

EFFECTIVENESS OF ACTIVE RANGE OF MOTION (ROM) ON INCREASING MUSCLE STRENGTH IN PATIENTS WITH HEMORRHAGIC STROKE AT CHUZAN HOSPITAL OKINAWA JAPAN

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ABSTRACT

The government has implemented a number of initiatives to address health care issues through Health policy decisions. The aim of Health policy is to provide preventive patterns, targeted services to maintain health, treat diseases, and provide Health services to the Community. This study aims to discuss the BPJS Health policy, especially the National Health Insurance Program (JKN) that has been implemented in Indonesia. This research is a system literature review (SLR) research using a qualitative descriptive approach. There are 17 journals sampled in this study. The literature search used various databases, including Pubmed and Google Scholar. The results showed that JKN policy implementation has gone well in several regions and cities by achieving high targets. Although there are still obstacles in its implementation such as lack of facilities, administrative problems, lack of human resources, and lack of public awareness. There are several factors that if not greatly taken into account will affect the success of the policy, namely policy objectives, resources, the nature and attitude of implementers, communication, environment, and facilities.

Keywords: active rom; muscle strength; stroke

INTRODUCTION

Stroke is a major health concern in global health due to its significant impact on the quality of life of those affected. A stroke occurs when blood flow to the brain is suddenly interrupted, resulting in brain cell damage and the loss of certain neurological functions. As a result, sufferers can experience muscle weakness, loss of speech, cognitive impairment, and even death. According to Smeltzer (2013), a stroke is a sudden central nervous system disorder that causes the loss of some brain functions, including impaired movement, speech, and consciousness.

In medical classification, strokes are divided into two main types: ischemic stroke and hemorrhagic stroke. Ischemic strokes occur due to a blockage in a blood vessel in the brain, while hemorrhagic strokes are caused by a ruptured blood vessel that causes bleeding within the brain tissue. Haksara and Putri (2021) explain that hemorrhagic strokes generally have more severe consequences because they not only damage brain tissue but also create additional pressure within the skull. This condition causes more extensive nerve tissue death and can lead to neurological disorders such as complete or partial paralysis, depending on the location and extent of the bleeding.

The burden of stroke in Indonesia is extremely high. According to data from the Indonesian Hospital Association (PDPERSI, 2010), stroke is the leading cause of death across all age groups

in Indonesia, accounting for 15.4 % of all deaths. Each year, approximately 500,000 Indonesians suffer from stroke, and approximately 125,000 of them die. This fact demonstrates that stroke is not only an individual health problem but also has a significant impact on productivity and the economic burden on families and the national healthcare system.

One nursing intervention proven effective in stroke rehabilitation is Range of Motion (ROM) exercises, a form of physical exercise aimed at maintaining or improving the joints' ability to move optimally. ROM is an important part of the early mobilization process, which plays a role in preventing complications due to immobility such as joint stiffness, muscle atrophy, pressure sores, and respiratory tract infections. Rahmawati, Yurida, and Mahdalena (2017) explain that ROM exercises must be tailored to the patient's condition and emphasize patient awareness in performing controlled movements, rather than just the extent of movement.

The timing of ROM exercises is also crucial. Ideally, these exercises should begin as soon as the patient's condition is medically stable. Indrawati et al. (2016) stated that early mobilization, both passive and active, can help prevent further complications such as pneumonia, pressure ulcers, and joint contractures. Active ROM, in this case, is particularly important for hemorrhagic stroke patients who experience decreased motor function in their extremities. Exercises such as moving the legs and arms independently, or with minimal assistance, aim to restore muscle function and increase the patient's strength in carrying out daily activities.

According to Potter and Perry (2005, in Apriyanti, 2014), active ROM plays a role in stimulating motor units involved in body movement, resulting in a gradual increase in muscle strength. By increasing neuromuscular stimulation through active ROM exercises, patients can regain some of their physical abilities. In addition, these exercises also provide systemic benefits, such as improving blood circulation, reducing the risk of urinary tract infections, and accelerating post-stroke recovery. This indicates that active ROM exercises have positive physiological and functional effects on patient conditions.

The goal of ROM exercises is to increase joint flexibility, maintain muscle tone, and improve motor coordination. Beebbe and Lang (2009) state that ROM exercises are also useful for assessing the ability of joints and muscles to perform specific movements, which then forms the basis for designing further rehabilitation programs. Thus, ROM exercises are not only therapeutic but also diagnostic in the context of nursing and physiotherapy.

Based on this background, the authors were interested in conducting research on the effectiveness of active ROM exercises in increasing muscle strength and reducing the risk of contractures in hemorrhagic stroke patients. This research was conducted at Chuzan Hospital, Okinawa, Japan, which has an integrated rehabilitation facility for stroke patients. It is hoped that the results of this study will contribute to the development of more effective, evidence-based nursing interventions in managing stroke patients, particularly in the area of physical mobility.

METHODS

This study used a case study design with a descriptive qualitative approach that aims to describe in depth nursing care in the application of mobilization through *Range of Motion* (ROM) exercises in hemorrhagic stroke patients. The case study was conducted at Chuzan Hospital, Okinawa, Japan,

with a 98-year-old male patient diagnosed with impaired physical mobility due to post-stroke hemiparesis.

Nursing care in this study follows five stages of the nursing process: assessment, establishing a nursing diagnosis, planning interventions, implementing actions, and evaluating nursing care. The study focuses on the application of passive ROM therapy to increase muscle strength and the patient and family's response to understanding and accepting the intervention. Data collection techniques include direct interviews during the assessment phase to obtain subjective data regarding the patient's complaints and medical history, physical observation using a *head-to-toe approach* to assess the overall body condition, and documentation in the form of medical records, patient progress notes, relevant literature, and diagnostic examination results (Saryono, 2013).

The data collection method also included a preliminary study and an initial contract between the nurse and patient to explain the ROM therapy procedures to be administered. The data obtained was presented in narrative and descriptive form and systematically organized according to scientific writing guidelines to ensure the accuracy and integrity of the information presented.

RESULTS AND DISCUSSION

The patient assessment was conducted as part of a case study that took place on March 10, 2025, at 10:00 a.m. at Chuzan Hospital, Okinawa, Japan. The subject of the study was a 35-year-old man with the initials Mr. O, who had been hospitalized since July 11, 2024, with a medical diagnosis of brainstem hemorrhage . Initial information was obtained from medical records and the results of *alloanamesis* with Mrs. K, his wife and the person responsible for the patient. Based on family information, the patient experienced a sudden loss of consciousness while at work, accompanied by swallowing difficulties (*dysphagia*), which is one of the neurological symptoms due to damage to the brainstem area.

The data collection process was conducted in accordance with the research regulations and ethics previously agreed upon between the researcher, the hospital, and the family. During the physical assessment, the patient was fully unconscious and had difficulty communicating verbally. Vital signs showed a blood pressure of 150/96 mmHg, a body temperature of 36.9 ° C, and an oxygen saturation (SpO₂) of 96%. Despite impaired consciousness, the patient exhibited a good sleep pattern. Nutritional intake was administered via a nasogastric tube (NGT) due to significant swallowing difficulties. This information served as the basis for formulating a nursing diagnosis and developing an intervention plan, particularly in providing mobilization support through passive *Range of Motion* (ROM) therapy to prevent complications resulting from prolonged immobility . Furthermore, the assessment results demonstrated the importance of interdisciplinary collaboration between nurses, physiotherapists, and nutritionists in designing holistic care for patients with severe neurological disorders such as brainstem hemorrhage. The role of the family is also a vital component in supporting the recovery process, particularly in terms of decision-making, monitoring the patient's basic needs, and providing emotional support. A patient- and family-centered approach is essential to ensure continuity of care and improve the patient's quality of life during long-term care.

Nursing Diagnosis

Based on a comprehensive assessment of Mr. O at Chuzan Hospital in Okinawa, Japan, three primary nursing problems were identified that were closely related to the neurological condition

resulting from hemorrhagic stroke. Nursing diagnoses were established by referring to a combination of subjective data from the patient's family, objective data from physical observations, and a medical history obtained from the hospital's medical records. Each diagnosis was identified through a structured *problem-etiology-signs/symptoms (PES) approach*:

The first nursing diagnosis established was Impaired physical mobility related to decreased muscle strength (*code D.0143*). This diagnosis was supported by subjective data from the patient's family stating that Mr. O had difficulty moving his limbs. Objective data supported this statement with clinical findings in the form of the patient's body appearing stiff and weak. This condition indicates neuromuscular dysfunction due to damage to the central nervous system, specifically in the brainstem area involved in motor regulation. The patient demonstrated an inability to perform basic motor activities, including lifting the arms or legs, indicating a significant physical mobility deficit. This disorder has the potential to cause additional complications such as joint contractures, pressure ulcers, and muscle atrophy if not immediately addressed through rehabilitation therapy such as *Range of Motion (ROM)* exercises.

The second diagnosis is Impaired verbal communication related to neuromuscular disorders (*code D.0119*), which was determined based on the results of the family *alloanamesis* which stated that the patient had difficulty speaking and was unable to move his mouth normally. Clinical observations showed stiffness in the facial muscles, especially around the lips and mouth, which is a manifestation of damage to the neuromuscular pathways due to bleeding in the brainstem. This communication disorder not only affects the patient's ability to express needs and desires, but can also increase anxiety and social isolation if not addressed with therapeutic approaches such as alternative communication or speech therapy.

The third diagnosis was Gastrointestinal motility dysfunction related to enteral feeding (*code D.0021*), which was established based on information from the patient's wife that Mr. O was unable to eat orally. This was confirmed by direct observation that the patient had a nasogastric tube (NGT) inserted as a nutritional route. The patient's dysphagia is a consequence of damage to the cranial nerves involved in swallowing, which is common in patients with brainstem strokes. This condition not only limits oral nutritional intake but also increases the risk of aspiration and respiratory tract infections, and can impact the patient's nutritional status if not managed properly. Furthermore, this situation also creates a psychological burden for the patient and family, particularly in terms of concerns about the patient's safety and recovery process.

These three nursing diagnoses provide the basis for developing focused and integrated interventions, particularly those aimed at restoring body function, communication, and nutritional support. The nurse's primary focus is facilitating early mobilization through passive range of motion exercises (ROM) to prevent complications of immobility, supporting patient communication through adaptive approaches, and ensuring nutritional needs are met safely . These diagnoses also serve as the basis for determining indicators of care success and evaluating the effectiveness of nursing interventions provided during hospitalization.

Nursing Interventions

Based on the nursing diagnoses established for Mr. O, nursing interventions were designed to address the patient's three main problems, namely impaired physical mobility, impaired verbal

communication, and gastrointestinal motility dysfunction. For the problem of impaired physical mobility related to decreased muscle strength (D.0143), the intervention focused on improving the patient's mobility ability for 3x24 hours. The main objectives to be achieved were an increase in extremity movement, muscle strength, and movement coordination, as well as a decrease in pain, joint stiffness, and physical weakness. The intervention strategies carried out included observing for pain or other physical complaints during the mobilization process, monitoring the patient's general condition before and during mobilization including heart rate and blood pressure, and providing movement facilitation with or without assistive devices. In the educational aspect, the patient and family were given an explanation of the mobilization procedure and taught the importance of early mobilization to accelerate the recovery process.

For the diagnosis of verbal communication disorders related to neuromuscular disorders (D.0119), interventions are directed at improving the patient's verbal communication skills, with targets including improved speaking and listening skills, appropriate facial/body expressions, eye contact, and general communication comprehension. Interventions include observing verbal parameters such as the patient's rate, stress, volume, and diction, as well as monitoring cognitive, anatomical, and physiological conditions that affect speech ability. Nurses are also expected to be able to identify forms of nonverbal communication as substitutes for verbal communication. Therapeutically, nurses use alternative communication methods appropriate to the patient's condition. Education is provided to patients and families regarding the communication process and barriers caused by neurological disorders, as well as techniques for speaking slowly. Although direct collaboration is not required in this intervention, a humanistic approach is essential for patients to feel understood and supported during their recovery.

Meanwhile, for the diagnosis of gastrointestinal motility dysfunction related to enteral feeding (D.0021), nursing interventions aim to improve gastrointestinal function and maintain the patient's fluid balance. The target outcomes are a reduction in abdominal pain, cramps, and vomiting; improvement in peristalsis and gastric emptying; and the achievement of fluid balance through increased fluid intake, food intake, and urine production, as well as stabilization of blood pressure and pulse rate. In practice, nurses closely monitor the rate of feeding through the enteral pump, periodically evaluating for nausea, vomiting, and gastric residue. Defecation patterns are also evaluated every 4–8 hours to detect early disorders. The application of aseptic technique when administering feeding via a nasogastric tube (NGT) is emphasized to prevent infectious complications, by maintaining the head of the bed at a 30–45 degree angle to prevent aspiration. Education is provided to the patient's family regarding the enteral feeding procedure and its objectives. In addition, nurses collaborate with nutritionists to determine the appropriate type and amount of enteral feeding according to the patient's medical condition.

Interprofessional collaboration is crucial to the success of the nursing interventions provided to Mr. O. In addition to the nutritionist responsible for managing enteral feeding, the involvement of a physiotherapist is also necessary to support the progressive improvement of the patient's mobility. This collaboration aims to ensure that the intervention plan is synergistic and targeted, tailored to the patient's clinical condition and needs. Thus, the interventions are not only therapeutic but also rehabilitative and educational, ensuring the patient's quality of life holistically.

Evaluation of the effectiveness of nursing interventions is conducted periodically, both through monitoring vital signs and the achievement of short-term and long-term goal indicators. For example, increased muscle strength and decreased pain are indicators of success in mobility, while the patient's ability to verbally communicate needs is an indicator of communication. Evaluation is also conducted through patient and family responses to interventions, as well as systematic daily recording of clinical progress.

As a form of continuity of care, it is important to develop a post-hospitalization follow-up plan, especially if the patient will undergo further rehabilitation at home or another healthcare facility. Continued education for the family regarding daily care, the use of assistive devices, warning signs, and the importance of regular check-ups is highly recommended. This aims to prevent relapse or further complications and ensure optimal ongoing recovery.

Nursing Implementation

Nursing implementation is the direct implementation stage of previously planned interventions, both directly and indirectly, to the patient. Implementation is carried out in a coordinated and integrated manner according to the actual condition of the patient, in this case Mr. O, who is being treated at Chuzan Hospital Okinawa, Japan. Implementation began on March 6, 2025, and was carried out for three consecutive days with a focus on three main nursing diagnoses: impaired physical mobility, impaired verbal communication, and gastrointestinal motility dysfunction.

On March 6, 2025, intervention for physical mobility disorders began at 9:00 AM by identifying pain and physical complaints. At 9:25 AM, general condition monitoring was conducted during the mobilization process, and at 10:00 AM, passive ROM (Range of Motion) therapy was continued on the extremities of the hands. The assessment results showed that the patient experienced muscle stiffness that made movement difficult. Flexion and extension of the wrist also showed significant muscle stiffness. However, this action served as the basis for further intervention. For verbal communication disorders, intervention began at 9:00 AM with monitoring of verbal aspects such as voice pressure, volume, and diction, as well as observations of cognitive and anatomical functions that support speech ability. At 9:30 AM, emotional behavior was identified as an alternative form of communication. Observations showed that the patient was not yet able to produce full sounds, only able to open his mouth without adequate expression and verbal response. Meanwhile, intervention for gastrointestinal motility dysfunction was carried out starting at 10:00 AM with monitoring of nausea and vomiting during the tube feeding process. At 10:30 AM, bowel movement monitoring was carried out. The patient exhibited signs of nausea and vomiting, as well as an irregular elimination pattern with below-normal urine output.

On March 7, 2025, interventions for impaired physical mobility continued. At 9:00 a.m., an evaluation of muscle pain and stiffness was performed, along with observations during passive ROM. The patient continued to exhibit stiffness, but appeared more relaxed than the previous day. Flexion and extension movements showed slight improvement, and the hands became more flexible during the exercises. Observations for verbal communication indicated slight improvement. The patient began to produce a low, though still hoarse, voice and was not yet able to speak clearly. However, the nursing team began to understand the patient's messages through simple sounds and gestures. The patient also appeared calm and did not display frustration or excessive emotion, indicating progress in psychosocial aspects. Gastrointestinal function showed a decrease in nausea,

although mild complaints persisted. Bowel movements began to improve, with daily fluid intake recorded at 1970 cc, indicating improvements in hydration and elimination function.

On March 8, 2025, interventions for impaired physical mobility continued to show positive results. At 9:00 AM, pain and stiffness were identified, followed by monitoring during passive ROM therapy. Between 9:30 AM and 10:00 AM, the patient appeared more relaxed and showed initiative in performing hand movements independently. Wrist flexion and extension improved, and the patient began to move the joint regularly, although stiffness persisted. Regarding verbal communication, the patient's voice was still low and hoarse at the beginning of the day, but later became clearer and more understandable. The patient appeared calm throughout the interaction, making it easier for the nursing team to understand his communication. Gastrointestinal function continued to decrease, and the patient began to have a regular bowel movement pattern every 8 hours. Urine output also returned to normal, indicating that the patient's digestive system and fluid balance were stabilizing.

The three-day implementation of nursing interventions demonstrated that a consistent, planned, and integrated approach can produce positive outcomes for patients with severe neurological disorders. Each intervention was implemented with attention to the patient's physiological and psychosocial responses, and adjustments were made based on daily evaluations. This demonstrates the importance of detailed nursing documentation to support ongoing clinical decision-making.

The success of the intervention, although partial, demonstrates the potential for improvement in the physical and communication conditions of patients who previously experienced significant impairments. Although not yet fully recovered, the patient's ability to demonstrate initiative in movement and more meaningful non-verbal communication are promising early indicators of recovery. This underscores the crucial role of nurses in the rehabilitation process for patients with chronic conditions or post-brain injury.

Overall, the implementation of interventions focused on mobility, communication, and the gastrointestinal system forms the foundation for the patient's overall recovery. With careful monitoring and active involvement from the nursing team, gradual improvements in the patient's function can be achieved. This series of nursing activities emphasizes that nursing interventions are not merely technical but also humanistic, taking into account the patient's dignity, comfort, and potential for holistic recovery.

Nursing Evaluation

A nursing evaluation of Mr. O's condition was conducted at 10:00 AM, focusing on three previously established primary diagnoses. First, in the diagnosis of impaired physical mobility related to decreased muscle strength (D.0143), subjective data indicated that Mr. O's family reported muscle stiffness that made it difficult for the patient to move his extremities. Objectively, the patient appeared to experience stiffness during wrist flexion and extension, and was unable to move his body muscles optimally. However, there was an increase in muscle strength in the patient's hands, indicating positive progress. Based on these data, it can be concluded that the problem of impaired physical mobility was partially resolved, and nursing interventions are recommended to continue to support further recovery.

Next, at 10:20 a.m., an evaluation was conducted for the diagnosis of verbal communication disorder related to neuromuscular disorders (D.0119). The patient's family stated that Mr. O still had difficulty moving his mouth and expressing words. From the observation results, the patient's voice sounded slightly broken, but was starting to be understood by those around him. This indicates an improvement in verbal communication function, although not yet fully recovered. Therefore, the problem of verbal communication disorder was considered partially resolved, and the nursing plan was still directed at continuing interventions to achieve optimal communication skills.

At 10:40 a.m., an evaluation was conducted for the diagnosis of gastrointestinal motility dysfunction related to enteral feeding (D.0021). Subjectively, the family reported that the patient still relied on a nasogastric tube (NGT) for food and drink. Objectively, the patient still had an NGT in place for nutritional support. Although this indicated a dependency on external assistance, the patient did not exhibit any new symptoms such as vomiting or diarrhea, which could indicate improvement in the gastrointestinal system. Therefore, it was concluded that the gastrointestinal motility dysfunction was partially resolved, and nursing interventions were decided to continue to support the transition to oral feeding when conditions permit.

During the three-day evaluation process, the patient's condition showed a positive response to the nursing interventions implemented. In terms of impaired physical mobility, although the patient still experienced muscle stiffness, the increase in hand strength and increased flexibility indicated that the consistent passive ROM exercises were beginning to yield results. This underscores the importance of continuity in providing structured physical therapy, as well as the need for regular evaluations to adjust the approach based on the patient's response to the therapy.

In terms of verbal communication, Mr. O's progress is an important indicator that interventions focus not only on physical aspects but also consider psychosocial approaches. When the patient began to produce clearer sounds and demonstrate expressions that the nursing team could understand, this reflects the important role of communication stimulation, strengthening nonverbal expressions, and emotional support in the healing process. This evaluation also demonstrated that family support and an empathetic approach from healthcare professionals were instrumental in creating a conducive environment for the recovery of communication function.

Meanwhile, for gastrointestinal motility dysfunction, even though the patient is still using a nasogastric tube (NGT), the absence of severe nausea, vomiting, or drastic changes in elimination patterns indicates that the gastrointestinal system is beginning to stabilize. This condition reinforces the importance of adequate nutrition and hydration management as an integral part of nursing care. This evaluation provides the basis for the team to develop a plan for a gradual transition from enteral to oral nutrition, while continuing to monitor the stability of the patient's gastrointestinal condition to prevent complications that could hinder the overall recovery process.

The nursing care provided to patient Mr. O with a nursing problem of physical mobility disorders was implemented through systematic stages, which included assessment, establishing a nursing diagnosis, formulating interventions, implementing implementation, and evaluating nursing. The main focus of this nursing care was the fulfillment of basic human needs, with a deep and structured nursing practice approach. In this study, the author examined the implementation of nursing

interventions in the form of passive Range of Motion (ROM) therapy to improve balance and muscle strength, which was carried out at CHUZAN Hospital, Okinawa, Japan.

The first stage begins with an assessment process conducted through interviews, direct observation of the patient, a physical examination, and a review of medical documentation. The assessment revealed a primary complaint of impaired physical mobility. The physical examination revealed a blood pressure of 150/96 mmHg, a body temperature of 36.9°C, a pulse rate of 86 beats per minute, an oxygen saturation of 96%, and a good sleep pattern. These data indicate that the patient's general vital signs are within normal limits, but limitations in physical mobility were noted.

Based on the results of the assessment and analysis referring to the Indonesian Nursing Diagnosis Standards (SDKI, 2018), three main nursing diagnoses were determined for Mr. O. First, *impaired physical mobility* related to decreased muscle strength, characterized by stiffness and weakness of the extremity muscles that cause dependence in daily activities. Second, *impaired verbal communication* due to neuromuscular disorders, indicated by the patient's difficulty in pronouncing words clearly and limited effective communication skills. Third, *gastrointestinal motility dysfunction* related to enteral intake, seen from the use of an NGT tube for nutritional fulfillment because the patient is not yet able to swallow optimally. These three diagnoses are the main focus of nursing interventions to support the gradual recovery of the patient's physical function, communication, and nutrition .

Next, nursing interventions are designed as part of the patient's recovery efforts. These interventions are systematic actions that include planning and implementing nursing actions aimed at achieving the desired outcomes. In the context of impaired physical mobility, interventions focus on reducing muscle stiffness through stretching exercises, including walking exercises performed with the assistance of physiotherapy equipment. Patients are also taught to stand for 30 seconds with assistance from a nurse or family member as part of a routine exercise program to strengthen muscles and improve balance.

The nursing implementation phase in this case study focused on interventions for physical mobility disorders related to neuromuscular disorders. The authors performed passive ROM exercises on the patient for three days, with results showing an increase in muscle strength on the second day. The passive ROM exercise steps applied included head-to-toe movements, and this is in accordance with the theoretical approach used in the case study. However, there is a difference with the results of the study by Nurtanti et al. (2018), which showed that muscle strength increases only occurred after one month of active ROM exercises, with significant improvements starting to appear in the third week.

Nursing evaluations were conducted daily for three days. Results showed that while there was no significant improvement in physical mobility, passive ROM therapy successfully prevented further decline in muscle strength. On the final day, the patient still experienced difficulty moving her hand, with a muscle strength score of 4. This indicates that muscle strength remained stable and did not decrease during the intervention.

In theory, passive range of motion exercises have been shown to prevent contractures and improve joint function. These exercises play a role in increasing muscle strength and endurance, improving

blood flow that carries oxygen to tissues, and accelerating the healing process. Furthermore, passive ROM therapy also helps regulate the body's metabolism and optimizes the physiological function of vital organs. Therefore, the nursing intervention of passive ROM therapy performed on patient Mr. O can be concluded as an effective approach in maintaining and improving the patient's physical condition, as explained in the theory by Rustinawati (2013).

CONCLUSIONS

Based on the results of the nursing care case study on Mr. O who experienced a hemorrhagic stroke, the assessment process was carried out comprehensively through interview methods, direct observation, physical examination, and review of the patient's medical documentation. The assessment results showed that the main complaint was joint pain and an increased risk of falling. Vital data showed blood pressure of 160/80 mmHg, pulse rate of 88x/minute, respiration rate of 25x/minute, and body temperature of 36°C. Muscle strength examination using a scale of 0–5 showed muscle weakness in the lower extremities (right and left legs with strength 2) and slightly better in the upper extremities (right and left hands with strength 4). Based on these findings, the main nursing diagnosis was established, namely *impaired physical mobility*, determined from major data (muscle weakness and limited movement) and minor data (subjective complaints and observation results), in accordance with theoretical references and nursing diagnosis standards.

The nursing care plan was systematically developed, referring to the Indonesian Nursing Intervention Standards (SIKI), which includes specific interventions for addressing physical mobility impairments. This plan was tailored not only to the established diagnosis but also to the patient's physiological condition and individual needs. Nursing care was then implemented over three consecutive days (3 x 24 hours), focusing on providing *Range of Motion* (ROM) exercises in a gradual and structured manner. During the intervention, periodic evaluations were conducted to monitor the patient's response to the exercises. The evaluation results indicated partial improvement in motor ability and muscle strength, although not yet fully optimal. Therefore, the nursing problem was declared "partially resolved" and the intervention was continued. This overall process demonstrated that ROM exercises can be an effective approach to improving mobility in stroke patients if implemented consistently, tailored to individual needs, and based on careful planning.

Suggestion

For future researchers, it is recommended to develop and explore other non-pharmacological interventions besides ROM that have the potential to improve mobility in stroke patients, such as electroneuromuscular training or occupational therapy. For nursing staff, ROM exercises should be provided regularly and consistently, according to standard procedures, to maximize their effectiveness in preventing complications such as hemiparesis and hemiplegia. Hospitals are also expected to integrate ROM exercises into standard operating procedures (SOPs) in nursing practice for stroke patients, so that this therapy becomes part of a structured and sustainable rehabilitation protocol, and can serve as a reference for improving the quality of nursing services in general.

REFERENCE

Ditasari, A. (2022). Physical Mobility Disorders in Hemorrhagic Stroke Patients in the Arimbi Ward of Wijayakusuma Hospital, Purwokerto. *ULIL ALBAB: Multidisciplinary Scientific Journal* , 1 (8), 2764-2769.

- Hutagalung, JI (2020). Literature Review: Nursing Care for Clients Experiencing Hemorrhagic Stroke with Physical Mobility Impairments in the Application of Range of Motion Therapy at Dr. Ferdinand Lumban Tobing General Hospital, Sibolga City in 2020.
- Kartika, AA, Suwanto, AW, & Wiratmoko, H. (2022). Nursing Care for Post-Stroke Clients with Verbal Communication Disorders in the Jenangan Ponorogo Community Health Center. *Journal of Management Nursing* , 1 (4), 111-115.
- Kusumaningrum, PR, & Sulistyowati, AD (2022). Implementation of 3S (SDKI, SLKI, SIKI) in Nursing Care in Hospitals. *Indonesian Community Service Journal* , 2 (2), 577-582.
- Kusumaningrum, PR, & Sulistyowati, AD (2022). Implementation of 3S (SDKI, SLKI, SIKI) in Nursing Care in Hospitals. *Indonesian Community Service Journal* , 2 (2), 577-582.
- Nurtanti, S., & Ningrum, W. (2018). Effectiveness of Active Range of Motion (ROM) on Increasing Muscle Strength in Stroke Patients. *GSH Nursing Journal* , 7 (1), 14-18.
- Rudi, A., & Setyanto, RB (2019). Analysis of factors influencing the risk of falls in the elderly. *Scientific Journal of Health Sciences: Health Insights* , 5 (2), 162-166.
- Setyawati, VY, & Retnaningsih, D. (2024). Application of Range of Motion in stroke patients with impaired physical mobility. *Journal of Nursing Care Management* , 8 (1), 18-24.
- Sukrisno, A., Nursalam, N., Efendi, F., & Zamroni, AH (2023). Development of a 3S-Based Hemorrhagic Stroke Clinical Pathway (SDKI, SLKI, SIKI). *Journal of Telenursing (JOTING)* , 5 (2).
- Syahrim, WEP, Azhar, MU, & Risnah, R. (2019). Effectiveness of ROM Exercises on Increasing Muscle Strength in Stroke Patients: A Systematic Review Study. *Indonesian Health Promotion Publication Media (MPPKI)* , 2 (3), 186-191.
- Ummaroh, EN (2019). *Nursing care for CVA (Cerebro Vascular Accident) patients with verbal communication disorders in the Aster Ward of Dr. Harjono Regional Hospital* (Doctoral dissertation, Muhammadiyah University of Ponorogo).
- Yusnita, ED, Darliana, D., & Amalia, R. (2022). Nursing Management of Hemorrhagic Stroke Patients in the Neurological Ward: A Case Study. *Scientific Journal of Nursing Faculty Students* , 6 (1)

