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The effectiveness of early mobilization intervention on mobilization ability in post caesarean section patients

Rengganis Marcella Aulia Rachman, Chairul Huda Al Husna*

Nursing Professional Study Program, Muhammadiyah University of Malang

Corresponding author: *Email: chairul@umm.ac.id

Abstract

Background: The rate of cesarean sections continues to rise globally, reaching around 21%, and in Indonesia, it reaches 17–18% of all deliveries. Post-cesarean section patients often experience limited mobility due to pain and muscle weakness, necessitating effective interventions such as early mobilization to prevent complications and accelerate recovery.

Purpose: To determine the effectiveness of early mobilization in improving mobilization ability in post-cesarean section patients.

Method: The study design used a case study approach in two post-cesarean section patients who met the inclusion criteria. Early mobilization intervention was provided according to standard operating procedures (SOP), including ROM exercises, position changes, sitting exercises at 6 hours postoperatively, and standing and walking exercises at 8 hours postoperatively. Evaluation was conducted over three treatment sessions to assess changes in mobilization ability.

Results: Prior to the intervention, both patients experienced mobility limitations in the form of decreased muscle strength, limited range of motion, pain, and anxiety when moving, with mobility scores in the moderate category (scale 3). After three sessions of early mobilization intervention, there was a significant improvement in all mobility indicators, including muscle strength, ROM, and standing and walking ability. Mobility scores increased to the high category (scale 5). Early mobilization has been proven effective in accelerating recovery and increasing independence in post-cesarean section patients.

Conclusion: This study demonstrates that early mobilization intervention is effective in improving mobility in post-cesarean section patients. Prior to the intervention, patients experienced mobility limitations in the form of decreased muscle strength, limited range of motion, pain, and anxiety about moving.

Keywords: Caesarean Section; Early Mobilization; Nursing Care; Physical Mobility; Postoperative Recovery.

INTRODUCTION

Surgery is a medical procedure performed by making an incision or manipulating a specific part of the body using surgical techniques, with the aim of diagnosing, treating, correcting, or preventing a condition or disease. Surgery can be performed invasively (opening body tissue) or minimally invasively (through small incisions or with the aid of specialized instruments such as a laparoscope) (Tika, Sidharti, Himayani, & Rahmayani, 2022). One surgical procedure is a cesarean section. A cesarean section (CS) is a surgical procedure to deliver a fetus through an incision in the abdominal wall and uterus. This procedure is performed when vaginal delivery is not possible or is risky for the mother and fetus (Napisah, 2022).

Globally, the prevalence of cesarean deliveries is showing a significant upward trend. According to WHO data, the rate of cesarean deliveries currently stands at around 21% of all births, up from around 7% in 1990, and is projected to rise to 29% by 2030. This percentage has exceeded the WHO recommended ideal limit of 10–15% of total deliveries. At the national level, the 2018 Basic Health Research results showed that the prevalence of cesarean sections in Indonesia was 17.6%, with a higher trend in urban areas and private health facilities (Sembiring, 2022). Meanwhile, in East Java Province, the rate of cesarean deliveries was recorded as higher than the national average, at 22.36%. This high prevalence rate indicates that cesarean section has become a fairly common method of delivery, both for medical and non-medical reasons (Viandika & Septiasari, 2020).

Post-cesarean section patients generally experience limited mobility due to surgical wound pain, physical weakness, and a fear of movement. These conditions can lead to decreased functional ability and the risk of complications such as deep vein thrombosis, respiratory tract infections, constipation, and impaired wound healing (Solekhudin, Ma'rifah, & Utami, 2022). Mobility limitations due to pain can be addressed with early mobilization exercises. Early mobilization is a nursing intervention that involves moving patients early after surgery, depending on their condition and tolerance. This intervention aims to accelerate the

recovery of physical function, improve blood circulation, improve lung function, accelerate the healing process, and gradually increase mobility. Several studies have shown that early mobilization is effective in reducing pain, accelerating recovery from activity, and preventing postoperative complications (Agustina, 2020).

Over the past 30 years, the incidence of cesarean section or *sectio caesarea* (SC) has increased. One of the complications of SC is postoperative pain. Pain can interfere with the patient's quality of life and reduce the mother's functional status. One of the physiotherapy management that can be done is mobilization (Razan & Wijianto, 2021). Cesarean delivery disrupts the continuity of the tissue that secretes pain receptors, especially after the effects of anesthesia wear off. If pain is not treated promptly, recovery will be delayed, hospitalizations will be longer, and complications and costs will be higher. The global incidence of cesarean sections is 11%, and at Sartika Asih Hospital, Bandung, in 2022, it was 20% of all deliveries, with mothers reluctant to move due to fear and postpartum pain. Early mobilization is one intervention to manage pain (Sulistiawati, Rahmilasari, & Puspitasari, 2024).

Early mobilization is a nursing intervention carried out by moving or activating the patient as soon as possible after surgery according to the patient's condition and tolerance. In post-cesarean section patients, mobilization usually begins within 6 to 24 hours after surgery, starting with breathing exercises and active and passive movements of the extremities while still lying down, then continuing with sitting on the edge of the bed, standing, and gradually walking. Early mobilization has also been shown to reduce pain due to immobilization and increase patient independence and self-confidence. However, its implementation is often hampered by surgical wound pain, patient fear of the risk of sutures opening, physical weakness, and a lack of education and support from healthcare professionals. Therefore, early mobilization must be carried out in a planned, gradual manner, based on the results of the patient's clinical condition assessment, and accompanied by education, support, and motivation from nurses to ensure its safe and effective implementation (Murliana & Tahun, 2022).

Rengganis Marcella Aulia Rachman, Chairul Huda Al Husna*

Nursing Professional Study Program, Muhammadiyah University of Malang
Corresponding author: *Email: chairul@umm.ac.id

The abdominal disease process causes wounds and impacts the mother, the most noticeable impact being acute pain. If post-caesarean pain is not addressed, it can lead to various problems, including lymphopenia, leukocytosis, tachycardia, respiratory depression, delayed uterine involution, and difficulty breastfeeding. Post-caesarean patients require optimal care to accelerate the return of body function, with early mobilization intervention. Early movement exercises can improve blood circulation, which will trigger pain relief (Uzlifatul, 2025).

Childbirth is the process of expelling the products of conception (fetus, placenta, and amniotic fluid) from the uterus through the birth canal or other means. Artificial labor occurs when labor is assisted by external forces, such as forceps extraction or a cesarean section. A cesarean section will inevitably cause scarring. Wound healing is accelerated by early mobilization (Armayanti, Nataningrat, & Tangkas, 2024). Postoperative pain is defined as pain experienced after a surgical intervention. If pain is not controlled, it prolongs the healing process by causing respiratory, excretory, circulatory, and other systemic complications. As a result, some patients die, their quality of life and satisfaction decrease, hospital stays increase, and healthcare costs increase (Cahyawati & Wahyuni, 2023).

Post-laparotomy surgery patients are lazy to mobilize for reasons of pain, fear of something happening to the stitches, even though mobilization is the main factor in accelerating recovery and can prevent post-laparotomy complications. There are many advantages of mobilizing, namely accelerating the wound healing process and preventing infection and

venous thrombosis and disadvantages if the patient does not mobilize, namely the patient does not quickly pass flatus so the patient feels bloated in the stomach, the patient cannot urinate, the stomach becomes stiff, and stiffness occurs in the muscles and blood circulation is not smooth, many disadvantages if the patient does not mobilize will slow down the day of treatment, LOS will increase and will be detrimental to the hospital (Muntiningrum, 2022).

RESEARCH METHOD

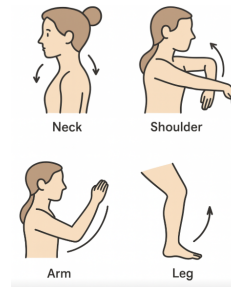
This study used a case study design with a nursing care approach for post-caesarean section patients. The research procedure was carried out through systematic stages, including a comprehensive assessment, establishing a nursing diagnosis, developing an intervention plan, implementing nursing actions, and evaluating the outcomes of care. This study involved post-caesarean section patients, individuals who had undergone a cesarean section. Respondents were those who experienced impaired physical mobility, were within two hours of the surgery, and expressed their willingness to participate. Data collection was conducted using a standard assessment format for post-caesarean section patients, the Medical-Surgical Nursing Assessment.

The SOP for early mobilization support used in this study refers to the established standard operating procedures, as stated in the professional guidelines. Mobilization support is a nursing intervention aimed at helping patients improve their physical activity abilities after surgery. This intervention includes movement exercises for the neck, shoulders, arms, and legs;

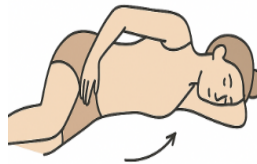
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Nursing Professional Study Program, Muhammadiyah University of Malang
Corresponding author: *Email: chairul@umm.ac.id

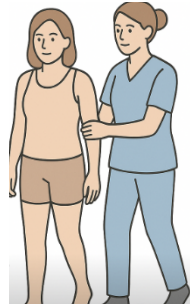
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Provision of right and left lateral positions 2 hours post-operatively.



Use of pillows for back support; adequate supine positioning; sitting exercises at 6 hours post-surgery; and assistance in standing and walking at 8 hours post-surgery.



The measuring tool used to assess the implementation of this intervention is the Standard Operating Procedure (SOP) sheet for mobilization support.

RESEARCH RESULTS

This study involved two post-caesarean section patients who met the inclusion criteria: ≤ 2 hours post-operatively, experiencing impaired physical mobility, and willing to participate. Both patients exhibited common post-operative signs and symptoms, such as urinary catheter placement, abdominal dressing, moderate lochia without clots, blood loss during the procedure, a soft abdomen without distention, and absent bowel sounds. These conditions confirmed that the respondents were in the early phase of post-

operative recovery and required intervention to address mobility limitations.

In their initial condition before the intervention, both respondents complained of difficulty moving their extremities, decreased muscle strength, limited range of motion (ROM), and pain and anxiety when asked to perform activities. Both respondents appeared reluctant to move for fear of increasing pain in the surgical area. Based on the assessment results, the physical mobility level of both patients was in the moderate category

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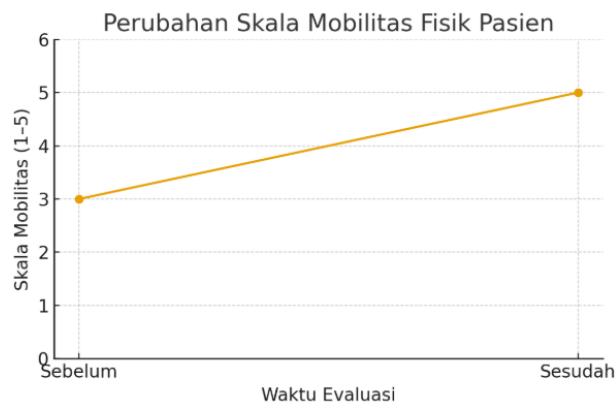
Nursing Professional Study Program, Muhammadiyah University of Malang
Corresponding author: *Email: chairul@umm.ac.id

(scale 3). Early mobilization interventions were provided based on established SOPs, including ROM exercises and right-left tilt changes at 2 hours postoperatively, gradual sitting exercises at 6 hours postoperatively, and

During the intervention, both participants demonstrated positive changes. After ROM exercises, patients reported decreased pain and felt more comfortable moving their extremities. During the sitting phase, both patients were able to maintain the position without experiencing dizziness. Furthermore, standing and walking with assistance could be performed without significant difficulty and with reduced anxiety. These changes were consistent from the first to the third intervention.

assisted standing and walking exercises at 8 hours postoperatively. Each session was conducted in stages while observing the patient's comfort and response throughout the procedure.

In the final evaluation after the entire series of interventions was completed, significant improvements were observed in all physical mobility indicators. Both patients demonstrated increased muscle strength, increased range of motion, decreased pain intensity, decreased anxiety during movement, and decreased limited movement. Overall, the patients' physical mobility level increased from moderate (scale 3) to high (scale 5).



These results indicate that early mobilization is effective in improving mobility and accelerating the recovery process for post-caesarean section patients.

DISCUSSION

The results of this study indicate that post-caesarean section patients experienced various clinical manifestations, such as urinary catheters, abdominal dressings, intraoperative blood loss, absent bowel sounds, and moderate lochia without clots. These manifestations are consistent with descriptions of post-caesarean section conditions in the literature, which state that these physiological changes are a common response to surgery and anesthesia (Santoso, Permatasari, Elsera, & Hamranani, 2024). In addition, patients also experience limited mobility as indicated by

decreased muscle strength, limited range of motion, pain during movement, and anxiety about performing activities, as stated in the assessment of physical mobility disorders in this study.

The early mobilization intervention provided refers to the 2021 Indonesian National Nurses Association Standard Operating Procedure (SOP) and previous research, which includes ROM exercises, position changes, sitting at 6 hours postoperatively, and standing and walking exercises at 8 hours postoperatively (Sabella & Wulandari, 2024). These

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Nursing Professional Study Program, Muhammadiyah University of Malang
Corresponding author: *Email: chairul@umm.ac.id

stages are also in line with other theories that emphasize the need for gradual mobilization starting in the early hours to prevent complications from immobility, improve circulation, and help restore organ function (Farlikhatun & Supardi, 2024).

The results showed a significant improvement in physical mobility, from a scale of 3 (moderate) to a scale of 5 (high), as evidenced by increased muscle strength, range of motion (ROM), decreased pain, and the patient's ability to stand and walk independently after 3 days of intervention. These improvements support findings in other studies, which reported that early mobilization significantly increased postoperative patient activity (Jaya, Amin, Putro, & Zannati, 2023), and other studies showing that regular exercise allows post-CS patients to recover more quickly and be able to perform daily activities independently (Turisna & Panjaitan, 2021).

Previous studies also confirmed that early mobilization at 6–12 hours post-CS was associated with increased activity and accelerated wound healing, in line with physiological mechanisms explaining that mobilization can improve tissue perfusion and reduce pain through muscle activation and peripheral circulation (Sabella, 2024). The consistency of this study's findings with previous studies indicates that early mobilization is an effective, evidence-based intervention for improving physical mobility and accelerating postpartum recovery. This intervention not only improves the patient's physical condition but also increases self-confidence and independence in daily activities, as demonstrated by field reports observing patients walking and meeting their babies in the intensive care unit after three consecutive days of intervention.

According to previous research, post-caesarean section is a common surgical procedure performed in obstetrics to treat various complications of pregnancy or childbirth. The varying number of cesarean sections across hospitals may reflect that cesarean sections are now a necessity and even a choice for mothers in the labor process, but it is not impossible that cesarean delivery will not cause complications. Although cesarean sections have become a routine and relatively safe procedure, post-operative procedures are often

accompanied by various complications and healing challenges (Melanie, Hernayanti, & Noviawati, 2023). Based on the results of the implementation of previous research that has been carried out, there was a decrease in pain intensity in post-caesarean section patients after being given early mobilization application (Cahyani & Maryatun, 2023).

CONCLUSION

This study demonstrates that early mobilization intervention is effective in improving mobility in post-caesarean section patients. Prior to the intervention, patients experienced mobility limitations in the form of decreased muscle strength, limited range of motion, pain, and anxiety about moving. The gradual implementation of early mobilization including ROM exercises, position changes, sitting, standing, and walking provided significant improvements in all physical mobility indicators. Improvement was seen in the change in patient mobility scores from moderate (scale 3) to high (scale 5) after three intervention sessions. These findings confirm that early mobilization is an important, safe, and effective nursing intervention to accelerate recovery, increase independence in activities, and prevent complications due to immobility in post-caesarean section patients.

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Rengganis Marcella Aulia Rachman, Chairul Huda Al Husna*

Nursing Professional Study Program, Muhammadiyah University of Malang
Corresponding author: *Email: chairul@umm.ac.id

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Rengganis Marcella Aulia Rachman, Chairul Huda Al Husna*

Nursing Professional Study Program, Muhammadiyah University of Malang
Corresponding author: *Email: chairul@umm.ac.id

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