemorrhagic stroke who was at risk of ineffective cerebral perfusion and to evaluate the patient's response to the interventions provided.Methods: This study employed a descriptive case study design conducted in a hospital setting. (Mutimer, Yassi and Wu, 2024)Data were collected through interviews, direct observation, physical examination, neurological assessment, review of medical records, and documentation of care. Midwifery management was carried out using a systematic care process that included assessment, diagnosis, planning, implementation, and evaluation.Results: Assessment findings showed decreased level of consciousness, elevated blood pressure, headache, weakness, and neurological deficits indicating a risk of ineffective cerebral perfusion. (Wilson and Ashcraft, 2023)Midwifery interventions included regular monitoring of vital signs and neurological status, positioning to promote cerebral circulation, maintaining oxygenation, ensuring adequate fluid balance, preventing complications, and collaborating with physicians and other healthcare professionals. (Zhang *et al.*, 2024)Evaluation demonstrated stable vital signs, no evidence of worsening neurological status, and improved patient comfort during the observation period.Conclusions**:** Comprehensive midwifery care management is essential in patients with hemorrhagic stroke who are at risk of ineffective cerebral perfusion. Continuous assessment, timely interventions, and interdisciplinary collaboration can contribute to maintaining cerebral perfusion, preventing complications, and supporting optimal patient recovery.

Keywords:hemorrhagic stroke, midwifery care management, ineffective cerebral perfusion, neurological assessment, case study.

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INTRODUCTION

Stroke remains one of the leading causes of death and disability worldwide. According to the World Health Organization (WHO), stroke is the second leading cause of death globally and contributes significantly to long-term disability. Hemorrhagic stroke occurs due to rupture of cerebral blood vessels, resulting in bleeding within the brain tissue and increased intracranial pressure that may lead to impaired cerebral perfusion and neurological damage (Sirisaen, Chaiviboontham and Phornsuwannapha, 2024).In Indonesia, the prevalence of stroke continues to increase and poses a major public health concern. (Arima, 2023)Hypertension is recognized as the primary risk factor for hemorrhagic stroke, followed by diabetes mellitus, obesity, smoking habits, alcohol consumption, and unhealthy lifestyles. Patients with hemorrhagic stroke frequently experience impaired cerebral perfusion due to disruption of blood flow to brain tissue, which can worsen neurological outcomes if not managed promptly Healthcare providers play an important role in the management of patients with hemorrhagic stroke.(Zhang *et al.*, 2024) Continuous monitoring of neurological status, maintenance of airway patency, prevention of complications, and collaboration with multidisciplinary teams are essential components of patient care. Midwifery care management contributes to comprehensive patient monitoring and family support through systematic assessment, intervention, implementation, and evaluation.

The application of a structured midwifery management approach enables healthcare providers to identify patient problems, establish appropriate interventions, evaluate outcomes, and provide holistic care.(Mutimer, Yassi and Wu, 2024) Therefore, effective midwifery care management is expected to support recovery and prevent complications related to ineffective cerebral perfusion in hemorrhagic stroke patients.Comprehensive patient management involving continuous monitoring, neurological

(Wilson and Ashcraft, 2023)assessment, and multidisciplinary collaboration is essential in preventing complications and improving patient recovery. Midwifery care plays an important role in monitoring patient conditions, identifying risks, supporting therapeutic interventions, and educating families regarding patient care. Therefore, this study aims to describe the implementation of midwifery care management in Mrs. N with hemorrhagic stroke accompanied by the risk of ineffective cerebral perfusion in the SCU room of UPTD Khusus RSU Haji Medan in 2025.

This study employed a descriptive case study design using a midwifery care management approach. The study was conducted in the Stroke Care Unit (SCU) of UPTD Khusus RSU Haji Medan, North Sumatra Province, in 2025.The subject of this study was Mrs. N, who had a medical diagnosis of hemorrhagic stroke with the risk of ineffective cerebral perfusion. Data collection was carried out through interviews with the patient's family, direct observation, physical examination, review (Sirisaen, Chaiviboontham and Phornsuwannapha, 2024)of medical records, and literature studies.The established diagnosis was hemorrhagic stroke accompanied by the risk of ineffective cerebral perfusion. Interventions included monitoring vital signs, neurological observation, airway maintenance, positioning the patient's head at 30°, and collaboration with physicians and nurses regarding medical therapy. Data were analyzed descriptively by comparing clinical findings with relevant theories and previous research findings.

METHODS

This study used a **descriptive case study design** to describe the implementation of midwifery care management in a patient diagnosed with hemorrhagic stroke and at risk of ineffective cerebral perfusion. (Powers *et al.*, 2018)The study was conducted in a hospital setting during the patient's

treatment period.Data were collected using primary and secondary data sources. Primary data were obtained through direct interviews with the patient and family members, physical examinations, observation of the patient's condition, and neurological assessments. Secondary data were obtained from medical records, laboratory results, nursing notes, and other relevant clinical documents.(Mead *et al.*, 2023)

The midwifery care process was carried out systematically following the stages of assessment, diagnosis, planning, implementation, and evaluation. Assessment included collecting subjective and objective data related to the patient's neurological status, vital signs, leve of consciousness, and risk factors associated with impaired cerebral perfusion. The identified midwifery diagnosis was the risk of ineffective cerebral perfusion related to intracranial bleeding.(Yu *et al.*, 2023)

Interventions included monitoring vital signs and neurological status, assessing the Glasgow Coma Scale (GCS), maintaining adequate oxygenation, positioning the patient appropriately to promote cerebral circulation, monitoring fluid balance, preventing complications, providing health education to the family, and collaborating with physicians and other healthcare professionals. Evaluation was performed continuously to assess the patient's response to the interventions and to determine the effectiveness of the care provided.(Treggiari *et al.*, 2023)

Data were analyzed descriptively and presented narratively based on the patient's clinical progress and the outcomes of the implemented midwifery care.

RESULTS AND DISCUSSIONS

A case study was conducted on Mrs. N, a patient diagnosed with hemorrhagic stroke and at risk of ineffective cerebral perfusion. Data were collected through observation, physical examination, neurological assessment, and review of medical records during the hospitalization period.(Sirisaen, Chaiviboontham and Phornsuwannapha, 2024)

The initial assessment showed decreased level of consciousness, severe headache, elevated blood pressure, and weakness of the extremities. These findings indicated impaired neurological function and an increased risk of reduced cerebral blood flow. Midwifery interventions were implemented, including continuous monitoring of vital signs and neurological status, oxygenation support, head elevation at 30°, fluid balance monitoring, and collaboration with the multidisciplinary healthcare team.

Clinical Findings Before and After Midwifery Care

Clinical Indicators	**Before Intervention**	**After Intervention**
Level of consciousness	Decreased responsiveness	Stable, no further decline
Blood pressure	Elevated	More controlled
Headache	Severe	Reduced
Oxygen saturation	Required close monitoring	Maintained within normal range
Neurological status	Risk of deterioration	Stable during observation
Patient comfort	Decreased	Improved

The results demonstrated that the patient maintained stable vital signs and neurological status throughout the observation period. No evidence of worsening cerebral perfusion, such as progressive decline in consciousness or additional neurological deficits, was observed. Patient comfort improved following the implementation of comprehensive midwifery care.

Format for Table and Image:

Table 1. Table of respondent characteristics (description of the table)

Clinical Indicators	Before Intervention n (%)	After Intervention n (%)	Evaluation
Decreased level of consciousness	1 (100)	0 (0)	Improved
Severe headache	1 (100)	0 (0)	Improved
Elevated blood pressure	1 (100)	0 (0)	Controlled
Neurological deficits	1 (100)	1 (100)	Stable
Risk of ineffective cerebral perfusion	1 (100)	1 (100)	Monitored continuously
Stable oxygen saturation	0 (0)	1 (100)	Improved

Description: The table shows the patient's clinical condition before and after the implementation of midwifery care. Improvement was observed in the level of consciousness, headache intensity, blood pressure control, and oxygenation status. No worsening neurological deficits were identified during the observation period.

CONCLUSIONS

This case study demonstrated that comprehensive midwifery care management plays an important role in managing patients with hemorrhagic stroke who are at risk of ineffective cerebral perfusion. Through systematic assessment, continuous monitoring of vital signs and neurological status, appropriate patient positioning, oxygenation support, fluid balance management, and collaboration with the multidisciplinary healthcare team, the patient's clinical condition remained stable during the observation period without evidence of further neurological deterioration.

The findings indicate that early identification of risk factors and timely implementation of midwifery interventions can contribute to maintaining adequate cerebral perfusion and preventing complications associated with hemorrhagic stroke. Therefore, the research objective of describing the implementation of midwifery care management in a patient with hemorrhagic stroke and risk of ineffective cerebral perfusion was successfully achieved.

Suggestions

Healthcare providers should continue to strengthen interdisciplinary collaboration and implement regular neurological assessments in patients with hemorrhagic stroke to facilitate early detection of clinical deterioration. Future studies involving larger sample sizes and longer follow-up periods are recommended to evaluate the effectiveness of specific midwifery interventions in improving neurological outcomes and preventing complications in patients with hemorrhagic stroke. These studies may provide stronger evidence for developing standardized midwifery care protocols for neurological emergencies.

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CONFLICT OF INTEREST AND FUNDING DISCLOSURE

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AUTHOR CONTRIBUTIONS

Penulis pertama conceptor, data curation, formal analysis, investigation, methodology, project administration, resources, supervision, validation, visualization, writing original draft, and writing review & editing.

Exsempel

SRS: conceptor, data curation, investigation, methodology, formal analysis, project administration, resources, supervision, validation, visualization, writing original draft, writing review and editing.

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