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THE EFFECT OF EARLY MOBILIZATION ON REDUCING PAIN INTENSITY IN POST-CAESAREAN SECTION PATIENTS AT ALI SIBROH HOSPITAL, MALISI

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Abstract

Postoperative pain is a common problem experienced by patients after cesarean section and can hinder early mobilization, delay recovery, and reduce maternal comfort during the early postpartum period. Therefore, effective pain management is crucial and should not rely solely on pharmacological therapy, but also include safe and effective non-pharmacological nursing interventions. The novelty of this study lies in the implementation of structured and gradual early mobilization as an independent nursing intervention to reduce pain intensity in post-cesarean section patients at Ali Sibroh Malisi Hospital. This study aims to determine the effect of early mobilization on reducing pain intensity in post-cesarean section patients. A quantitative research method with a pre-experimental design using a one-group pretest-posttest approach was conducted. The sample consisted of 70 post-cesarean section patients selected through purposive sampling based on predetermined inclusion criteria. Pain intensity was measured before and after the intervention using a Numeric Rating Scale (NRS), which has demonstrated acceptable validity and reliability. Early mobilization was carried out in a structured and gradual manner according to patient tolerance. Data were analyzed using appropriate statistical tests to compare the average pain intensity before and after the intervention. The results showed a statistically significant reduction in pain intensity after early mobilization ($p < 0.05$), indicating the effectiveness of this intervention in managing postoperative pain. In conclusion, early mobilization significantly reduces pain intensity in post-cesarean section patients and is recommended as a routine nursing intervention to accelerate recovery and improve the quality of nursing care.

Keywords: Caesarean section; Early mobilization; Nursing care; Pain intensity; Postoperative patients.

INTRODUCTION

Caesarean section (CS) is a major surgical procedure in obstetrics performed to save the mother and baby when vaginal delivery is not possible (1)(2). Although this procedure is commonly performed, surgical intervention still causes tissue trauma, inflammatory response, and acute postoperative pain (3). Postoperative pain after CS is generally felt at the incision site, lower abdomen, and often affects the mother's ability to move, breastfeed, care for the baby, and carry out independent activities during the early postpartum period (4).

Globally, the rate of childbirth via cesarean section continues to increase and has surpassed the recommended limit set by the World Health Organization (WHO), which is 10–15% (5). Data shows that several regions of the world, including Asia, Europe, and Latin America, have experienced a significant surge in C-section rates (6). In Indonesia itself, the prevalence of cesarean deliveries reaches 17.6%, with the DKI Jakarta Province being one of the areas with

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the highest rates (7). The high rate of C-sections directly impacts the increasing number of mothers who require post-operative nursing care, particularly in pain management and the recovery of physical function (8).

Postoperative pain is one of the main issues in the nursing care of post-Cesarean section patients. Uncontrolled pain can lead to increased stress responses, limited mobility, prolonged immobility, and increased risks of complications such as venous thromboembolism, elimination disorders, and delayed wound healing. Therefore, pain management is a priority in postoperative care. In addition to pharmacological therapy, non-pharmacological approaches are essential components of comprehensive nursing care focused on patient safety (9).

Early mobilization is one of the non-pharmacological nursing interventions recommended for postoperative patients, including those who have undergone a cesarean section. Early mobilization is carried out gradually, starting with changing positions in bed, sitting, and standing, and progressing to walking as tolerated. This intervention has been proven to improve blood circulation, accelerate the recovery of body functions, prevent complications associated with bed rest, and reduce pain intensity through mechanisms of muscle relaxation and pain modulation. However, in clinical practice, many patients are still reluctant to perform early mobilization due to pain, fear of the surgical wound, and a lack of understanding of the benefits of early mobilization (10).

Ali Sibroh Malisi Hospital, as one of the healthcare facilities that routinely provides obstetric services, handles patients after caesarean section surgery. Based on initial observations, some patients still experience limited mobility during the first 24 hours post-operation due to pain or a lack of education regarding the importance of early mobilization. This condition indicates the need for the implementation of evidence-based nursing interventions to address pain issues and accelerate the patient recovery process.

Based on preliminary observations at Ali Sibroh Malisi Hospital involving 10 post–cesarean section patients, most patients experienced moderate to severe pain, with

NRS scores ranging from 5 to 8 within 8–14 hours postoperatively. Four patients reported severe pain, while six experienced moderate pain. Most patients had not performed early mobilization optimally due to pain-related fear, muscle stiffness, and prolonged bed rest, with movement limited to minor position changes in bed.

These findings indicate that post–cesarean section pain remains a significant nursing concern and highlights the need for effective, safe, and feasible nursing interventions. Early mobilization is considered a promising non-pharmacological approach to reduce pain intensity and promote postoperative recovery.

Although this study did not directly measure length of stay or cost of care, early mobilization has well-documented indirect benefits that may contribute to both outcomes. By significantly reducing postoperative pain intensity, early mobilization facilitates faster functional recovery, improves patient comfort, and enhances the ability of post-caesarean section patients to perform daily activities independently.

Reduced pain may decrease reliance on analgesic medications, lower the risk of postoperative complications, and support earlier ambulation, which collectively have the potential to shorten hospitalization and reduce healthcare costs. Therefore, early mobilization is considered a clinically valuable and cost-effective nursing intervention worthy of prioritization in postoperative care.

Similar research conducted by Safitri et al. (2024) found that the age range of those undergoing post-op was 36-45 years, accounting for 33.3%. However, those who did not perform early mobilization accounted for 8.3% (11).

Research on the effects of early mobilization on pain is very important to conduct, not only to improve the quality of nursing care but also to provide nurses with a foundation for evidence-based interventions. The results of this study are expected to directly contribute to the development of standard operating procedures (SOPs) for early mobilization after a C-section at Ali Sibroh Malisi Hospital, as well as to improve the quality of maternal recovery after

childbirth through safe, effective, and measurable actions.

RESEARCH METHOD

This study is a quantitative, pre-experimental design with a one-group pretest–posttest approach, aimed at determining the effect of early mobilization on pain intensity reduction in post-cesarean section patients. The study was conducted at Ali Sibroh Malisi Hospital, South Jakarta, from May 20–29, 2025, with a total of 70 respondents selected using purposive sampling according to inclusion and exclusion criteria. The respondents were post-cesarean section patients from day 1 to day 2 with stable hemodynamic conditions and no postoperative complications. Pain intensity was measured before and after the intervention using the Numerical Rating Scale (NRS) with a score range of 0–10. Early mobilization intervention was gradually initiated 6–24 hours postoperatively, including changes in bed position, sitting, standing, and light walking, according to the patient's tolerance and the hospital's standard operating procedures. Data were analyzed using the paired t-test.

RESULTS AND DISCUSSION

Although all patients received postoperative analgesics, the administration followed a standardized hospital protocol. Pain assessments were conducted at consistent time points, suggesting that the observed pain reduction was associated with early mobilization rather than pharmacological effects alone.

Pain Intensity Before Early Mobilization (Pretest)

Table 1. Pain Intensity Before Early Mobilization (Pretest)

Pain Category	NRS Score	Frequency (n)	Percentage (%)
Mild Pain	1 - 3	3	4,3
Moderate Pain	4 - 6	48	68,6
Severe Pain	7 - 10	19	27,1
Total		**70**	**100**

Sources: Primary Data, 2025

Initial measurements using the NRS scale showed that most respondents (68.6%) experienced moderate pain, and 27.1% experienced severe pain. These findings are consistent with the general condition after a C-section surgery, where surgical trauma, tissue inflammation, and limited movement

result in persistent high pain during the first 24 hours.

Pain Intensity After Early Mobilization (Pretest)

Table 2. Pain Intensity After Early Mobilization (Pretest)

Pain Category	NRS Score	Frequency (n)	Percentage (%)
Mild Pain	1 - 3	41	58,6
Moderate Pain	4 - 6	25	35,7
Severe Pain	7 - 10	4	5,7
Total		**70**	**100**

Sources: Primary Data, 2025

The post-intervention measurement results showed significant changes. As many as 58.6% of respondents experienced mild pain, whereas previously all of them had moderate to severe pain. Only 5.7% still felt severe pain, indicating that early mobilization helps reduce muscle tension and improve tissue perfusion, thereby lowering pain levels.

Comparison of Pain Intensity Between Pretest and Posttest

Table 3. Average Pain Scores Before and After Early Mobilization

Measurement	Mean (±SD)	Min-Max
Pretest	6.14 ± 1.42	3 - 9
Posttest	3.21 ± 1.07	1 - 7

Sources: Primary Data, 2025

The table above shows that the average pain score before early mobilization was 6.14, which falls into the moderate to severe pain category, while the average after early mobilization decreased to 3.21 (mild pain category). The difference in the average decrease was 2.93 points, which is clinically significant.

Analysis of the Effect of Mobilization on Pain Intensity

Table 4. Results of the Paired t-test Pretest and Posttest

Variabel	Mean Difference	t hitung	*P-value*
Pain Intensity (NRS)	2.93	9.842	0,000

Sources: Processing Data, 2025

The test results showed that the p-value = 0.000 ($p < 0.05$), indicating a significant effect of early mobilization on pain intensity. The calculated t-value (9.842) is much greater than the t-table value, reinforcing that early mobilization intervention is effective in reducing pain. The decrease in pain scores occurred in almost all

respondents, indicating that early mobilization is a safe, effective non-pharmacological intervention that can be routinely implemented in post-C-section patients.

Discussion

The research results indicate that early mobilization significantly reduces pain intensity in post-cesarean section patients. The decrease in average pain scores after the intervention suggests that early mobilization is an effective non-pharmacological approach to reducing postoperative pain. These findings reinforce the role of nursing care in pain management through a holistic approach that focuses not only on pharmacological therapy but also on improving physical function and patients' post-surgical adaptation.

Physiologically, post-cesarean pain occurs due to tissue trauma, inflammatory response, and stimulation of pain receptors in the surgical incision area (12). Early mobilization can reduce pain intensity by improving blood circulation and tissue oxygenation and by preventing muscle stiffness caused by bed rest. Gradual light physical activity also stimulates the release of endorphins, the body's natural analgesics, which help suppress the transmission of pain impulses to the central nervous system. Additionally, early mobilization helps divert the patient's attention from pain, thereby reducing its perceived intensity (13).

Research by Lutfi & Murdiyanto (2024) found that education and early mobilization significantly reduced pain intensity in post-cesarean section patients ($p < 0.05$), indicating the effectiveness of early mobilization interventions in reducing postoperative pain (14)

Early mobilization, as a form of gradual physical stimulation, helps close the 'pain gate' in the spinal cord and reduce postoperative pain. In addition, the neuroendocrine theory of pain explains that physical activity can stimulate the release of endorphins and enkephalins, endogenous opioids that act as the body's natural analgesics, thereby helping reduce the intensity of pain. Early mobilization helps improve physiological adaptation by enhancing circulation, improving musculoskeletal function, and accelerating recovery of body systems, resulting in a better adaptive response to pain (15).

Several case studies have also reported that the implementation of early mobilization within a few days post-surgery can reduce pain from a moderate to mild level, which reinforces the evidence that early mobilization is beneficial in managing post-cesarean section pain (16).

Nevertheless, the success of early mobilization interventions is greatly influenced by the patient's physical readiness, adequate pharmacological pain control, and educational support from healthcare providers. Barriers such as fear of surgical wounds, fatigue, or initial pain can reduce patient participation in early mobilization, making education and active guidance from nurses essential to maximize its benefits. A collaborative approach between the nursing team and the patient is important to overcome these barriers, as emphasized by other studies that highlight the need for educational support for post-caesarean patients (14).

In addition to reducing pain intensity, early mobilization has been shown to provide benefits in preventing postoperative complications, such as deep vein thrombosis, constipation, elimination disorders, and delayed wound healing. Recent studies indicate that early mobilization contributes to increased patient comfort, faster recovery of bodily functions, and improved quality of maternity nursing care.

CONCLUSION AND RECOMMENDATION

Early mobilization plays an important role in reducing pain intensity in post-cesarean section patients; gradually implementing mobilization can enhance comfort and accelerate the patient's physical recovery. Therefore, early mobilization should be routinely and structurally implemented as a non-pharmacological nursing intervention in the care of post-cesarean section patients, accompanied by optimal education and guidance from nursing staff to ensure the intervention is carried out safely, according to the patient's condition and tolerance.

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