



CASE STUDY: RANGE OF MOTION IMPLEMENTATION IN ELDERLY PATIENTS WITH STROKE AT TRUE LOVE NURSING HOME BATAM

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ABSTRAK

Latar Belakang: Gangguan mobilitas fisik yang terjadi pada pasien stroke dapat dilakukan latihan fisik berupa mobilisasi dini berupa latihan ROM yang efektif digunakan untuk mencegah terjadinya disabilitas pada pasien stroke. ROM merupakan penatalaksanaan yang tepat untuk meningkatkan kekuatan otot yang melemah pada pasien stroke. Tujuan: Penelitian ini bertujuan memberikan Asuhan Keperawatan Stroke Gerontik pada pasien dengan Penerapan Teknik ROM Terhadap Imobilisasi. Metode: Penelitian ini menggunakan metode studi kasus yang dilakukan berdasarkan tahapan asuhan keperawatan yang meliputi, pengkajian, diagnosis, intervensi. Hasil: Penelitian studi kasus yang dilakukan terhadap 2 pasien lansia didapatkan adanya peningkatan pergerakan ekstremitas atas/bawah kanan pasien dan peningkatan kekuatan otot ekstremitas atas/bawah kanan pasien yang mana setelah diberikan ROM selama 5 x 30 menit sebanyak 2 sesi pada pagi dan sore hari didapatkan pada hari keempat dan kelima terdapat peningkatan kekuatan otot ekstremitas atas/bawah kanan pasien yang mana awalnya kekuatan otot 5/0/5/0 menjadi 5/1/5/2 pada ekstremitas atas/bawah kanan pasien. Maka dapat disimpulkan bahwa terapi ROM sangat berpengaruh terhadap peningkatan kekuatan otot, peningkatan ekstremitas dan mobilisasi pada pasien lansia. Kesimpulan: terdapat peningkatan pergerakan ekstremitas atas dan bawah kanan pasien, peningkatan kekuatan otot ekstremitas atas kanan pasien dari 0 menjadi 1 dan peningkatan kekuatan otot ekstremitas bawah kanan pasien dari 0 menjadi 2, serta peningkatan rentang gerak pasien. Rekomendasi: Tindakan ROM memiliki dampak positif dalam meningkatkan mobilisasi lansia, sehingga ROM dapat dijadikan terapi rutin yang diberikan pada lansia agar dapat menurunkan risiko imobilisasi pada lansia..

KATA KUNCI: Lansia, Imobilisasi, ROM

ABSTRACT

Background: Physical mobility disorders that occur in stroke patients can be done by physical exercise in the form of early mobilization in the form of ROM exercises that are effectively used to prevent disability in stroke patients. ROM is the right management to increase the strength of weakened muscles in stroke patients. Objective: This study aims to provide Gerontic Stroke Nursing Care to patients with the Application of ROM Techniques to Immobilization. Method: This study uses a case study method that is carried out based on the stages of nursing care which include, assessment, diagnosis, intervention. Results: Case study research conducted on 2 elderly patients found an increase in the movement of the patient's upper/lower right extremities and an increase in the muscle strength of the patient's upper/lower right extremities which after being given ROM for 5 x 30 minutes as many as 2 sessions in the morning and evening, it was found on the fourth and fifth days there was an increase in the muscle strength of the patient's upper/lower right extremities which initially muscle strength was 5/0/5/0 to 5/1/5/2 in the patient's upper/lower right extremities. So it can be concluded that ROM therapy has a great influence on increasing muscle strength, increasing extremities and mobilization in elderly patients. Conclusion: There is an increase in the movement of the patient's right upper and lower extremities, an increase in the patient's right upper extremity muscle strength from 0 to 1 and an increase in the patient's right lower extremity muscle strength from 0 to 2, as well as an increase in the patient's range of motion. Recommendation: ROM actions have a positive impact on increasing the mobilization of the elderly, so that ROM can be used as a routine therapy given to the elderly in order to reduce the risk of immobilization in the elderly.

KEYWORDS: Elderly, Immobilization, ROM



INTRODUCTION

Elderly people will experience many physical and mental changes and also experience a decline in some of their functional abilities, so that changes in body functions include memory, hearing, vision, muscle weakness, cognitive feelings, psychosocial, spiritual and physical appearance and biological dysfunction (Maghfuroh et al., 2023). Aging is a long life process and cannot start from a certain time, but starts from the beginning of life and getting old is a natural process which means that a person will go through three stages in life, namely childhood, adulthood and old age (Arisandi, 2023).

The elderly are susceptible to health problems, one of which is stroke. Stroke is a severe neurological disorder that is most often encountered with acute attacks and can cause death in a short time or lifelong disability, both physical and mental disabilities (Arna et al, 2024). Stroke can occur if the blood vessels in the brain are blocked or ruptured, causing part of the brain not to get the blood supply that carries the necessary oxygen, resulting in cell or tissue death. (Hutagalung, 2019).

World Stroke Organization data in 2019 shows that every year there are 13.7 million new cases of stroke, and around 5.5 million deaths occur due to stroke. Around 70% of strokes and 87% of deaths and disabilities due to stroke occur in low- and middle-income countries. Over the past four decades, the incidence of stroke in low- and middle-income countries has more than doubled. Meanwhile, the incidence of stroke has decreased by 47% in high-income countries. Over the past 15 years, strokes have occurred and caused more deaths on average in low- and middle-income countries compared to high-income countries (Ministry of Health of the Republic of Indonesia, 2019).

The prevalence of stroke in Indonesia according to the 2023 Indonesian Health Survey (SKI), based on a doctor's diagnosis in the population aged ≥ 15 years (per-mile) was recorded at 8.3%. In the Riau Islands it was recorded at 8.9% and based on age characteristics groups it can be seen that the incidence of stroke based on a doctor's diagnosis occurred more in the elderly group,

namely the 55-64 year age group as much as 23.6%, the 65-74 year age group as much as 35.4% and the age group 75 years and over as much as 41.3% (SKI, 2023).

Data from the Batam City Health Office Profile in 2022 obtained data from the elderly survey report of PTM cases, there were 27 diseases in Batam City, including ARI, hypertension, diabetes mellitus, common cold and dyspepsia. stroke is ranked 19th with a total of 481 people in the elderly aged >60 years (Batam City Health Office, 2022). Based on data from the elderly at the True Love Nursing Home in 2024, 9 out of a total of 32 elderly experienced strokes. Elderly stroke patients are prone to experiencing physical mobility problems.

Physical mobility problems that occur in stroke patients can be avoided by Range of Motion (ROM) actions. ROM is a form of therapy in the rehabilitation process that is considered quite effective in preventing disability in stroke patients (Batmomolin, 2024). Early mobilization includes ROM exercises and positioning as a form of rehabilitation exercise that is effective in preventing disability in stroke patients. If a stroke patient experiences impaired muscle strength, it will have an impact on carrying out daily activities, so that appropriate management to increase weakened muscle strength needs to be given mobilization to stroke patients by providing active and passive ROM therapy (Wahyu et al., 2022). ROM therapy is a series of movements performed on the joints which aim to remind flexibility and muscle strength (Potter & Perry, 2006). ROM therapy can be applied safely and as one of the therapies for various patient conditions that have a positive impact both physically and psychologically. Light therapy such as ROM therapy has several advantages, including being easier for patients to learn and remember, easy to apply and is a low-cost nursing intervention that can be applied by stroke patients at home (Hutagalung, 2019).

The results of the study according to Maulina et al., (2023) concluded that the implementation of Passive ROM intervention for 20 minutes and carried out twice a day every morning and evening for 6 consecutive



days showed that respondents experienced an increase in muscle strength by one level on the muscle strength scale, so that passive ROM therapy had an effect on increasing muscle strength in the elderly with Non-Hemorrhagic Stroke.

Similar results with research conducted by Salsabila & Pakaya, (2023) which found similarities between theory and real cases. After ROM training for 1x8 hours, the problem was resolved with an increase in muscle strength in Mr. B and ROM actions can increase muscle strength in non-hemorrhagic stroke patients.

The results of research conducted by Hidayah et al., (2022) showed that the patient's muscle strength after ROM increased from 3 to 4, so it can be concluded that ROM nursing actions carried out on patients showed increased limb movement, increased muscle strength, increased ROM range of motion and decreased physical weakness.

Conditions with impaired physical mobility or immobilization in stroke patients are still high, especially at the True Love Nursing Home, there were 9 patients who had strokes and 6 patients who experienced partial dependence as evidenced by the results of the Geriatric Plenary Assessment (P3G) which included an assessment of the Katz Index, Berthel index, instrumental activities of daily living, balance scale and assessment of fall risk assessment in the elderly. So, to prevent the occurrence of severity or complications in stroke patients, it is very important to carry out ROM therapy.

Based on the description above, the researcher is interested in implementing "Gerontic Nursing Care with the Application of ROM Techniques for Patient Immobilization at the True Love Nursing Home in Batam City".

MATERIALS AND METHODS

This case study follows the stages based on Polit and Beck (2017) on the implementation of EBN in nursing practice. There are 5 stages in the nursing process, including nursing assessment, nursing diagnosis, nursing intervention, nursing implementation and nursing evaluation. The stages consist of five stages, namely: (1) raising questions (PICO), (2) seeking related evidence, (3) assessing the evidence obtained, and (5) evaluating the implementation of EBN. For the first stage, the

first question that was raised, the question that was raised based on PICO (Problem/population, intervention, comparison and found in the third stage recommended the application of ROM therapy for immobilization of elderly patients. For the next stage, the application of EBN was carried out on an elderly patient at the True Love Batam nursing home. Before the intervention was carried out, the procedure was explained to the patient. The patient's willingness was given through verbal consent. Before EBN was implemented, a comprehensive assessment was carried out on the patient. The intervention was carried out for five days for ROM therapy. The application of the ROM technique was 5 x 30 minutes for 2 sessions, namely in the morning and evening. The last stage was an evaluation of the implementation of EBN. Range of motion assessments were carried out every day for five days after ROM therapy was carried out

RESULTS AND DISCUSSION

Based on the results of the nursing assessment conducted on Monday, June 10, 2024, the author collected data has been conducted on 2 patients who experienced stroke and immobilization using interview techniques, observations and documented nursing records from several sources, namely from patients and health workers at the True Love Nursing Home, Batam City.

The results of the nursing assessment on patient found complaints experienced by the patient, namely the patient said he had a stroke or muscle weakness in the right hand and foot only since 2021, the patient said he could not move the upper and lower right extremities and the fingers and toes of the right hand, the patient said there was a little pain when his right hand and foot were moved or lifted using his left hand, the patient said he could not walk, the patient appeared to be sitting in a wheelchair, there was muscle weakness in the patient's upper and lower right extremities with muscle strength 0, Babinski reflex and patellar reflex in the upper and lower extremities on the right were absent, the patient's range of motion was limited, the general condition was moderately ill, compos mentis consciousness, blood pressure: 140/90 mmHg, pulse: 87x / m, respiration: 20x / m and temperature: 36.7°C.



The results of the nursing assessment conducted by the researcher are in line with the research conducted by Megawati & Sunarno, (2023) where when the patient was assessed, he had suffered a stroke since 5 years ago. Complaints experienced during the initial assessment were obtained, namely the client said it was difficult to move his right hand and leg felt stiff, weak and painful when moved, the client appeared unable to walk and the client's blood pressure was 159/83mmHg, body temperature 36.50c, pulse 80 times / minute, breathing 20 times / minute. The results of the nursing assessment are also in line with those found by Wahyu et al., (2022), namely the results of the assessment using the head-to-toe physical examination technique obtained subjective data assessment results, the patient said that the left limb was weak and difficult to move, objective data showed that the patient seemed to have difficulty moving his left hand and left leg, the patient looked weak, muscle strength: 5 / 3, 5 / 3, blood pressure: 209/117 mmHg, pulse: 100 x / min, RR: 22 x / min, and temperature: 38.1 °C.

Based on the data collection in the assessment that has been carried out, the next step is to formulate a nursing diagnosis. The nursing diagnosis that the author formulated based on subjective and objective data is a nursing diagnosis of impaired physical mobility related to decreased muscle strength which is characterized by subjective major signs and symptoms: complaining of difficulty moving the extremities.

The nursing diagnosis carried out by the researcher is in line with the research conducted by Salsabila & Pakaya, (2023) where the diagnosis that emerged according to the SDKI in theory in this case study was impaired physical mobility related to decreased muscle strength (D.0054) indicated by the patient saying that he was weak all over his body, vital signs of blood pressure 119/115 mmhg, pulse 105x/m, temperature 36 °C, respiration 28x/m. This is in line with research conducted by Wahyu et al., (2022) which obtained the results of the murder diagnosis, namely physical mobility disorders associated with muscle weakness which is characterized by the patient's condition saying that the left limb is weak and difficult to move, the patient appears to have difficulty moving the left hand and foot, the patient looks weak.

The nursing interventions that researchers carried out used references from the Indonesian nursing intervention standard book (PPNI, 2019). The nursing interventions carried out by the researcher are in line with the nursing interventions carried out by Hidayah et al., (2022) where the nursing interventions in this case study focused on diagnosing physical mobility disorders related to decreased muscle strength and the main intervention carried out was mobilization support by performing active and passive ROM. This is also in line with the intervention carried out by Megawati & Sunarno, (2023) where the nursing intervention on the subject used in this case study was a client who had a stroke with impaired physical mobility related to muscle weakness, namely mobilization support and the application of Range Of Motion (ROM) therapy.

The implementations carried out are: identifying pain or other physical complaints, identifying physical tolerance for movement, monitoring heart rate and blood pressure before starting mobilization, monitoring general conditions during mobilization, facilitating mobilization activities with assistive devices, explaining the purpose and procedures of mobilization, encouraging early mobilization, teaching simple mobilizations that must be done (eg: sitting in bed, sitting on the side of the bed) and teaching ROM technique therapy (PPNI, 2018). The implementation of nursing carried out by researchers is in line with the implementation of nursing carried out by Wahyu et al., (2022), namely implementing nursing care for patients by only focusing on one nursing problem, namely impaired physical mobility related to decreased muscle strength, where the main implementation carried out is in accordance with nursing interventions, namely mobilization support by performing active and passive ROM.

This is in line with research conducted by Salsabila & Pakaya, (2023), namely the implementation carried out is mobilization support and carrying out ROM exercises based on interventions in the diagnosis of impaired physical mobility related to decreased muscle strength in stroke patients.

In general, nursing evaluation is carried out after the author has completed the



implementation of nursing. In the case of patient, the implementation of nursing given for 5 days found the results of the nursing evaluation: increased patient mobilization which is indicated by increased limb movement, increased muscle strength and increased range of motion (ROM). This is in line with research conducted by Widoyono, (2023), namely that the implementation carried out was mobilization support and carrying out ROM exercises based on interventions in the diagnosis of physical mobility disorders related to decreased muscle strength in stroke patients.

The implementation given to patient to increase muscle strength, increase limb movement and increase mobilization, the author uses the basic theory of nursing intervention, namely mobilization support and performing ROM techniques where there are also several studies that show that ROM therapy can increase muscle strength and increase mobilization in stroke patients. The provision of nursing implementation with mobilization support and application of ROM techniques on patient who had a stroke with nursing problems of impaired physical mobility for 5 x 30 minutes which was carried out in 2 sessions, namely in the morning and evening, can provide results in increased limb movement, increased muscle strength in patients and increased range of motion gradually where after four days of regular ROM therapy, patient was proven to have increased muscle strength, although still weak, but there was an increase, namely the initial muscle strength in the upper right extremity was originally 0, the lower right extremity 0, the upper left extremity 5 and the lower left extremity 5, but after four days of mobilization support and application of ROM techniques, muscle strength increased to 1 in the upper right extremity, 2 in the lower right extremity.

This is in line with the results of the nursing evaluation of the research conducted by Megawati & Sunarno, (2023) the results of the study showed that Range Of Motion (ROM) therapy can increase muscle strength from scale 1 to scale 2 in the upper and lower extremities on the right side of the client, while the upper and lower extremities on the left side of the client from scale 4 increased to scale 5 in stroke patients. This is also in line with the results of the nursing evaluation of the

research conducted by Wahyu et al., (2022) After implementing ROM nursing for 3x24 hours, an increase in muscle strength was obtained from the initial 3 to 4. Based on the results of the nursing evaluation above, there is one nursing intervention that has not been achieved in the research conducted by the author, namely involving the family to help patients improve movement. This is because patient lives in a nursing home so that there is no family to help the patient in carrying out daily activities, therefore the author decided to delegate the achievement of the nursing intervention to the care giver who is responsible for patient.

CONCLUSIONS

ROM treatment have a positive impact on increasing the mobilization of the elderly, so that ROM can be used as a routine therapy given to the elderly in order to reduce the risk of immobilization in the elderly.

The nursing assessment stage for patient found complaints experienced by the patient, namely the patient said he had a stroke or muscle weakness in the right hand and foot only since 2021, the patient said he could not move the right upper and lower extremities and the fingers and toes of the right hand, the patient said there was a little pain when his right hand and foot were moved or lifted using his left hand, the patient said he could not walk, the patient appeared to be sitting in a wheelchair, there was muscle weakness in the patient's right upper and lower extremities with muscle strength 0, Babinski reflex and patellar reflex on the right upper and lower extremities were absent, the patient's range of motion was limited, the general condition was moderately ill, composmentis consciousness, blood pressure: 140/90 mmHg, pulse: 87x / m, respiration: 20x / m and temperature: 36.7°C.

Nursing diagnosis stage for patient is a physical mobility disorder related to decreased muscle strength characterized by subjective major signs and symptoms: complaining of difficulty moving the extremities and objective: decreased muscle strength and decreased range of motion (ROM), subjective minor signs and symptoms: pain when moving, objective signs and symptoms: stiff joints and limited movement.

The nursing intervention stage for patient with



a nursing diagnosis of physical mobility disorder related to decreased muscle strength is by carrying out nursing interventions for mobilization support and implementing ROM techniques for patient immobilization

The implementation stage of nursing given to the patient is in accordance with the nursing intervention, namely mobilization support and implementing ROM techniques for 5 x 30 minutes for 2 sessions, namely in the morning and evening.

The nursing evaluation stage for patient shows an increase in the movement of the patient's upper and lower right extremities, an increase in the strength of the patient's upper right extremity muscles from 0 to 1 and an increase in the strength of the patient's lower right extremity muscles from 0 to 2, as well as an increase in the patient's range of motion (ROM).

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