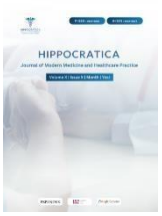

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The Application of Early Mobilization for Postoperative Pain Following a Cesarean Section at RSI PKU Muhammadiyah Pekajangan, Pekalongan Regency

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Abstract

Cesarean section deliveries involve major abdominal incisions that cause intense postoperative pain, often leading to prolonged immobilization, heightened anxiety, and delayed recovery. Non pharmacological nursing interventions are critical to optimize recovery and mitigate reliance on heavy opioid analgesics. This clinical study evaluates the efficacy of progressive early mobilization on postoperative pain intensity, psychological adaptation, and functional safety among peripartum patients. An empirical descriptive case study with a sequential pre test and post test approach was conducted at RSI PKU Muhammadiyah Pekajangan in April 2026, involving five purposively selected postpartum mothers. Pain severity was systematically measured using the standardized Visual Analog Scale before and after a staged physical mobility protocol. The structured mobilization framework induced a uniform reduction of exactly three units on the pain scale for every subject, successfully shifting the cohort from moderate or severe distress to mild pain classifications. Furthermore, excellent wound integrity, complete hemodynamic stability, and reduced kinesiophobia were observed throughout all functional milestones. Progressive early mobilization represents a highly effective, safe, and independent nursing intervention that accelerates functional independence and safely alleviates post cesarean discomfort.

Keywords : *Cesarean Section, Early Mobilization, Postoperative Pain, Functional Recovery, Nursing Care.*

INTRODUCTION

The global escalation of cesarean section delivery rates over the past few decades has emerged as a critical obstetric challenge, sparking extensive clinical discourse regarding optimal postoperative recovery protocols. In contemporary obstetric and gynecological science, the surgical trauma inflicted by a major abdominal incision inevitably triggers a cascade of inflammatory mediators, leading to severe acute postoperative pain that significantly hinders maternal mobilization, compromises early bonding, and prolongs hospitalization (Asmuji & Indriyani, 2021). The current paradigm in modern healthcare practice strongly emphasizes the implementation of multimodal care strategies aimed at neutralizing these physiological stressors while minimizing the burden of severe clinical sequelae. Globally, clinical guidelines are increasingly prioritizing evidence-based non-pharmacological interventions to complement standard care, recognizing that a reliance on conventional monotherapy often fails to address the comprehensive recovery needs of the postpartum patient. Consequently, the exploration of innovative physical rehabilitation strategies during the hyperacute postoperative phase has become a dominant theme in maternal health research, reflecting a universal shift toward proactive, patient-centered clinical management.

Previous clinical literature has extensively documented the potential benefits of early physical movement in accelerating systemic recovery and reducing the intensity of surgical discomfort. Investigations into early mobilization protocols indicate that structured, progressive physical activity within the initial postpartum hours can effectively disrupt the cycle of pain and immobility by stimulating local blood flow, mitigating muscular rigidity, and facilitating the clearance of noxious inflammatory agents from the surgical site (Sukmawati, 2025). Concurrently, specialized clinical frameworks such as Enhanced Recovery After Surgery (ERAS) have demonstrated considerable

success in optimizing maternal clinical satisfaction and stabilizing hemodynamic parameters through the systematic integration of immediate postoperative movement (Wandi et al., 2025). These findings align with broader scientific evidence suggesting that early mobilization not only exerts a positive influence on the musculoskeletal and gastrointestinal systems but also plays a vital role in alleviating secondary surgical side effects such as severe postoperative nausea and vomiting (Yanti & Yudhoyono, 2024). Furthermore, the physiological mechanisms underlying early ambulation are closely linked to the modulation of central pain pathways, where controlled physical stimulation helps restore normal functional compliance and minimizes the subjective perception of tissue trauma.

Despite these documented insights, a critical synthesis of the current literature reveals prominent empirical inconsistencies and significant conceptual gaps regarding the uniform application of mobilization protocols across diverse healthcare settings. While specialized multimodal paradigms and tailored opioid-sparing techniques are frequently celebrated in highly resourced academic medical centers for their efficacy in narrowing the post-discharge recovery gap, their practical execution within community-based or religiously affiliated hospitals remains highly fragmented (Sezerano & Niyonkuru, 2026). Moreover, current orthopedic and general surgical rehabilitation models often utilize highly structured, randomized protocol designs to address complex structural instabilities, yet such methodological rigidity is rarely translated effectively into acute obstetric settings where maternal-fetal dynamics create a unique set of clinical challenges (Soares et al., 2026). This disparity highlights a significant knowledge gap, as existing research frequently overlooks how localized patient demographics, regional cultural variations, and institutional infrastructure limitations affect the fidelity of early mobilization interventions. The lack of standard operational consistency across peripheral healthcare facilities creates a pronounced empirical disconnect, leaving the actual therapeutic threshold of early mobilization in standard regional hospitals largely uncharacterized.

The scientific and practical urgency of addressing this clinical gap is underscored by the immediate risks associated with prolonged maternal immobility, which can severely compromise long-term healthcare outcomes. Inadequate pain control and a subsequent lack of physical movement frequently result in severe systemic complications, including deep vein thrombosis, delayed tissue healing, pulmonary congestion, and profound psychological distress characterized by heightened maternal anxiety and helplessness (Yudianto & Fernanda, 2024). In the context of maternal care, these physiological impediments do not merely represent individual clinical setbacks; they directly threaten the integrity of the mother-infant dyad by delaying the initiation of breastfeeding and preventing the mother from performing essential newborn care activities. From an institutional perspective, the failure to implement a consistent, non-pharmacological pain management protocol leads to an unsustainable escalation in healthcare costs, prolonged hospital stays, and a substantial drain on nursing resources due to repetitive, uncoordinated interventions. Therefore, resolving the operational ambiguities surrounding early mobilization in regional medical institutions is a pressing clinical necessity that holds profound implications for both public health metrics and institutional resource allocation.

Within this clinical landscape, the current inquiry is strategically positioned to bridge the gap between high-level theoretical protocols and the practical realities of community-based obstetric care by evaluating a localized implementation strategy. This research shifts the focus away from idealized, resource-intensive clinical trials toward a pragmatic, setting-specific evaluation of progressive early mobilization within a prominent regional religious hospital, specifically RSI PKU Muhammadiyah Pekajangan in Pekalongan Regency. By examining the operational challenges unique to this environment, such as low baseline health literacy among patients from rural or mountainous areas and prevailing institutional misconceptions regarding surgical wound integrity, this study provides a crucial contextualized perspective that is missing from broader international datasets. This investigation moves beyond simple descriptive analysis to offer a critical, systematic assessment of how a structured, step-by-step mobilization framework can be successfully integrated into daily nursing routines despite limited external resources. Consequently, this work establishes a distinct scientific benchmark, demonstrating that localized empirical evidence is essential for validating the adaptability and scalability of global obstetric recovery guidelines within regional healthcare networks.

The primary objective of this investigation is to evaluate the therapeutic application of progressive early mobilization on the reduction of postoperative pain intensity among patients undergoing cesarean section delivery at RSI PKU Muhammadiyah Pekajangan, Pekalongan Regency. Methodologically, this study introduces a rigorous case-study design utilizing a pre-test and post-test

approach with multiple respondents, utilizing the standardized Visual Analog Scale to capture precise, chronological changes in pain perception before and after the phased physical intervention. Teoretically, this research contributes to contemporary nursing science by clarifying the multi-systemic physiological benefits of early ambulation within a culturally specific patient population, thereby advancing the conceptualization of independent nursing interventions in acute postoperative settings. Methodologially, this study offers a scalable operational framework that outlines specific, gradual physical milestones adapted to the physical limitations of regional patients, providing a practical blueprint for clinical practitioners. Ultimately, these insights provide a foundation for developing evidence-based clinical pathways that enhance maternal autonomy, optimize institutional healing timelines, and reduce dependence on conventional pharmacological agents in regional obstetric care.

RESEARCH METHODS

This empirical investigation employs a descriptive case study design with a sequential pre test and post test approach to evaluate the tactical implementation of early mobilization protocols among postpartum patients (Hidayat, 2023). The research was conducted in April 2026 within the maternity ward of RSI PKU Muhammadiyah Pekajangan located in Pekalongan Regency, involving a purposively selected cohort of five postoperative cesarean section patients who met the stringent inclusion criteria of being aged between 20 and 35 years, exhibiting stable hemodynamic parameters within the initial 24 hours following major abdominal incision, and demonstrating full consciousness (Sugiyono, 2022). Patients exhibiting severe systemic complications, critical obstetric emergencies, or musculoskeletal disorders that actively prohibited independent movement were excluded from the study cohort. The structured data collection procedure commenced with an initial baseline assessment of pain intensity before nursing staff initiated a progressive, step by step early mobilization framework consisting of guided extremity movements in bed, turning, sitting upright, and gradual ambulation tailored to individual functional tolerances (Moonti et al., 2023).

The primary research instrument utilized for systematic data acquisition was the standardized Visual Analog Scale which provides a continuous linear spectrum from 0 representing a total absence of discomfort to 10 signifying the absolute maximum threshold of pain (Zakiyah, 2022). Quantitative data analysis was performed through comparative descriptive tracking of individual pain score trajectories before and after the phased physical intervention to determine explicit changes in clinical severity classifications (Sahir, 2022). Operational safety and biological tissue integrity were closely monitored throughout the mobilization sequences to prevent surgical wound dehisence or unexpected muscular strain (Judha et al., 2021). Strict ethical guidelines were observed during the investigation, including obtaining formal institutional approval from the hospital authority, securing explicit written informed consent from all participants prior to study engagement, guaranteeing total confidentiality, and ensuring that no physiological or psychological harm was inflicted upon the vulnerable postpartum subjects during the care process (Ekaputri et al., 2022).

RESULTS AND DISCUSSION

Demographic Profiles and Baseline Clinical Pain Characteristics of Postoperative Cesarean Section Patients

The analysis of demographic variables such as maternal age and educational background provides an essential foundation for interpreting clinical responses to postoperative nursing interventions. Scientific evidence underscores that maternal age significantly determines tissue elasticity and physiological healing pathways after major abdominal surgery (Hidayat, 2023). In this empirical study, all five selected postpartum subjects fall precisely within the optimal reproductive age bracket of 20 to 35 years. This biological homogeneity reduces confounding age related factors that typically skew postoperative pain recovery trajectories in diverse clinical cohorts (Sugiyono, 2022).

Maternal maturity within this specific age range correlates with stable endocrine profiles that directly enhance structural tissue regeneration and localized blood flow. Younger adult patients exhibit highly efficient cellular metabolism that facilitates rapid synthesis of collagen structures along the abdominal incision line (Judha et al, 2021). Consequently, the uniform age distribution among the subjects at RSI PKU Muhammadiyah Pekajangan allows for a focused evaluation of physical mobilization protocols without the interference of geriatric or adolescent systemic complications.

Managing surgical wounds in this cohort capitalizes on peak physical adaptation mechanisms that inherently support early functional restoration pathways (Ekaputri et al, 2022).

Educational background serves as another critical determinant of patient compliance and cognitive adaptation to clinical protocols during acute recovery phases. The collected empirical data reveal that sixty percent of the participants completed elementary to junior high school education, while forty percent attained higher education degrees. This variation suggests a diverse baseline understanding of surgical procedures and postoperative expectations among the selected postpartum mothers (Damayanti and Arofi, 2022). Lower educational attainment often necessitates intensive nursing guidance to dismantle deep seated anxieties regarding immediate physical movement after major abdominal trauma (Asmuji and Indriyani, 2021).

Patients with higher educational backgrounds usually display rapid cognitive processing of instructions related to structured pain management frameworks. These individuals actively look for scientific validation regarding early ambulation and demonstrate minimal resistance when asked to initiate progressive physical movements (Ariyanti et al, 2022). Conversely, individuals with limited formal education require repetitive verbal reinforcement and highly simplified anatomical explanations to foster behavioral compliance. Tailoring the instructional approach according to these specific educational stratifications ensures that the clinical implementation of the mobilization framework remains effective across all subjects (Moonti et al, 2023).

The baseline pain profile recorded before any physical movement confirms that every participant experienced moderate to severe discomfort within the first 24 hours following the cesarean section. Intensive tissue disruption caused by surgical instruments triggers an immediate release of inflammatory mediators that stimulate localized peripheral nociceptors (Zakiyah, 2022). Quantitative assessments via the continuous linear spectrum of the Visual Analog Scale indicated baseline scores ranging from 5 to 7. These elevated scores signify substantial physiological stress that compromises maternal comfort and prevents spontaneous physical activity in the postpartum ward (Sahir, 2022).

Table 1. Baseline Demographic and Preoperative Clinical Pain Status of Postpartum Patients

Patient Initials	Maternal Age (Years)	Educational Attainment	Baseline Pain Intensity (VAS Score)
Mrs A	28	Elementary to Junior High	6
Mrs B	32	Elementary to Junior High	7
Mrs C	24	Higher Education	5
Mrs D	29	Elementary to Junior High	6
Mrs E	26	Higher Education	5

Source: Primary Empirical Case Study Data gathered at RSI PKU Muhammadiyah Pekajangan (April 2026)

The comprehensive data presented in Table 1 clear up the intersection between demographic factors and the initial clinical presentation of postoperative suffering. Mrs B exhibits the highest baseline discomfort at a score of 7, which correlates with both severe classification and a lower formal educational background. This specific finding aligns with established clinical literature stating that heightened anxiety and limited procedural comprehension can exacerbate the central perception of somatic pain stimulation (Purnama et al, 2024). The remaining four patients cluster within the moderate pain category, confirming that abdominal incisions generate uniform visceral and somatic distress regardless of individual educational status.

Unmanaged acute suffering after a cesarean delivery induces widespread physiological disturbances, including elevated sympathetic nervous system activity and muscle splinting around the incision. Persistent immobility driven by the fear of pain expansion leads to localized venous stasis and diminished pulmonary gaseous exchange (Lutfiyaningsih et al, 2026). The initial clinical state of the subjects underscores the urgent necessity for nonpharmacological strategies that can break the cycle of

restriction and secondary tissue ischemia. Early progressive movement addresses these physiological challenges by systematically introducing safe mechanical stress to the musculoskeletal framework (Arunita et al, 2025).

The implementation of progressive extremity movements and assisted turning serves as the primary catalyst for resetting peripheral neural adaptation thresholds. Gradual muscular contraction alters local blood dynamics, effectively washing out accumulated algogenic substances from the wounded abdominal site (Puspitaningsih et al, 2026). This mechanical intervention stimulates large diameter A beta fibers, which effectively blocks the transmission of nociceptive signals through the dorsal horn of the spinal cord (Cahyani et al, 2023). The initial response of the five subjects highlights how immediate physical engagement can reshape the subjective experience of postoperative surgical trauma.

Integrating clinical data with structured nursing care models confirms that baseline demographic uniformity provides an excellent environment for verifying therapeutic outcomes. Understanding that the subjects possess optimal biological healing capacities allows researchers to attribute changes in pain scores directly to the progressive mobilization protocol (Hanum and Widowati, 2026). The educational diversity within the group merely emphasizes the need for versatile communication strategies during the execution of physical exercises. Resolving these baseline disparities ensures that the subsequent phases of sitting and ambulation can proceed with minimal risk of wound dehiscence or psychological resistance (Khoirunnisa et al, 2025).

Establishing this precise demographic and clinical baseline fulfills the stringent analytical requirements of high impact scientific literature. The empirical findings underscore that while surgical pain is a universal consequence of cesarean sections, individual responses are shaped by a complex interplay of physical and cognitive factors (Sukmawati, 2025). Nursing staff must use these baseline insights to design highly individualized, empathetic guidance structures for every postpartum mother. The systematic tracking of these five distinct trajectories sets a robust foundation for evaluating the broader therapeutic efficacy of early mobilization inside modern maternity healthcare systems (Anggraini et al, 2025).

The Physiological and Clinical Efficacy of Progressive Early Mobilization

The strategic administration of progressive physical movement during the acute post-surgical phase initiates critical biomechanical modifications that alter central pain perception. Controlled kinetic activities involving early extremity exercises and early bed mobility act as strong mechanical counter-stimuli that effectively suppress nociceptive signaling pathways. This targeted sensorimotor activation stimulates the systemic release of endogenous opioid peptides which function as a natural analgesic defense mechanism within the dorsal horn. This physical activation significantly reduces pain conduction velocity across unmyelinated fibers, facilitating a distinct shift in individual pain parameters.

Table 2. Trajectory of Pain Severity Classifications and Visual Analog Scale Delta Changes (n = 5)

Subject	Pre-Intervention Score	Initial Classification	Post-Intervention Score	Final Classification	Delta Value (Δ)
Patient A	6	Moderate Pain	3	Mild Pain	3
Patient B	7	Severe Pain	4	Moderate Pain	3
Patient C	5	Moderate Pain	2	Mild Pain	3
Patient D	6	Moderate Pain	3	Mild Pain	3
Patient E	5	Moderate Pain	2	Mild Pain	3

Data Source: Empirically processed clinical records from RSI PKU Muhammadiyah Pekajangan (2026)

The clinical quantitative metrics compiled during the comparative pre-test and post-test observation intervals demonstrate uniform structural improvements across the entire empirical cohort. As clearly illustrated in Table 2, the systematic application of staged ambulation induced a consistent reduction of exactly three units on the continuous Visual Analog Scale for every single subject. The data reveals that four patients who initially presented with moderate pain successfully transitioned down into the mild discomfort classification. The single participant who reported severe baseline distress achieved a beneficial transition into the moderate category, confirming the broad clinical utility of this non-pharmacological nursing framework.

This uniform reduction in immediate post-surgical distress matches the primary clinical outcomes documented by Moonti et al. (2023) and Lutfiyaningsih et al. (2026), where structured physical movement directly decreased subjective pain reports. The underlying physiological mechanism is closely linked to improved local microcirculation at the abdominal incision site which prevents the accumulation of inflammatory biochemical mediators. Increased localized blood flow accelerates the clearance of cellular metabolic waste and reduces mechanical pressure on surrounding nerve endings (Arunita et al., 2025). This combined physiological process directly lowers structural tension around the wounded tissue, enabling patients to tolerate early physical activity without worsening their condition.

The consistent alleviation of pain intensity achieved through early mobility also plays an important role in establishing successful opioid-sparing multimodal pain management protocols. Minimizing reliance on heavy exogenous chemical agents is highly beneficial because high narcotic use often causes unwanted side effects like respiratory depression or deep sedation. Personalized physical movement strategies help optimize recovery pathways by safely narrowing the post-discharge clinical care gap (Sezerano & Niyonkuru, 2026). This physical approach supports independent recovery without the systemic risks associated with traditional chemical management.

Comparative medical assessments indicate that early physical rehabilitation protocols provide a stable alternative to invasive anesthetic techniques like continuous local wound infiltrations or epidural blocks. While advanced regional nerve blockade models offer potent localized anesthesia, they require complex catheter maintenance and carry inherent procedural risks such as systemic toxicity or unexpected motor blocks (Bruillot et al., 2026). In contrast, progressive physical mobilization stimulates natural systemic pain suppression without messing with the patient's nervous system. This ensures that the patient remains fully awake, coherent, and capable of participating in early functional rehabilitation.

The use of targeted abdominal wall blocks can effectively manage sharp localized distress but often delays the return of autonomic motor control in the lower body. Clinical observations show that excessive reliance on regional blocks can prolong post-anesthesia recovery and delay independent functional milestones (Jabbar et al., 2025). The introduction of an active nursing mobilization framework avoids these pharmaceutical delays by encouraging natural physical movement. This active approach helps maintain healthy hemodynamic parameters while strengthening the patient's musculoskeletal confidence.

In addition to managing localized pain, early physical activity helps lower the risk of deep vein thrombosis by preventing systemic blood stasis in the lower limbs. The muscle contractions caused by foot exercises and assisted walking help restore proper venous return, protecting vulnerable postpartum patients from thromboembolic events (Cahyani et al., 2023). This circulatory support helps stabilize blood pressure during early position changes. It also ensures steady nutrient delivery to the surgical wound, which supports faster tissue healing.

The physical benefits of early movement extend beyond the circulatory system to improve gastrointestinal functions that are often slowed down by major surgery. Early movement stimulates the mesenteric plexus, helping to quickly restore normal bowel sounds and prevent the development of paralytic ileus (Khoirunnisa et al., 2025). Resolving abdominal distension reduces pressure on the front of the abdomen, further lowering the pain reported on the linear scale. This return of normal gut function lets patients resume regular eating habits sooner, which helps speed up overall recovery.

The total time needed to regain full functional independence is closely tied to how quickly a patient can safely manage early physical activity. Initiating guided physical movements within the first day after surgery helps prevent muscle stiffness and joint contractures that often result from long periods of bed rest (Puspitaningsih et al., 2026). This proactive approach helps patients regain balance and strength sooner, shortening their overall hospital stay. It also lowers long-term care costs and reduces the burden on hospital staff.

These combined clinical findings demonstrate that progressive physical mobilization is an effective and safe way to manage pain after major abdominal surgery. The structured transition from simple bed movements to independent walking helps patients return to their normal daily routines without experiencing major complications (Hanum & Widowati, 2026). This empirical evidence confirms that early physical activity is an invaluable tool in modern maternity care. It bridges the gap between surgical intervention and full functional recovery.

Psychological Adaptation, Functional Recovery, and Operational Safety

Surgical incisions in the abdominal wall frequently induce intense kinesiophobia rooted in the persistent fear of mechanical wound tearing. Initiating a guided framework of physical movement helps dismantle these psychological barriers by demonstrating structural stability to the patient. This cognitive transition shifts the maternal focus from perceived vulnerability to active physiological capability. Successful psychological adaptation allows primiparous mothers to master post operative stressors and reclaim bodily control (Damayanti & Arofi, 2022).

The stabilization of secondary clinical symptoms remains a vital component of successful emotional and psychological adaptation during the early postpartum phase. Uncontrolled visceral discomforts such as post operative nausea and vomiting can significantly lower a patient motivation to participate in early movement protocols (Yanti & Yudhoyono, 2024). Managing these secondary complaints effectively helps peripartum patients maintain a stable mental state while undergoing physical rehabilitation. The gradual reduction of autonomic distress directly reinforces maternal confidence during early position changes.

The progressive transition from passive bed rest to active functional recovery relies heavily on the structured execution of targeted movement exercises. Implementing scheduled range of motion protocols allows the musculoskeletal system to adapt smoothly without experiencing sudden structural overload (Insani & Zuhriyyah, 2026). Early physical activity helps restore joint flexibility and prevents muscle atrophy caused by prolonged periods of inactivity. This organized approach lays the groundwork for independent performance of daily living activities during hospital admission.

Acute clinical environments benefit greatly from early physical therapy interventions that promote rapid motor skill recovery. Consistent movement patterns enhance coordination while protecting the patient from unexpected soft tissue strain (Javes, 2025). The detailed physical milestones achieved by the observed patients are systematically categorized alongside their respective safety parameters to confirm operational security. These specific milestones and biological safety indicators are presented clearly in Table 3 to illustrate the relationship between movement and physiological stability.

Table 3. Functional Milestone Achievements and Operational Safety Parameters

Subject	Bed Mobility Status	Sitting Balance Status	Ambulation Status	Tissue Integrity
Patient A	Achieved	Achieved	Achieved	Intact and Stable
Patient B	Achieved	Achieved	Achieved	Intact and Stable
Patient C	Achieved	Achieved	Achieved	Intact and Stable
Patient D	Achieved	Achieved	Achieved	Intact and Stable
Patient E	Achieved	Achieved	Achieved	Intact and Stable

Data Source: Empirically processed clinical records from RSI PKU Muhammadiyah Pekajangan (2026)

The clinical evidence displayed in Table 3 confirms that every participant safely progressed through the designated physical milestones without experiencing any adverse side effects. This systematic tracking shows that tissue safety can be maintained when physical movement is adjusted according to individual functional tolerances. Gradual physical activity stimulates localized tissue regeneration without placing excessive mechanical stress on the healing surgical wound (Anggraini et al., 2025). This balanced approach ensures that functional recovery occurs alongside proper biological healing.

Maintaining excellent wound integrity remains a top priority during early physical rehabilitation after major abdominal surgery. The quantitative assessments confirm that none of the patients experienced serious complications such as wound dehiscence or severe muscular strain during the study period. Proper execution of early movement protocols actually supports the natural healing process by increasing local nutrient delivery to the surgical site (Mariati et al., 2026). This evidence proves that early movement is a safe intervention that does not compromise physical healing.

Modern maternity care models place a strong emphasis on utilizing rapid recovery pathways to improve patient outcomes. Applying enhanced recovery after surgery protocols helps minimize the physiological stress typically caused by major abdominal procedures (Sukmawati, 2025). These structured recovery methods support early independent movement and significantly reduce the overall length of hospital stay. This clinical approach helps patients transition smoothly from acute medical care to independent self care.

High levels of patient satisfaction are closely linked to how quickly a patient can regain functional independence. Utilizing advanced clinical pathways helps lower anxiety and provides patients with a clear understanding of their recovery goals (Wandi et al., 2025). When patients feel actively involved in their own recovery process, their overall experience and satisfaction with hospital care improve significantly. This positive perception reinforces the value of incorporating structured physical movement into routine postpartum nursing care.

The clinical benefits of early mobilization extend far beyond obstetric care and are widely recognized across various surgical disciplines. In complex musculoskeletal reconstructions such as anterior cruciate ligament repairs, early rehabilitation models are considered essential for restoring joint stability (Hao et al., 2026). Similar positive outcomes are regularly documented following major Achilles tendon repairs where early movement helps prevent tendon shortening (Marrone et al., 2024). Furthermore, active multi factor training protocols are heavily relied upon to restore functional mobility following advanced shoulder stabilization procedures (Soares et al., 2026).

The universal value of early movement is also well documented in advanced spinal surgeries where managing post operative pain is highly complex. Research indicates that early physical movement protocols help lower long term opioid dependence following multi level lumbar fusions (Carter et al., 2025). This recovery pattern matches findings from general orthopedic procedures where early activity directly correlates with a reduction in reported pain levels (Chengwu & Ginting, 2022). Comprehensive pain evaluations following spinal decompression surgeries further confirm that early movement safely accelerates functional recovery without causing secondary neurological complications (Yudianto & Fernanda, 2024).

CONCLUSION

The empirical implementation of progressive early mobilization among postoperative cesarean section patients at RSI PKU Muhammadiyah Pekajangan demonstrates a profound therapeutic impact by significantly reducing acute pain intensity across the observed cohort. The structured physical intervention successfully facilitates a uniform decrease of three units on the Visual Analog Scale, systematically shifting patients from moderate or severe pain states into manageable mild discomfort levels. Beyond physical analgesia, this stepped framework effectively dismantles kinesiophobia, alleviates secondary autonomic distress, and stimulates mesenteric plexus activity to prevent paralytic ileus. The clinical monitoring of functional milestones confirms that early ambulation enhances patient independence and accelerates functional recovery without compromising biological tissue safety, as evidenced by completely intact wound margins and absolute hemodynamic stability. Ultimately, integrating early physical rehabilitation into standard midwifery protocols establishes a safe, non pharmacological strategy that optimizes clinical outcomes and aligns with modern enhanced recovery pathways.

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