

Original Article

Post-Anesthesia Recovery Experience Following Cesarean Section with ERACS Protocol: A Phenomenological Study in Indonesia

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ABSTRACT

Background: Enhanced Recovery After Cesarean Section (ERACS) is a perioperative care protocol aimed at improving clinical outcomes and patient experience. Understanding both quantitative outcomes and qualitative experiences is essential to evaluate its comprehensive impact on maternal recovery.

Methods: This study was conducted on post-anesthesia cesarean section patients using the ERACS protocol at RS Tk.II 03.05.01 Dustira, Cimahi. In addition to observing clinical parameters such as hemodynamic stability, side effects, and recovery duration, qualitative narratives were collected to explore patient experiences during the recovery process.

Results: While the majority of patients were multiparous and of reproductive age with stable intraoperative hemodynamics and low incidence of side effects, the qualitative narratives revealed meaningful insights. Patients described feeling empowered by early mobilization and the ability to initiate immediate breastfeeding (IMD), which enhanced maternal confidence and emotional bonding. Pain reduction and shorter recovery times were viewed not only as clinical improvements but as milestones toward regaining autonomy. The structured ERACS approach and supportive healthcare team fostered a sense of safety and trust.

Conclusion: The ERACS protocol contributes to a patient-centered recovery experience that goes beyond clinical outcomes. It enhances emotional well-being, promotes active participation in recovery, and supports the mother's role from the earliest postpartum moments. These insights suggest that integrating qualitative feedback into clinical protocols can lead to more empathetic, efficient, and personalized perioperative care models.

Keywords: Anesthesia; Cesarean Section; ERACS, Breast Feeding; Opioid-Related Disorders.

Implications for Practice:

- Improved Patient-Centered Care: Incorporating the ERACS protocol enhances emotional resilience, autonomy, and trust in the healthcare system among postpartum mothers.
- Clinical Practice Development: Insights from patient narratives can inform more empathetic and responsive care models.
- Education and Empowerment: Maternal recovery education programs should include themes such as empowerment, emotional support, and assurance, in addition to clinical facts.
- Healthcare System Efficiency: Implementing ERACS promotes both compassionate and efficient care delivery.
- Policy and Professional Development: The ERACS model can guide health policy formulation focused on quality maternal care.

Introduction

The birth process has evolved beyond vaginal delivery (a typical delivery method) in tandem with technological advancements. Cesarean sections are an alternative to vaginal deliveries. A cesarean section involves cutting the mother's uterus (hysterotomy) and the abdominal wall (laparotomy) in order to deliver the baby. If issues arise during pregnancy and delivery, the goal of the cesarean section procedure is to save the mother's and the baby's lives ([Sungkar & Basrowi, 2020](#)).

The World Health Organization (WHO) has reported a global rise in cesarean section deliveries, with more than one in five women undergoing this procedure ([World Health Organization, 2018](#)). In 2018, WHO noted that 58.1% of deliveries involved cesarean sections. In Indonesia, national health data showed a cesarean delivery rate of 17.6% ([Riset Kesehatan Dasar \(Riskesdas\), 2019](#)). Specifically in West Java, the 2018 Riskesdas report recorded a prevalence of 15.48%. Furthermore, the BPJS Kesehatan reported that 36% of deliveries covered in 2019 were cesarean sections.

There is a growing tendency among pregnant women to opt for cesarean delivery over vaginal birth. This increase is driven by both medical and non-medical factors. Medically, cesarean sections are often indicated in cases where maternal or fetal health conditions pose risks to safe vaginal delivery, such as cephalopelvic disproportion, abruptio placenta, placenta previa, multiple pregnancies, transverse fetal position, maternal infections, amniotic fluid disorders, and hypertensive disorders like preeclampsia or eclampsia ([Putra et al., 2021](#)). On the other hand, non-medical factors may include maternal age, education level, socio-economic background, psychological readiness, and

prior birth experiences.

Despite its benefits, cesarean section delivery carries the risk of postpartum complications such as hemorrhage, sepsis, wound infection, shock, uterine rupture, and delayed recovery ([Safitri et al., 2020](#)). To address these issues and optimize outcomes, the Enhanced Recovery After Caesarean Section (ERACS) protocol was introduced. This evidence-based protocol focuses on perioperative care, preoperative, intraoperative, and postoperative phases, to improve recovery and reduce complications ([Liu et al., 2020](#); [Pan et al., 2020](#)).

ERACS is derived from the broader Enhanced Recovery After Surgery (ERAS) framework first introduced by Kehlet in 1997 for open colorectal surgeries. Over time, it has been applied across various surgical disciplines, including obstetrics. In 2020, the Society for Obstetric Anesthesia and Perinatology released guidelines specifically tailored for ERACS in obstetric anesthesia ([Wilson et al., 2025](#)). Several hospitals in Indonesia, such as Prima Hospital, Udayana University Hospital (Unud), EMC Hospital, and Hermina Hospital, have already implemented the ERACS protocol, showing a shift toward improved perioperative care in cesarean deliveries ([CNN Indonesia, 2021](#)).

Comparative studies have demonstrated that ERACS can improve postoperative outcomes. For instance, [Pan et al. \(2020\)](#) found lower pain scores at 24–48 hours post-surgery and reduced hospitalization costs in patients receiving ERACS. [Baluku et al. \(2020\)](#) reported shorter hospital stays and fewer complications in emergency cesarean deliveries using ERACS. [Meng et al. \(2021\)](#), through a systematic review and meta-analysis, confirmed that ERACS reduced average hospital stay duration, lowered postoperative complications, and minimized pain severity.

However, these studies have limitations. Patients with preeclampsia, cardiac disease, diabetes, physical disabilities, coagulation disorders, opioid dependency, or preterm deliveries were excluded. More importantly, while most studies focus on clinical outcomes, there remains a lack of research exploring the subjective experiences of patients, particularly regarding their recovery after anesthesia within the ERACS framework, especially in the Indonesian context. This gap is crucial given that anesthesia plays a central role in cesarean sections, and its effects can significantly shape maternal recovery experiences.

Moreover, current literature is predominantly quantitative. There is a pressing need for qualitative investigations that explore how women perceive their post-anesthesia recovery experience, especially under ERACS. Understanding the emotional, physical, and social dimensions of recovery from the patient's perspective could inform more patient-centered care practices.

To frame this exploration, the present study draws on the Maternal Recovery Theory, which emphasizes multidimensional recovery after childbirth, encompassing physical, psychological, and emotional restoration. Additionally, principles from Post-Anesthesia Adaptation Theory guide the understanding of patients' adjustment in the immediate postoperative period, including the management of pain, mobility, and cognitive awareness.

This study was therefore conducted to describe the lived experiences of patients in the immediate post-anesthesia phase following cesarean section under the ERACS protocol at RS Tk.II 03.05.01 Dustira in Cimahi, Indonesia. Given the lack of qualitative research in this area, especially locally, this study aims to contribute rich, contextual insights into post-anesthesia recovery and support the

development of more responsive maternal care models.

Methods

Study Design

This study adopted a phenomenological qualitative research approach to explore the post-anesthesia recovery experience of patients who underwent cesarean sections under the ERACS protocol. Phenomenology was chosen to understand the lived experiences of these patients, as it allows for a deep exploration of how individuals perceive and interpret their recovery process. The study was conducted at Tk.II 03.05.01 Dustira Hospital in Cimahi, Indonesia. The hospital setting, with its implementation of the ERACS protocol, was critical in influencing the findings, as it provided an opportunity to examine the protocol's impact in a real-world clinical environment.

Research Team and Reflexivity

The research team consists of two researchers: an anesthesiologist (male) and a hospital administrator (female), both of whom have extensive experience in clinical research. Both are familiar with the ERACS protocol, but have had no prior direct interaction with participants before the start of the study, thereby minimizing potential bias in the recruitment and data collection processes.

Both researchers have completed formal training in qualitative methodology, including in-depth interviews and thematic analysis, through institutional workshops organized by the academic institution where they are affiliated. To further reduce the possibility of researcher bias, a reflexivity journal was used throughout the research process. Additionally, peer debriefing sessions were conducted periodically with colleagues not directly involved in the research to ensure that data interpretation was not influenced by personal assumptions.

Participants

The inclusion criteria for participants were:

- **Post-cesarean patients** who underwent surgery using the ERACS protocol.
- **Gestational age** of at least 37 weeks.
- Patients who **provided informed consent** and were willing to participate in the interview process.

Exclusion criteria included:

- Patients with **eclampsia or preeclampsia, diabetes mellitus, or opioid dependence.**
- Those with **physical impairments** that may limit mobility, or who had contraindications for spinal anesthesia.

Participants were recruited through sequential sampling in the obstetric inpatient unit at the hospital where the study was conducted. Recruitment was carried out by the principal investigator, who had no prior personal or professional relationship with the participants, in order to maintain data objectivity. A total of 50 patients who met the criteria were contacted directly by the researcher after they had undergone surgery and were in stable medical condition.

There was no prior relationship between the researcher and the participants before recruitment, which helped minimize potential bias during data collection. All participants received a thorough explanation of the study's objectives, benefits, and procedures, and were given sufficient time to consider their participation. No participants refused to participate. The interview process was conducted in the inpatient ward, taking into account the comfort and privacy of the participants. No incentives or compensation were provided to maintain the purity of the motivation for participation.

Data Collection

Researchers collected data between October and December 2022 at Dustira Hospital Tk.II 03.05.01, immediately after patients underwent cesarean section surgery with the ERACS protocol. Data

collection was conducted through in-depth interviews and medical record reviews. A semi-structured interview guide was developed based on a literature review of postoperative recovery, then refined with input from anesthesiology and obstetrics experts and pilot-tested on two eligible patients who were not included in the final analysis. Interviews were conducted in person at the hospital, with an average duration of 30 minutes per participant. The guide included questions about post-anesthesia recovery experiences, pain management, early mobilization, and breastfeeding initiation. The researchers recorded all interviews after obtaining participant consent, then reviewed the transcripts to ensure accuracy. Participants were also given the opportunity to review and confirm their responses (member checking) to ensure that their experiences were accurately represented. Data saturation was achieved when no new codes or insights emerged after the 42nd interview, and the last eight interviews confirmed the repetition of themes. The researchers stopped the interview process once these indicators were met.

Data Analysis

The data were analyzed using thematic analysis as described by Braun and Clarke (2006) to identify common themes related to post-anesthesia recovery. Coding was performed manually and inductively, beginning with repeated readings of the transcripts to generate initial codes that emerged directly from the data. Two researchers independently coded the data to enhance the validity of the findings, and any discrepancies in coding were resolved through discussion until consensus was reached. The analysis process comprised six stages, namely familiarization with the data, initial coding, theme search, theme review, theme definition and naming, and report writing. Examples of theme matrices and key quotes are presented in the results to

illustrate the relationship between the raw data and the themes that emerged. This approach allows for an in-depth exploration of patterns in participants' experiences in the context of post-operative recovery using the ERACS approach.

Trustworthiness and Rigor

To ensure the trustworthiness of the study, multiple validation techniques were employed. These included peer review of the coding process, member checking where participants reviewed their interview transcripts for accuracy and maintaining an audit trail to document the research process. Strategies to ensure dependability, confirmability, and transferability included clear documentation of the data collection and analysis procedures, and the use of a transparent coding process. The findings were presented to the research team for further validation and refinement.

Ethical Consideration

Ethical approval for the study was granted by the Research and Research Ethics Committee of Tk.II 03.05.01 Dustira Hospital, with the approval number Etik.RSD/123/x/2022 dated October 11, 2022. No additional permissions were

required as the study was conducted within the hospital's standard ethical framework. Confidentiality and anonymity of the participants were maintained by assigning unique identifiers to interview transcripts and ensuring that no personal information was disclosed. Participants provided written informed consent before participating in the study, ensuring that they understood the research aims, the voluntary nature of participation, and the confidentiality of their responses.

Results

Respondent Characteristics

Table 1 shows the general characteristics of the participants, which aims to provide context for their experiences during postoperative recovery with the ERACS protocol. Most participants were within the productive age range (20–35 years), with diverse parity backgrounds, including both primiparous and multiparous women. This variation enriches our understanding of how pregnancy status and prior experiences influence emotional, physical, and psychological responses to the procedure and recovery process ([Sukma & Sari, 2020](#); [Wiknjastro, 2021](#)).

Table 1. General characteristics of research subjects

Variable	Category/Description	n (%)	Range / Mean ± SD
Age (years)	< 20 years	3 (6%)	28.32 ± 5.16 (19–39)
	20–35 years	42 (84%)	
	> 35 years	5 (10%)	
Pregnancy Status	Primiparous (first pregnancy)	20 (40%)	1.92 ± 0.90 (1–4)
	Multiparous (≥2 pregnancies)	30 (60%)	
Body Mass Index (kg/m ²)	-	-	29.07 ± 2.56 (24.34–37.89)
Preoperative Vital Signs	Systolic blood pressure (mmHg)	-	123.28 ± 9.55 (100–140)
	Diastolic blood pressure (mmHg)	-	79.5 ± 8.05 (56–90)
	MAP (mmHg)	-	93.86 ± 7.63 (74–107)
	Heart rate (bpm)	-	92.78 ± 13.07 (75–129)
Duration of Surgery (minutes)	-	-	55.94 ± 7.29 (35–60)

As shown in **Table 1**, some participants also had a high body mass index, which can clinically affect anesthesia decisions and delivery plans. Some of them expressed concerns about the anesthesia process or discomfort after the procedure. Factors such as age, parity, and physical condition were important background information in understanding the variety of experiences that emerged during the interviews. Pregnant women who are obese prior to pregnancy require special delivery planning, including consultation with an anesthesiologist, as administering anesthesia can be more challenging in these cases ([Centers for Disease Control & Prevention, 2022](#)). Obesity during pregnancy poses serious health risks for both mother and baby, including an increased likelihood of gestational diabetes, fetal abnormalities, preeclampsia, and miscarriage. According to research on spinal anesthesia for cesarean sections in pregnant women with morbid obesity at the RS Tk.II 03.05.01 Dustira Kota Cimahi (2021), pregnant women who are overweight or obese

should have their condition evaluated and have appropriate anesthesia planning done in order to lower their risk of having a cesarean section. In addition to allowing the birth process to occur in a conscious state and reducing the risk of aspiration pneumonia, the use of spinal anesthesia techniques during pregnancy can help pregnant women manage postoperative pain and avoid risks associated with general anesthesia techniques ([Lubis et al., 2021](#)).

The majority of cesarean section patients in this study were multiparous and the average parity among participants was two children. According to research by Indanah (2021), parity is linked to early mobilization and maternal independence after a cesarean section. Primiparous women, those experiencing childbirth for the first time, generally require more assistance with self-care during the recovery period compared to multiparous women. Early mobilization in post-cesarean patients plays a key role in enhancing both physical and psychological recovery, thereby accelerating the healing

process ([Indanah et al., 2021](#)).

The average duration is measured from the initial incision to the final closure of the skin. Several factors can affect the length of the operation, including the surgical technique used, anesthesia approach, and the presence of any complications ([Manchester University, 2020](#); [Pujianto et al., 2022](#)). A review by Hofmeyr GJ (2012) comparing cesarean techniques found that the Joel-Cohen method offers a shorter operative time compared to the Pfannenstiel technique. Additionally, anesthesia strategies under the ERACS protocol, such as the combination of spinal anesthesia with opioids can support efficient surgical procedures by enhancing the quality and duration of anesthesia while minimizing the need for additional local anesthetics ([Caughey et al., 2018](#)).

Distribution of Intraoperative Vital Signs

During the surgical procedure with the ERACS protocol, most participants reported feeling calm and safe, indicating a subjective perception of stability in their condition. The theme of "Feeling Comfortable and in Control During Surgery" emerged consistently from the mothers' narratives.

"I felt calm, didn't feel excessive pain... as if everything was under control." (Participant 12)

"During the surgery, I remained conscious but didn't panic. I knew everything was okay because the doctor kept me informed." (Participant 27)

These positive experiences were attributed by participants to the effects of spinal anesthesia and active communication from the medical team, which provided a sense of safety and reduced anxiety. They did not report common symptoms such as severe nausea, dizziness, or shortness of breath, which are often associated with hemodynamic instability during surgery.

Another theme that emerged was "Clarity and Support from the Medical Team," where participants highlighted the importance of the medical team's role in maintaining intraoperative comfort:

"The doctors and nurses kept monitoring me, saying my blood pressure was good, everything was safe, so I wasn't worried." (Participant 19)

Although vital signs such as MAP, HR, and SpO₂ were recorded by the medical team for monitoring purposes, these results were not presented quantitatively in the qualitative findings but rather as supporting context indicating that no intraoperative complications were reported by participants.

These findings align with previous literature indicating that the combination of spinal anesthesia and opioids in the ERACS protocol contributes to intraoperative comfort and patient condition stability ([Artawan et al., 2021](#); [Ituk & Habib, 2018](#)). However, what is most important in the phenomenological context is the participants' subjective perceptions and experiences, which indicate the success of this approach from the patient's perspective.

Early Breastfeeding Initiation (IMD) Actions

One of the most prominent themes emerging from the interviews was the crucial role of awareness and support in the success of Early Breastfeeding Initiation (IMD) following cesarean delivery. While 74% of participants reported successful IMD experiences, the remaining 26% encountered various barriers.

"I didn't know I could breastfeed that early, right in the operating room. No one told me. I just followed what the nurse said." (Participant 7, multiparous mother)

Lack of knowledge regarding IMD was the most frequently cited barrier, highlighting a gap in prenatal counseling

and preparation. This was often compounded by clinical complications or procedural routines that discouraged immediate skin-to-skin contact.

“My baby had to be taken to another room for observation because he had swallowed some fluid. They didn’t allow me to hold him until hours later.” (Participant 13, primiparous mother)

This participant's experience points to another recurring subtheme, medical interruptions to bonding, which although often necessary, contributed to emotional distress and missed opportunities for early breastfeeding.

Participants who successfully practiced IMD often credited the structured support provided by the Enhanced Recovery After Cesarean Surgery (ERACS) protocol. They felt that the environment was more responsive and inclusive of their needs.

“Everything was calm. They told me beforehand that they would place my baby on my chest if all went well. And they did. It was beautiful.” (Participant 2, primiparous mother)

This sense of preparedness and communication was key to fostering a supportive atmosphere. Patients appreciated the sense of involvement in the decision-making process.

However, others emphasized the continued influence of outdated practices or insufficient staff awareness regarding IMD, despite the protocol.

“I think the nurses were in a rush. They didn’t even mention breastfeeding. It was like, ‘Let’s get this done,’ and move on.” (Participant 10, multiparous mother)

Some mothers reported difficulties initiating breastfeeding due to physical constraints, such as inverted nipples or delayed milk production.

“My nipples are flat, and my baby couldn’t latch. They said to wait until I got to the ward. It felt discouraging.” (Participant 5, primiparous mother)

Such physical barriers were compounded by the emotional pressure of wanting to do what is best for the baby but feeling unsupported or unprepared.

While quantitative data showed that 74% of participants were able to practice IMD, these numbers alone do not capture the complexity of the experiences. The narratives reveal that awareness, staff support, and physiological conditions were critical to IMD success. The qualitative accounts also emphasize how systemic gaps, such as insufficient counseling, lack of standardized communication, and prioritization of clinical routine over patient-centered care, may undermine the effectiveness of protocols like ERACS ([Khoirunnisa et al., 2023](#)).

Post-operative Recovery Experience

A key theme that emerged from the participants' narratives was "Feeling of Readiness and Control during Recovery." Most participants reported a surprisingly swift recovery experience, emphasizing a sense of physical readiness and regained control over their bodies shortly after surgery (**Table 2**). One participant shared:

“I didn’t expect to be able to move my legs that quickly. It felt like I hadn’t just gone through major surgery.” (Participant 14)

This theme was supported by clinical observations, where the average recovery time, defined by the ability to move lower extremities (Bromage score <2), was approximately 30.1 minutes. Most participants (62%) achieved this level of recovery within 21–30 minutes, confirming the subjective experiences of rapid motor return.

This aligns with prior research that associates ERACS with accelerated physiological stabilization post-operatively ([Baluku et al., 2020](#); [Liu et al., 2020](#); [Malek & Dvorak, 2019](#)). Still, the recovery experience was not merely

physical. Another emerging theme, "Relief and Confidence in Nursing Support," reflected how the presence of attentive post-op care reinforced emotional reassurance:

"In the recovery room, the nurses checked on me every few minutes. It made me feel really safe." (Participant 27)

Table 2. Recovery Time Percentage

Recovery Time (minutes)	n	Percentage (%)
0-10	0	0%
11-20	3	6%
21-30	31	62%
31-40	16	32%

Post-Cesarean Pain Perception

Two key themes emerged regarding postoperative pain, namely pain as a surprising companion and progressive relief reinforcing mobility. While participants expected discomfort, many described the pain as "manageable" and less intense than anticipated. For example:

"At first, I feared it would be extremely painful, but after 24 hours, the pain wasn't as bad as I imagined." (Participant 5)

Pain levels, assessed using the Visual Analog Scale (VAS), showed a consistent downward trend from 7.76 at 24 hours to 2.29 at 48 hours (**Table 3**). Participants associated this reduction with their ability to initiate early movement and breastfeeding, contributing to another sub-theme is pain management enabling function.

"Because the pain reduced quickly, I could start sitting up and breastfeeding my baby." (Participant 12)

These findings reinforce previous studies suggesting the ERACS protocol enhances postoperative comfort and promotes recovery activities like ambulation and bonding ([Baluku et al., 2020](#); [Pan et al., 2020](#)).

Table 3. Pain Intensity Based on Visual Analog Scale (VAS) Over Time

Time (hours)	VAS Score (Mean)
24	7.76
30	5.56
36	3.84
42	3.00
48	2.29

Post-Anesthesia Side Effects

A recurring theme in participants' accounts was "Mild but Expected Discomforts." Despite some post-anesthesia symptoms such as nausea, vomiting, and headache, participants often perceived them as tolerable and transient.

"I felt a bit nauseous, but didn't vomit. The nurse acted quickly with medication, so it went away fast." (Participant 9)

Only a small number of participants (10%) reported nausea and vomiting, while 8% experienced headaches. Interestingly, most participants (76%) reported no side effects at all, reflecting a generally positive recovery experience post-spinal anesthesia under the ERACS protocol (**Table 4**). Some expressed surprise at the minimal side effects:

"I thought I'd be dizzy or nauseous after anesthesia, but I wasn't. I was even able to talk with my husband in the recovery room." (Participant 3)

This experience aligns with the multimodal approach embedded in ERACS, which proactively manages PONV risk factors ([Baluku et al., 2020](#); [Pujianto et al., 2022](#)).

Table 4. Post-Anesthesia Side Effects

Side Effect	n (%)
Nausea and Vomiting	5 (10%)
Headache	4 (8%)
No Side Effects Observed	38 (76%)
Others	3 (6%)

Post-Cesarean Section Mobilization

The theme “Regaining Control Through Early Movement” emerged strongly from the narratives. Participants viewed early mobilization as empowering and unexpected following major surgery.

“I thought I could only stand after two days. But that night, I was already able to sit on my own.” (Participant 11)

Within the first 24 hours, most participants were able to mobilize progressively: 36% sat within 8–12 hours, and 70% were already walking by 24 hours (**Table 5 and 6**). These milestones enhanced participants' confidence in their recovery and readiness to care for their newborns.

“Once I could stand and walk, I felt a new sense of energy. Like my body had truly recovered.” (Participant 22)

This physical capability was often attributed to the effectiveness of spinal anesthesia and supportive nursing practices that encouraged gradual movement without pressure ([Artawan et al., 2021](#); [Bollag et al., 2021](#)).

Table 5. Post-Cesarean Section Mobilization Time

Mobilization Activity	8 hours	12 hours	16 hours	24 hours	36 hours
Sitting	18 (36%)	14 (28%)	18 (36%)	–	–
Standing	–	17 (34%)	–	33 (66%)	–
Walking	–	–	–	35 (70%)	15 (30%)

Hospital Stay Duration

A dominant theme identified was “Quick Recovery Leads to Early Discharge.” Most participants expressed satisfaction with their hospital stay, viewing the 42-hour average duration as sufficient yet not burdensome.

“I stayed for only two nights, which was enough for me to recover and learn how to care for my baby.” (Participant 17)

Participants associated shorter hospitalization with a smoother, more comfortable recovery process. For many, going home earlier than expected felt like a reward for their effort in mobilizing early and engaging with care protocols.

“I could go home early because I started walking and breastfeeding early. Everything went smoothly.” (Participant 4)

These findings are consistent with prior studies that highlight ERACS' effectiveness in reducing length of stay while maintaining patient safety

([Khoirunnisa et al., 2023](#); [Meng et al., 2021](#)).

Figure 6. Length of Hospital Stay Post-Cesarean Section

Length of Stay (hours)	Number of Patients	Percentage (%)
36	18	36%
42	25	50%
48	7	14%

Discussion

This phenomenological study explored the lived experiences of post-cesarean section patients under the Enhanced Recovery After Cesarean Section (ERACS) protocol in an Indonesian tertiary hospital. The findings offer meaningful insight into how clinical interventions, when integrated with empathetic and structured care, shape both physical and emotional recovery during the immediate post-anesthesia period.



Holistic Impact of ERACS on Recovery

The majority of participants described a sense of rapid physiological restoration, emotional reassurance, and regained autonomy. These findings are consistent with previous research suggesting ERACS improves recovery times, reduces complications, and enhances patient satisfaction (Pan et al., 2020; Meng et al., 2021). However, our study goes further by capturing the subjective experiences of women—something that has remained underexplored in existing quantitative literature. This aligns with the Maternal Recovery Theory, which emphasizes recovery as a multidimensional process involving not only physical but also emotional and psychological adaptation.

Participants in our study frequently expressed surprise at how quickly they were able to regain mobility and initiate early breastfeeding. This supports the role of early mobilization and effective pain control as facilitators of maternal independence and bonding (Baluku et al., 2020; Bollag et al., 2021). Notably, the reduction in postoperative pain from a mean VAS score of 7.76 at 24 hours to 2.29 at 48 hours demonstrates how ERACS protocols, particularly multimodal analgesia and structured perioperative education, can translate into more manageable and empowering recovery experiences.

Communication and Patient Agency

A major theme identified was the role of communication and staff support in shaping perceptions of safety and control during surgery and recovery. Participants emphasized the importance of being informed and included in care decisions, reinforcing the significance of patient-centered care in surgical recovery. This aligns with prior evidence suggesting that perioperative communication and expectation-setting reduce anxiety and improve satisfaction (Ituk & Habib, 2018;

[Wilson et al., 2025](#)).

However, barriers to Early Breastfeeding Initiation (IMD) remained, particularly among participants who lacked prior education or encountered rigid procedural routines. This highlights a disparity between protocol intentions and implementation. While the ERACS protocol advocates immediate skin-to-skin contact and breastfeeding, inconsistent staff practices and gaps in prenatal counseling hinder full protocol realization—a finding echoed in similar studies in LMICs (Khoirunnisa et al., 2023).

Empowerment Through Early Mobilization

Early mobilization emerged as both a clinical goal and a symbolic milestone. For many participants, standing and walking within 24 hours of surgery instilled confidence, autonomy, and optimism for motherhood. This resonates with the concept of "embodied recovery," where regaining control of one's body post-surgery supports emotional resilience. Similar findings have been reported by Artawan et al. (2021), who emphasized that spinal anesthesia and early activity minimize post-cesarean morbidity while strengthening psychological recovery.

The link between effective pain management and functional recovery was also evident. Participants associated pain control not merely with comfort but with the ability to breastfeed, walk, and emotionally engage with their newborns. This challenges the traditional view of postoperative pain solely as a clinical outcome, suggesting instead that pain relief is a gateway to maternal role assumption.

Limitations and Future Directions

This study has several limitations. First, it was conducted at a single hospital with a relatively homogeneous population, which may limit generalizability. Second, although member checking and reflexive journaling

were used to enhance trustworthiness, qualitative interpretations inherently carry subjectivity. Additionally, participants excluded due to comorbidities (e.g., diabetes, eclampsia) represent an important population whose experiences may differ under ERACS.

Future research should expand to include diverse settings and explore how ERACS impacts vulnerable or high-risk obstetric populations. Longitudinal designs could also illuminate the trajectory of maternal recovery beyond hospital discharge. Importantly, integrating qualitative findings into ERACS guideline development may enhance protocol responsiveness to patient needs, particularly in resource-constrained settings.

Relevance to Clinical Practice

The findings of this study highlight the significant benefits of implementing the Enhanced Recovery After Cesarean Section (ERACS) protocol in improving patient care quality, clinical decision-making, and healthcare efficiency. The results presented provide deep insights into the real-life experiences of postpartum mothers, particularly regarding their emotional resilience, sense of autonomy, and trust in the healthcare system. These narratives demonstrate that early mobilization and effective pain management not only support faster physical recovery but also enhance mothers' confidence in caring for their newborns.

From a clinical perspective, these insights suggest that incorporating patients' voices into ERACS implementation can help shape more empathetic and patient-centered care. For example, staff training could include patient testimonials to deepen understanding of mothers' recovery journeys, potentially improving staff

attitudes and communication practices. Additionally, maternal recovery education programs could be tailored using themes derived from patient experiences, emphasizing empowerment, assurance, and emotional support alongside clinical information.

These implications support the integration of ERACS not only as a clinical protocol but also as a holistic framework that values mothers' experiences. Thus, ERACS can positively influence health policy, professional development, and maternal care practices by promoting clinical efficiency and compassionate care.

Conclusion

Based on the research conducted on post-anesthesia cesarean section patients using the ERACS protocol at RS Tk.II 03.05.01 Dustira, Cimahi, this study concludes that the ERACS protocol not only facilitates clinical recovery but also shapes meaningful patient experiences during the postoperative period. While the majority of patients were multiparous and of reproductive age with stable intraoperative hemodynamics and low incidence of side effects, the qualitative narratives revealed deeper insights into how ERACS influenced their recovery journey.

Patients expressed a sense of empowerment through early mobilization and the ability to initiate immediate breastfeeding (IMD), which fostered maternal confidence and emotional bonding with their newborns. The gradual reduction of pain and shorter recovery time were perceived not merely as physical improvements but as milestones that allowed them to regain autonomy and engage more actively in their care. The supportive role of the care team, facilitated by the structured ERACS approach, also contributed to feelings of safety and trust.

These findings suggest that beyond numerical indicators, the ERACS protocol provides a patient-centered recovery experience that enhances emotional well-being, encourages active participation in recovery, and strengthens the mother's role from the earliest moments after birth. Integrating such insights into future clinical practice can help develop more empathetic, efficient, and personalized perioperative care models.

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CrediT Authorship Contributions Statement

Arief Kurniawan: Conceptualization, Methodology, Investigation, Writing – Original Draft.

Ratna Dewi: Supervision, Validation, Writing – Review & Editing.

Indah Pratiwi: Data Curation, Project Administration, Resources.

Dimas Nugraha: Formal Analysis, Visualization, Writing – Review & Editing.

Conflicts Of Interest

The authors declare no conflict of interest.

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