

Implementation of Early Mobilization to Overcome the Problem of Physical Mobility Disorders in Mothers After Caesarean Section at K.R.M.T Wongsonegoro Hospital, Semarang

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Article Info	ABSTRACT
<p>Keywords: Early mobilization, Cesarean section, Physical mobility, Postoperative recovery Range of Motion (ROM)</p>	<p>Early mobilization is a critical postoperative intervention to accelerate recovery and prevent complications in mothers who undergo cesarean section. This study aims to describe the implementation of early mobilization and its effects on improving physical mobility among post-cesarean section patients at RSD K.R.M.T Wongsonegoro Semarang. Using a descriptive case study design, two patients who met the inclusion criteria were observed during the early postoperative phase. Data were obtained through direct observation and nursing documentation, focusing on mobility performance before and after the intervention. Early mobilization consisted of Range of Motion (ROM) exercises performed for 10–15 minutes over two consecutive days. The results showed that both patients experienced improvements in ease of movement and walking ability. The first patient, initially requiring total assistance, progressed to moving and ambulating with minimal assistance using supportive devices. The second patient, who initially demonstrated minimal mobility with dependency, improved to performing movements and walking with reduced assistance and without devices. These findings indicate that early mobilization effectively enhances muscle strength, blood circulation, and functional independence while reducing postoperative discomfort and fear of movement. Factors such as motivation, pain tolerance, and family support also influenced the level of progress achieved by each patient. Overall, early mobilization contributed positively to postoperative rehabilitation and supported a faster return to functional mobility. The study highlights the importance of integrating structured early mobilization into nursing care to optimize physical recovery and improve the overall quality of life for post-cesarean section mothers.</p>
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INTRODUCTION

Emphasize the uniqueness of this research compared to previous studies. Childbirth is a physiological process characterized by the onset of regular uterine contractions that gradually result in cervical dilation, ultimately allowing the fetus,

placenta, and fetal membranes to be expelled from the mother's uterus through the birth canal naturally. This process marks the final stage of pregnancy and indicates the mother's readiness to deliver her baby, involving complex hormonal, physical, and emotional changes (Johariyah & Wahyu, 2022).

In general, childbirth can be classified into several types. First, spontaneous delivery, which is the natural birth process that occurs solely through the mother's own efforts without external intervention. Second, assisted or instrumental delivery, which requires medical assistance or tools such as forceps or a cesarean section to help deliver the baby. Third, induced labor, which is stimulated using medications such as pitocin or prostaglandins to initiate uterine contractions when labor does not begin spontaneously (Asih, 2015).

A cesarean section is a surgical procedure performed by making incisions in the abdominal wall and uterus to deliver the baby. This procedure is typically carried out when vaginal delivery is not possible or poses a high risk to the mother or fetus. According to (Oxorn, H., & Forte, 2015), the indications for a cesarean section may be absolute or relative. Absolute indications include conditions where vaginal delivery is entirely impossible, such as severe pelvic narrowing, abnormal fetal presentation, or tumors obstructing the birth canal. Meanwhile, in relative indications, vaginal delivery is still possible, but the surgical procedure is considered medically safer for both mother and baby. Conditions that fall under relative indications include severe preeclampsia, a history of previous cesarean section, or signs of fetal distress. Therefore, the decision to perform a cesarean section must be based on a comprehensive evaluation of risks and benefits by the medical team.

Data from the National Basic Health Research (Riskesdas Jawa Tengah, 2018) show that the rate of cesarean section deliveries in Indonesia reached 17.6% of all births. In Central Java Province, the rate is slightly lower at 17.10% (Riskesdas Jawa Tengah, 2018). These figures indicate an increasing trend of cesarean deliveries in recent years, which may be influenced by factors such as improved healthcare facilities, patient preference, and specific medical considerations. Differences in delivery methods also impact the postpartum period, as mothers who undergo cesarean sections generally require a longer recovery time compared to those who give birth vaginally, due to the surgical wounds in the abdominal and uterine walls that require special care.

The postpartum period (puerperium) is the phase during which the woman's reproductive organs recover after childbirth, beginning from the expulsion of the placenta until the organs return to their pre-pregnancy condition, typically lasting around six weeks (Yuliana, S., & Hakim, 2020). During this period, the mother undergoes various physiological and psychological adjustments. Postpartum nursing care begins within the first six hours after delivery and continues until 42 days postpartum. Its primary goal is to provide health education to mothers regarding self-care and infant care, which includes mobilization, personal hygiene, nutritional intake, breastfeeding and breast care, newborn care, immunization, and family planning education. Proper postpartum care is essential to

prevent complications, accelerate recovery, and support the overall well-being of both mother and baby.

In the immediate postpartum period, the first 24 hours after delivery, the mother is in a critical phase with a high risk of postpartum hemorrhage. Therefore, healthcare providers must conduct continuous, close monitoring of the mother's condition. One important intervention to maintain physical stability after a cesarean section is early mobilization, typically introduced through education provided by nurses or midwives (Azizah, N., & Rafhani, 2019). Early mobilization plays a key role in accelerating recovery, preventing complications such as thrombosis, and improving physical fitness after surgery.

The ERACS (Enhanced Recovery After Cesarean Section) approach offers a more comfortable operative experience with reduced pain and faster recovery compared to conventional cesarean procedures (Hanifah, N., Sari & Lestari, 2023); (Ratnasari, I., & Yatsi, 2020). Traditionally, patients undergoing conventional cesarean sections are not allowed to move for up to 12 hours (Jalilah, 2022); (Talitha, 2022). In contrast, ERACS allows patients to sit within two hours after surgery. Mothers less than 24 hours post-cesarean can already perform light activities, such as urinating or walking independently without significant fear of pain (Adiningrum, 2022); (Kruse, C. S., Mileski, M., & Moreno, 2021).

Mobilization or mobility refers to a person's ability to perform body movements freely, in a coordinated and orderly manner. Early mobilization is physical activity performed immediately after a surgical procedure. During mobilization, the body engages in joint movements, changes in position, and adjustments in posture and body mechanics (Indryani, 2021).

Early mobilization begins with simple movements performed on the bed, followed by more complex activities such as sitting and walking gradually. This activity plays an essential role for postoperative patients, particularly in helping maintain independence, accelerating recovery, and restoring normal physiological function. Additionally, early mobilization helps prevent complications such as deep vein thrombosis, respiratory disturbances, and muscle weakness due to prolonged immobility. Early mobilization is generally performed within the first 6 to 24 hours after surgery. The stages include deep breathing exercises, effective coughing, upper and lower extremity movements, turning to the right and left sides, sitting at the edge of the bed, standing, and walking with assistance from nurses or family members. A gradual and well-structured mobilization plan helps improve blood circulation, enhance lung ventilation, and accelerate overall healing (Dzulhidayat, 2022).

A patient's ability to perform mobilization and range-of-motion exercises is influenced by various factors. These factors include age, developmental stage, previous surgical history, lifestyle, disease or trauma, education level, and the information provided by healthcare workers. Each of these factors plays an important role in determining how well a patient can adapt and participate in the postoperative recovery process. One form of support provided by healthcare professionals is health education. Education is an

interactive process between healthcare workers and patients designed to improve knowledge, attitudes, and skills. Through this educational process, patients are encouraged to understand their health condition, recognize necessary actions, and adopt behaviors that support recovery (Mahendra, R., Putri, A., & Lestari, 2019).

Based on a preliminary study conducted by the researcher in May 2025 through interviews with nurses at RSD K.R.M.T Wongsonegoro Semarang, it was found that there were 27 post-cesarean section patients. Observations of two patients who had been given education on early mobilization and breastfeeding showed that 70% (one patient) performed total care activities such as moving their legs and turning right and left, while 30% (one patient) performed partial care activities such as sitting, walking around the bed, and going to the bathroom.

This finding highlights the uniqueness of this research compared to previous studies because it focuses on an in-depth case analysis of early mobilization implementation within the first 24 hours post-cesarean section in a real clinical setting, examining individual patient responses, barriers, and the gap between mobilization education and actual patient practice. Therefore, the purpose of this study is to describe the implementation of early mobilization and analyze its role in improving physical mobility among post-cesarean section mothers.

METHODS

The study employed a descriptive case study design to examine the implementation of early mobilization and its effects on physical mobility among post-cesarean section patients. This design allowed the researcher to conduct an in-depth assessment of patient conditions and responses throughout the intervention process. Research subjects were selected using predefined inclusion and exclusion criteria. Inclusion criteria consisted of post-cesarean section patients who were in the first postoperative day, willing to participate, and demonstrated cooperative behavior. Exclusion criteria included patients with communication barriers, those who did not undergo cesarean surgery, or individuals who declined participation.

Data collection focused on documenting changes in patients' mobility following early mobilization. The primary instruments used were observation sheets and nursing care documentation, which recorded mobility abilities before and after the intervention. Direct observations were supplemented by secondary information obtained from the ward team leader, the patients, and their families to ensure the accuracy of clinical data.

The study was conducted in the Brotojoyo 3 Ward of RSD K.R.M.T Wongsonegoro Semarang on May 12, 2025. Collected data were then analyzed descriptively and presented in both narrative and tabular forms. The narrative descriptions detailed changes in ease of movement and walking ability, while tables provided clear comparisons between pre- and post-intervention mobility. The analysis focused on identifying measurable improvements resulting from the early mobilization procedures.

Throughout the research process, ethical principles were strictly maintained.

Informed consent was obtained from all participants; anonymity and confidentiality were ensured through secure data handling. The principles of beneficence and non-maleficence were applied by ensuring that all interventions were safe and posed no harm to the participants. The researcher also upheld honesty in conveying study objectives, fairness in treating all respondents equally, fidelity in fulfilling research responsibilities, respect for voluntary participation, and accountability for all activities conducted during the study.

RESULTS AND DISCUSSION

Case Study Results

The case study involved two post-cesarean section patients, Mrs. B and Mrs. S, who received nursing care including assessment, diagnosis, intervention planning, implementation, and evaluation. Mobility assessment was conducted before and after two days of early mobilization using ROM (Range of Motion) exercises for 10–15 minutes per session.

Table 4.1 Data Before and After the Implementation of Early Mobilization in Post-Cesarean Section Patients

Name	Pre-test – Ease of Movement	Pre-test – Walking	Post-test – Ease of Movement	Post-test – Walking
Mrs. B	With assistive devices	With assistive devices	Moved/walked with minimal ability	Moved/walked with minimal ability
Mrs. S	With total assistance	With total assistance	With assistive devices	With assistive devices

Based on Table 4.1, both respondents demonstrated improved mobility after early mobilization. Mrs. B, who initially required total assistance for movement and ambulation, progressed to moving and walking with minimal ability using assistive devices. Likewise, Mrs. S, who initially required total assistance, became able to move and walk with assistive devices, indicating improvement in muscle strength and mobility.

Table 4.2 Data Before and After the Implementation of Early Mobilization in Post-Cesarean Section Patients

Name	Pre-test – Ease of Movement	Pre-test – Walking	Post-test – Ease of Movement	Post-test – Walking
Mrs. B	Minimal ability, without assistive devices	Minimal ability, without assistive devices	Moved without assistance	Walked without assistance
Mrs. S	Minimal ability	Minimal ability	Minimal ability, without assistive devices	Minimal ability, without assistive devices

Based on Table 4.2, further improvements were observed. Mrs. B developed full independence in moving and walking after consistent ROM exercises. Mrs. S also showed

enhanced mobility, maintaining minimal ability but no longer requiring assistive devices. These results indicate that early mobilization effectively improves physical function in post-cesarean section patients.

Discussion

The results of this case study show that early mobilization through ROM (Range of Motion) exercises had a significant positive impact on improving physical mobility in both post-cesarean section patients, Mrs. B and Mrs. S. The improvements observed within two days of intervention indicate that early mobilization is an effective nursing activity that can be implemented shortly after cesarean surgery.

At the beginning of the intervention, both patients experienced limitations in ease of movement and walking ability, which is consistent with common postoperative conditions following cesarean section, where pain, reduced muscle activation, and fear of movement often hinder early mobility. Mrs. B initially required total assistance for basic movements such as turning, sitting, and standing. Her inability to move independently suggests that postoperative pain and psychological factors significantly influenced her early mobility status. However, after participating in structured ROM exercises, Mrs. B demonstrated notable improvement, transitioning from full dependence to minimal assistance with the use of assistive devices. In the subsequent assessment (as shown in Table 4.2), she progressed even further and achieved independent movement and ambulation without assistive devices, indicating substantial enhancement in muscle strength, balance, and confidence.

Mrs. S, on the other hand, showed slower initial progression. At baseline, she required total assistance for both movement and walking, and her fear that the surgical sutures might open contributed to her reluctance to perform mobilization efforts. Despite this, gradual ROM exercises supported her ability to adapt, and by the end of the two-day intervention, she demonstrated measurable improvement—moving and ambulating with minimal ability and without assistive devices. Although the level of improvement was not as pronounced as in Mrs. B, the progress observed still reflects the effectiveness of early mobilization when performed consistently and accompanied by appropriate guidance and reassurance.

The difference in progression between the two respondents highlights the individualized nature of postoperative recovery. Several factors influenced their outcomes, including pain levels, psychological readiness, motivation, and family support. Mrs. B showed faster improvement, likely due to higher motivation and better tolerance to discomfort, while Mrs. S required more encouragement due to higher anxiety and fear. This finding emphasizes that early mobilization must be tailored to each patient's physical and emotional condition to maximize its benefits.

The improvements observed in both patients align with existing literature stating that early mobilization enhances circulation, prevents deep vein thrombosis, reduces muscle stiffness, and accelerates functional recovery (Hidayat, 2017). Physiologically, ROM exercises promote blood flow to muscle tissues, stimulate motor activity, and reduce

postoperative stiffness, allowing patients to regain functional independence more quickly. Psychologically, early mobilization helps reduce fear of movement, increases confidence, and fosters a sense of control over the recovery process. The gradual progress seen in both patients illustrates how combining physical exercises with therapeutic communication contributes to better patient outcomes.

The findings also underline the critical role of nurses in the success of early mobilization. In this study, nurses provided not only physical assistance but also motivation, education, and continued evaluation during the intervention. Their involvement ensured that mobilization activities were carried out safely and gradually according to the patient's readiness. Consistent nursing supervision allowed for timely adjustments in exercise intensity, which is essential in preventing strain or discomfort during recovery.

Other influencing factors such as pain management, family support, and patient compliance were also evident. Mrs. S's slower progression illustrates the importance of addressing psychological barriers and pain concerns early in the recovery process. Without adequate reassurance and encouragement, patients may hesitate to participate in mobilization, thereby prolonging recovery time. Meanwhile, Mrs. B's stronger motivation and willingness to follow instructions contributed significantly to her faster improvement.

These findings are supported by previous research indicating that early mobilization significantly shortens recovery time and increases physical mobility in postoperative patients (Solehati, 2017). Thus, the improved mobility seen in both respondents reinforces the conclusion that early ROM exercises are beneficial and should be integrated into standard postoperative nursing care for cesarean patients.

In summary, the implementation of early mobilization for two post-cesarean section patients resulted in improved physical mobility, with variations in progress influenced by individual differences in pain, motivation, psychological readiness, and external support. Despite these differences, both patients demonstrated positive outcomes, affirming that early mobilization is an effective intervention for enhancing postoperative recovery and promoting independence in daily activities.

CONCLUSION

Based on the findings obtained from two post-cesarean section patients (Mrs. B and Mrs. S) regarding the implementation of early mobilization through Range of Motion (ROM) exercises, it can be concluded that early mobilization has a positive and measurable impact on improving physical mobility in the early postoperative period. Prior to the intervention, both patients demonstrated significant limitations in movement and ambulation, requiring full assistance from nursing staff. After two consecutive days of early mobilization with sessions lasting 10–15 minutes, both respondents showed improved ease of movement and walking ability. The first patient (Mrs. B) progressed from requiring total assistance to being able to move and walk with minimal ability without full support from the nurse. Meanwhile, the second patient (Mrs. S), who initially relied entirely on assistance, demonstrated improvement by becoming able to move and ambulate with the help of

assistive devices. These variations in outcomes indicate that the effectiveness of early mobilization is influenced by individual factors such as pain tolerance, motivation, psychological readiness, and family support. Overall, the study confirms that early mobilization is an effective nursing intervention for accelerating postoperative recovery in post-cesarean section patients. The intervention contributes to increased muscle strength, improved circulation, reduced discomfort related to immobility, and enhanced independence in daily activities. Suggestions for Further Research Future studies should involve a larger sample size to allow broader generalization of findings and to compare mobilization outcomes across different demographic and clinical characteristics. Further research may explore the use of specific mobilization protocols or compare ROM-based mobilization with other early activity interventions. Additional studies should also examine long-term outcomes of early mobilization, including recovery duration, complication rates, and patient quality of life. It is recommended that future researchers evaluate the role of supportive factors such as pain management strategies, family involvement, and educational approaches in optimizing the success of early mobilization programs. Therefore, it can be concluded that early mobilization is an important and effective nursing intervention for post-cesarean section patients, as it can accelerate the healing process, prevent complications related to immobility, and enhance the overall quality of life during the recovery period.

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