



A Case Study

IMPLEMENTATION OF EVIDENCE BASED NURSING: RANGE OF MOTION EXERCISE TO THE PATIENT WITH FEMUR FRACTURE

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A B S T R A C T

Introduction: Femur fracture is a break in the continuity or fracture in the thigh caused by external pressure or physical exertion which is characterized by deformities such as shortening of the leg in the fractured part and limitation of motion.

Objective: This case study aims to overcome the physical mobility constraints and activity limitations of the patient

Method: Physical examination of the fracture of the femur was performed using the head-to-toe method in postoperative patients with Open Reduction Internal Fixation. The North American Nursing Diagnosis Association is used to determine nursing diagnoses. Meanwhile, nursing intervention refers to the Nursing Intervention Classification and the Nursing Outcomes Classification.

Result: A nursing diagnosis of physical mobility impairment with the diagnosis number 00085 was given a nursing intervention in the form of a ROM exercise. After 7 days of nursing intervention, physical mobility impairments were resolved with the criteria that the patient's joint movement increased from stiffness to being able to move, the patient's muscle movement increased with muscle strength from 3 to 5, the patient's balance from very disturbed to slightly disturbed, the patient's way of walking from very annoyed to be quite annoyed.

Conclusion: ROM Exercise can increase physical mobility aided by using a mobilization aid (crutch), so it is important to do in patients with a diagnosis of impaired physical mobility.

INTRODUCTION

According to data from the World Health Organization (WHO), traffic accidents are a world health problem which is the number 8 cause of death, the number of traffic accidents every year has increased, if not handled with serious causes of death due to traffic accidents, increase to number 5 in the world by 2030 (Iskandar, Mardiyono, & Rumahorbo, 2018). In Indonesia, WHO is rated as the third biggest killer after coronary heart disease and tuberculosis (Djamil, Sagan, Manjas, & Rasyid, 2017).

Each year 1.24 million people die due to traffic accidents, while another 20–50 million people suffer from disabilities due to traffic

accidents. Femur fractures were the most frequent cases, accounting for 39%, followed by humerus fractures in 15%, tibial and fibular fractures in 11%. The biggest cause of femur fractures is traffic accidents, including car and motorcycle accidents (Desiartama & Aryana, 2017).

Femur fractures are most common in the middle third of the femur and fractures of the femur are more common in males than females with a vulnerable age under 45 years (Djamil et al., 2017). Femur fracture is a condition of damaged bone continuity or a fracture in the thigh caused by external pressure or physical exertion accompanied by deformities such as shortening of the leg in

the fracture area and limited movement. (Igianny, 2018)

This limitation of movement results in impaired joint flexibility so that patients experience impaired physical mobility. One of the efforts to overcome this problem is doing regular Range of Motion (ROM) exercises. Patients who experience postoperative fractures often feel afraid to move their joints because of the pain they suffer, this condition can result in disruption of the patient's independent activities, even if allowed to continue it can cause physical disability and the healing process takes a long time (Olviani & Rahmawati, 2017).

ROM is a physical exercise that is able to improve the perfection level in moving joints normally and completely to increase muscle mass and tone. In addition, ROM can increase the patient's ability to independently carry out daily activities, one of which is exercise by pulling the grip on the bed. However, in the immobilized limb to maintain large muscle strength, quadriceps, isometric exercises and gluteal adjustments can be performed (Ridha & Putri, 2015).

In the Cros-Education for Improving Strength and Mobility After Distal Radius Fractures: A Randomized Controlled Trial by Magnus et al (2013) it is stated that there is an increase in physical mobility in patients with distal radius fractures after routine ROM exercises (Lee, Yoon, Chung, Kim, & Kwak, 2015). Muscle strength can be increased after being given ROM exercises as in a study entitled *The effects of muscle strength and power training on mobility among older hip fracture patients* (Djamil et al., 2017). In addition, ROM training can prevent physical disabilities in Physical Activity and Hip Fracture Disability (Ridha & Putri, 2015).

METHOD

Based on the implementation of EBN in nursing practice, this case study uses five stages according to Polit and Beck (2019), namely: (1) asking questions (PICO), (2) looking for related evidence, (3) assessing evidence, (4) applying evidence, (5) evaluating the application of EBN (Kharti Gempitasari &

Betrianana, 2019).

The first step is asking PICO (Problem / population, intervention, comparison, outcome) questions based on the EBN. The questions that arise are "Is the appropriate intervention done in patients with an ORIF insertion of femoral fracture?". Then do a search using electronic media, namely google, google scholar, PubMed. Then the results were assessed on the article and found references regarding ROM exercises in fracture patients to prevent joint stiffness and increase the patient's independence of activity.

The next stage was applied to femur fracture patients at the Banjar City Regional General Hospital (RSUD) for 7 days from 25-31 July 2018. Informed consent was carried out verbally to explain the implementation procedure and ask for consent from the patient and family.

Doing active ROM exercises, including leg flexion and extension exercises, bed pulling and weight bearing exercises for healthy joints. In the immobilized extremities to maintain large muscle strength which is essential for traveling, quadriceps, isometric exercises, and gluteal adjusting are performed.

Data collection was taken from the results of physical examinations, medical records, observations, interviews and related internet journal sources. The final stage in the nursing process is evaluation. Evaluation is carried out every day after the ROM exercise to find out any progress that has occurred.

The purpose of this case study is to overcome the physical barriers and activity limitations of patients by implementing evidence-based nursing Range of Motion (ROM) exercise.

RESULT

From the results of the intervention, it can be proven that ROM exercises that are performed actively and consistently can prevent disability in the limb that has fractured, increase activity and patient independence (Lesmana, 2016).

Tabel 1. Hasil Penerapan Evaluasi

time	result
25 2018	Juli pasien mampu menggerakkan sendi kaki
26 2018	Juli mampu menggeser kaki dengan perlahan
27 2018	Juli mampu menggeser kaki dengan perlahan
28 2018	Juli mampu mengangkat kaki 150° dengan bantuan perawat dan pasien masih mengeluh nyeri serta membatasi pergerakannya
29 2018	Juli pasien mampu mengangkat kaki 90° dan mampu miring ke kiri dan ke kanan
30 2018	Juli pasien mampu duduk dan berpindah ke kursi roda dengan bantuan perawat dan keluarga
31 2018	Juli pasien mampu berdiri dan berjalan menggunakan alat bantu mobilisasi (crutch) dengan bantuan perawat dan juga keluarga

DISCUSION

The main foundation or component of the nursing process is an assessment where the nurse is able to critique and detect a change quickly and then can intervene and perform nursing care as early as possible (Setiawan, Ediati, & Winarni, 2017; Setiawan, Khaerunnisa, Ariyanto, & Firdaus, 2020; Setiawan, Sopatilah, Rahmat, Wijaya, & Ariyanto, 2018).

Assessment and Supported Examination

The results of the assessment on patients with postoperative care for fracture of the left femur at the Banjar City Hospital, Mr. K, 26 years old, addressing Dusun Sukamandi RT/RW 02/11 Desa Kadupandak, was taken to the hospital on July 4 2018 at 10.14 with complaints of left leg pain while walking due to an accident 8 months ago.

The assessment was carried out on July 25, 2018 at 15.30 in the Raflesia room, the patient complained of left leg pain after day 3 femur fracture surgery, pain felt like in a cut, pain scale 5 from range (0-10), pain was felt when moving and less at rest. On the left leg

there is a bandage from the groin to the knee 25 cm and there is swelling of the wrist. In the right leg muscle strength 3 (weak lifting, able to resist the force of gravity) does not occur muscle stiffness and the leg can be moved. The results of the assessment of vital signs: blood pressure 110/60 mmHg, pulse 80 times/minute, temperature 37.3 ° C, breathing 20 times/ minute.

Furthermore, physical examination in head to toe starting from the head examination: symmetrical head shape, no lumps, no lesions, black hair, no tenderness. Eye Examination: symmetrical eyes, the movement of both eyeballs is the same, conjunctiva anemic, isochore pupils, no visual disturbances, no tenderness. Ear examination: symmetrical ears, no lesions, no tenderness, no hearing loss. Nasal examination: symmetrical nostrils, no secretions, no polyps, no swelling, no tenderness and good smell.

Oral examination: clean mouth, complete teeth, no dental caries, moist lip mucosa, good taste. Neck examination: no jugular vein swelling, no tenderness, good swallowing reflex. Examination of the skin: brown skin color, warm acral palate, good skin turgor, no cyanosis. Chest and lung examination, Inspection: symmetrical chest shape, no lesions, no lumps. Palpation: no tenderness, Percussion: resonant in all lung fields, Auscultation: vesicular. Abdominal examination, Inspection: even skin color symmetrical shape, Auscultation: bowel sounds 11 times/minute, Percussion: tympanic, Palpation: no tenderness.

Genital examination: attached urine catheter, clean. Upper Extremity Examination: muscle strength 5 (normal condition). Lower limb: the left leg is immovable, there is a bandage from the groin to the top of the knee about 25 cm and there is swelling in the ankle. Right leg muscle strength 3 (weak lift, able to resist gravity) and no swelling.

Data Analysis and Nursing Diagnosis

The assessment on July 25 2018 obtained subjective data from patients complaining of pain in the left leg from surgery, objective

data of the patient seemed to grimace in pain, pain in the left leg after day 3 femur fracture surgery, pain felt like in a cut and pain was felt at scale 5 from range (0-10), pain is felt when moving and less when resting. Based on the data above, it is obtained that the pain nursing problem is related to the physical injury agent.

Subjective data, the patient said the left thigh hurts when moved, partly the patient's activities are assisted by the family. The objective data of the patient appeared to be grimacing when moving the left leg, the patient seemed to restrict his movement. In the right leg with muscle strength 3 (weak root, able to resist the force of gravity) there is no muscle stiffness, the right leg can be moved. So that the data obtained, physical mobility barriers are associated with musculoskeletal disorders.

Subjective data, the patient complained of left thigh pain. Objective data, the left thigh was bandaged from the groin to the knee 25 cm and there was swelling of the wrist. In order to obtain data, the risk of infection is associated with invasive procedures.

Nursing Intervention

The goal of nursing diagnosis: after 7 days of nursing care, the patient is expected to know the goal of increasing physical activity. Among them, patients are able to carry out activities, increase independence, be able to use mobilization aids and express feelings of increasing physical activity.

Implementation

Implementation of a nursing care plan to help patients achieve predetermined goals (Andan Firmansyah, Ahid Jahidin, & Nur Isriani Najamuddin, 2019). In order to achieve these goals, nurses must have the ability to build trusting relationships, therapeutic communication skills, advocacy skills, psychomotor abilities and evaluation skills. The implementation of the intervention for physical mobility constraints is doing ROM exercises with ambulation and lying transfer exercises, with the hope that after nursing care for 7 days the patient is able to

increase physical activity according to his ability.

Evaluation

The results of ROM exercises for 7 days, namely, before the postoperative intervention on the 3rd day the patient was unable to move his legs because of pain, after the first day the intervention the patient was able to move the leg joints, on the second day the patient was able to move his feet slowly, on day 3 the patient learned lifting the leg with the help of a nurse, on day 4 the patient was able to lift the leg 150° with the help of the nurse and still complained of pain and restricted movement. Intervention on day 5, the patient can lift the leg 90° and is able to tilt left and right, on the 6th day the patient is able to sit and move to a wheelchair with the help of a nurse and family, on the 7th day the patient learns to stand and exercise walking using mobilization aids (Crutch) with the help of a nurse and family.

CONCLUSION

The implementation of EBN, ROM exercises in femur fracture patients for 7 days showed the expected results, namely an increase in patient activity and prevention of physical disability.

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