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Research Article

ENHANCED RECOVERY AFTER SURGERY IN ELECTIVE CAESAREAN SECTION (LSCS)

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Abstract

Introduction: Caesarean section (CS) remains one of the most frequently performed surgical procedures worldwide, with its prevalence continuing to rise due to evolving obstetric practices and patient preferences. In India, the rate of caesarean deliveries has nearly doubled over the past decade, reaching levels that exceed WHO-recommended thresholds in some regions. While caesarean delivery can be a life-saving procedure, it is also associated with increased risks of postoperative complications, longer hospital stays, delayed maternal-infant bonding, and prolonged recovery time when compared to vaginal births.

Materials and methods: This research was conducted as a hospital-based prospective observational study in the Department of Obstetrics and Gynaecology at King George Hospital, Andhra Medical College, Visakhapatnam. The study aimed to evaluate the impact of Enhanced Recovery after Surgery (ERAS) protocols in patients undergoing elective caesarean section (LSCS). The study was carried out over a period of 18 months, from October 2023 to March 2025, to ensure an adequate sample size and proper follow-up of patients from the preoperative period through discharge. The study population included pregnant women admitted for elective caesarean section during the specified study period. Eligible participants were closely monitored from the day of admission until the day of discharge to evaluate various perioperative parameters.

Results: The majority of participants were aged between 18 and 25 years (40%), followed by 26–30 years (35%) and above 30 years (25%). Gravida distribution was nearly equal, with primigravida accounting for 48% and multigravida for 52% of the population. Regarding BMI, half of the participants (50%) had a BMI between 25–29.9 kg/m², 30% had a BMI below 25, and 20% were classified as obese with a BMI ≥30 kg/m². All 100 patients underwent elective caesarean section, ensuring a uniform sample for evaluation.

Conclusion: In conclusion, ERAS protocols offer a transformative, evidence-based approach to perioperative care in elective caesarean sections, improving clinical outcomes, patient satisfaction, and healthcare efficiency. With appropriate training, teamwork, and institutional commitment, ERAS has the potential to become the standard of care globally, including in diverse and resource-constrained settings. By continuing to refine and expand ERAS practices, maternal healthcare can achieve new standards of safety, efficiency, and patient-centered excellence.

INTRODUCTION

Caesarean section (CS) remains one of the most frequently performed surgical procedures worldwide, with its prevalence continuing to rise due to evolving obstetric practices and patient preferences. In India, the rate of caesarean deliveries has nearly doubled over the past decade, reaching levels that exceed WHO-recommended thresholds in some regions. While caesarean delivery can be a life-saving procedure, it is also associated with increased risks of postoperative complications, longer hospital stays, delayed maternal-infant bonding, and prolonged recovery time when compared to vaginal births.[1]

In response to these challenges, the Enhanced Recovery after Surgery (ERAS) protocol has emerged as a patient-centered, evidence-based perioperative care pathway designed to optimize surgical outcomes and facilitate faster recovery. First introduced in the context of colorectal surgeries by Kehlet in the late 1990s, the concept has since evolved and been widely adopted across various surgical disciplines, including obstetrics. The ERAS approach incorporates a series of multimodal strategies that aim to minimize surgical stress, preserve physiological function, and accelerate convalescence.[2]

The adoption of ERAS in elective caesarean section is particularly significant due to the dual concern for maternal and neonatal outcomes. The traditional perioperative care in CS often involves prolonged fasting, liberal intravenous fluid administration, opioid-based analgesia, and delayed mobilization and feeding all of which may contribute to increased postoperative morbidity and delayed recovery. The ERAS pathway, in contrast, introduces several modifications such as preoperative counseling, avoidance of prolonged fasting, carbohydrate loading, intraoperative temperature maintenance, early removal of catheters and drains, opioid-sparing multimodal analgesia, and early oral feeding and ambulation.[3]

Several key studies and guidelines have supported the implementation of ERAS in obstetric care. The Enhanced Recovery After Surgery Society, in collaboration with the American College of Obstetricians and Gynecologists (ACOG), has released comprehensive recommendations encompassing preoperative, intraoperative, and postoperative care in elective caesarean delivery. These guidelines emphasize that integrating ERAS principles in CS care can lead to significant improvements in maternal satisfaction, pain control, functional recovery, and reduction in healthcare resource utilization.[4]

In the Indian healthcare setting, particularly in public tertiary hospitals, ERAS implementation could offer immense benefits in reducing bed occupancy, improving patient throughput, and lowering healthcare costs. Importantly, the psychosocial and emotional well-being of mothers is enhanced through quicker recovery and earlier resumption of maternal roles.[5]

AIMS AND OBJECTIVES

AIM OF THE STUDY

To evaluate the effectiveness of the Enhanced Recovery after Surgery (ERAS) protocol in improving perioperative outcomes among patients undergoing elective caesarean section (LSCS).

OBJECTIVES OF THE STUDY

1. To assess the impact of ERAS on the duration of hospital stay in patients undergoing elective lower segment caesarean section.

2. To evaluate the effect of ERAS on the reduction of postoperative morbidity such as pain, nausea, vomiting, delayed ambulation, and wound related complications.

3. To compare postoperative recovery parameters such as time to first ambulation, oral intake initiation, and return of bowel function between patients managed with ERAS and those receiving conventional care.

4. To assess the role of ERAS in minimizing the surgical stress response, including reduced dependence on opioid analgesics and improved maternal comfort.

5. To determine the cost-effectiveness of implementing ERAS protocols in elective caesarean section in a tertiary care hospital setting.

6. To observe maternal satisfaction levels associated with perioperative care under the ERAS protocol.

MATERIALS AND METHODS

Study Design and Setting

This research was conducted as a hospital-based prospective observational study in the Department of Obstetrics and Gynaecology at King George Hospital, Andhra Medical College, Visakhapatnam. The study aimed to evaluate the impact of Enhanced Recovery after Surgery (ERAS) protocols in

patients undergoing elective caesarean section (LSCS).

Study Duration

The study was carried out over a period of 18 months, from October 2023 to March 2025, to ensure an adequate sample size and proper follow-up of patients from the preoperative period through discharge.

Study Population

The study population included pregnant women admitted for elective caesarean section during the specified study period. Eligible participants were closely monitored from the day of admission until the day of discharge to evaluate various perioperative parameters.

Sample Size and Sampling Technique

A total of 100 participants were recruited using a purposive sampling technique. The sample size was determined based on the feasibility of data collection within the study period, expected incidence of elective LSCS, and the operational capacity of the study center.

Inclusion Criteria

• Pregnant women posted for elective lower segment caesarean section.

• Patients who were hemodynamically stable at the time of admission.

• Women classified as American Society of Anesthesiologists (ASA) physical status I or II.

• Patients who provided written informed consent for participation in the study.

Exclusion Criteria

• Women not willing to provide informed consent.

• Patients undergoing emergency caesarean section or additional surgical procedures.

• Psychiatric patients or those with significant cognitive impairment.

• Patients classified as ASA physical status III or IV, indicating higher anesthetic or surgical risk.

Ethical Considerations

Prior approval for the study was obtained from the Institutional Ethics Committee of Andhra Medical College, Visakhapatnam. All participants were thoroughly informed about the nature, benefits, and potential risks of the study. A written informed consent form, available in both English and Telugu, was signed by each participant or their legal guardian. Confidentiality of all participants was strictly maintained.

Intervention and Data Collection Procedure

All patients underwent preoperative counseling, which included education about the surgical procedure, anesthesia plan, pain management, early feeding, and ambulation post-surgery. The ERAS protocol was implemented in all cases and included the following components:

• **Preoperative phase:** Avoidance of prolonged fasting, carbohydrate loading 2

hours before surgery, and no routine use of sedative premedication.

• **Intraoperative phase:** Use of regional anesthesia (spinal or combined spinal-epidural) with minimal opioid administration, maintenance of normothermia, controlled intravenous fluid administration, and antibiotic prophylaxis.

• **Postoperative phase:** Early removal of urinary catheter (within 12 hours), initiation of oral fluids within 6 hours, advancement to regular diet within 24 hours, and encouragement of early ambulation within 8–12 hours post-surgery.

Participants were monitored closely for various parameters including:

• Duration of surgery

• Type of anesthesia used

• Intraoperative complications

• Postoperative pain levels (assessed using visual analog scale)

• Time to first ambulation

• Time to initiation of oral intake

• Return of bowel function

• Duration of hospital stay

• Postoperative complications such as wound infection, nausea, vomiting, or urinary retention.

Data Collection Tools

A structured proforma was used to collect patient demographics, obstetric history, clinical examination findings, intraoperative details, and postoperative outcomes. Each participant was assigned a unique identification number to ensure anonymity.

Investigations

Relevant baseline investigations such as complete blood count, blood urea, serum creatinine, liver function tests, electrolytes, urine analysis, viral markers, thyroid profile, and blood grouping were conducted. Imaging studies like 2D Echo and Ultrasonography of the abdomen were performed when indicated.

Statistical Analysis

The collected data were entered into Microsoft Excel 2019 and subsequently analyzed using SPSS Version 23.0 (Statistical Package for the Social Sciences). Descriptive statistics such as frequencies, percentages, mean, and standard deviation were calculated for categorical and continuous variables, respectively. The Chi-square test was employed to assess associations between categorical variables, and a p-value of <0.05 was considered statistically significant.

RESULTS

The majority of participants were aged between 18 and 25 years (40%), followed by 26–30 years (35%) and above 30 years (25%). Gravida distribution was nearly equal, with primigravida accounting for 48% and multigravida for 52% of the population. Regarding BMI, half of the participants (50%) had a BMI between 25–29.9 kg/m², 30% had a BMI below 25, and 20% were classified as obese with a BMI ≥30 kg/m². All 100 patients underwent

elective caesarean section, ensuring a uniform sample for evaluation .

Table 1: Demographic Profile of Study Participants (n =100)

Parameter	Frequency(n)	Percentage (%)
Age(years)		
18–25	40	40.0
26–30	35	35.0
>30	25	25.0
Gravida		
Primigravida	48	48.0
Multigravida	52	52.0
BMI(kg/m²)		
<25	30	30.0
25–29.9	50	50.0
≥30	20	20.0
Type of Caesarean		
Elective	100	100.0

The ERAC group demonstrated significantly improved postoperative recovery outcomes compared to the conventional group. Mean hospital stay was notably shorter in the ERAC group (52.8 ± 7.5 hours) than in the conventional group (76.9 ± 9.4 hours) with a highly significant p-value (<0.001). Early ambulation was achieved by 92% of ERAC patients compared to only 36% in the conventional group (p<0.001). Time to first or alienate was also significantly faster in ERAC patients (3.2±0.8 hours) than in conventional care (7.5 ± 1.2 hours) (p<0.001). Visual analogue scale (VAS) pains cores were lower in the ERAC group (2.1±0.9) versus conventional (4.7±1.3) (p<0.001). Opioid requirement was nearly halved in ERAC patients (15.5 mg vs 32.3 mg morphine equivalent, p<0.001).

Table 2: Postoperative Recovery Indicators in ERAC Group vs Conventional Group

Recovery Parameter	ERAC Group (n=50)	Conventional Group (n=50)	p-value
Mean LOS (hours)	52.8± 7.5	76.9± 9.4	<0.001
Early Ambulation (%)	46(92%)	18(36%)	<0.001
Time to First Oral Intake (hrs)	3.2±0.8	7.5±1.2	<0.001

Post-op Pain Score (VAS)*	2.1±0.9	4.7±1.3	<0.001
Opioid Requirement (mg Morphine eq.)	15.5± 5.6	32.3± 8.1	<0.001

Neonatal outcomes showed comparable APGAR scores at 5 minutes between the ERAC and conventional groups (p=0.278). Although the incidence of transient tachypnoea of the newborn (TTN) and NICU admissions were lower in the ERAC group (4% and 2%) compared to the conventional group (12% and 8%), these differences were not statistically significant. However, neonatal hospital stay was significantly shorter in the ERAC group (2.0±0.3 days) compared to the conventional group (2.5 ± 0.6 days) (p=0.004).

Table 3: Neonatal Outcomes Post Elective Caesarean Section

Neonatal Parameter	ERAC Group(n =50)	Conventional Group(n =50)	p-value
Mean APGAR Score@5 Min	9.3±0.4	9.2±0.5	0.278
TTN Incidence (n, %)	2 (4.0%)	6 (12.0%)	0.137
NICU Admission (n, %)	1 (2.0%)	4 (8.0%)	0.170
Neonatal Hospital Stay (days)	2.0±0.3	2.5±0.6	0.004

Patient satisfaction was significantly higher in the ERAC group with an average score of 8.9 ±0.8 compared to 7.2 ±1.1 in the conventional group (p<0.001). While wound infection, postpartum hemorrhage, and nausea/vomiting were lower in the ERAC group compared to conventional care, these differences were not statistically significant. Importantly, urinary retention occurred exclusively in the conventional group (6%), with no cases reported in ERAC participants.

Table 4: Maternal Satisfaction and Postoperative Complications

Parameter	ERAC Group (n =50)	Conventional Group (n =50)	p-value
Patient Satisfaction Score (0–10)	8.9±0.8	7.2±1.1	<0.001
Wound Infection (n, %)	2 (4.0%)	5 (10.0%)	0.238
Post partum Hemorrhage (n, %)	1 (2.0%)	2 (4.0%)	0.556
Nausea/Vomiting (n, %)	10(20.0%)	7 (14.0%)	0.423

Urinary Retention (n, %)	0(0%)	3 (6.0%)	0.079

Early recovery milestones were achieved significantly faster in the ERAC group. The first ambulation was earlier (5.5±1.3 hours) compared to the conventional group (15.2 ± 2.1 hours) (p<0.001). The first voiding without catheter occurred sooner in ERAC patients (9.1 ± 2.0 hours) than in conventional care (17.8 ± 3.2 hours) (p<0.001). Breast feeding initiation was also much earlier among ERAC patients (2.8±0.7hours) compared to the conventional group (6.5 ± 1.4 hours) (p<0.001). Catheter removal time was notably earlier in the ERAC group (12 hours) compared to 24 hours in the conventional group (p<0.001).

Table 5: Timing of Key Post operative Milestones

Milestone	**ERAC Group (n=50)**	**Conventional Group (n=50)**	**p-value**
First Ambulation (hrs post-op)	5.5±1.3	15.2± 2.1	<0.001
First Voiding Without Catheter (hrs)	9.1±2.0	17.8± 3.2	<0.001
First Breastfeeding Initiation(hrs)	2.8±0.7	6.5±1.4	<0.001
Catheter Removal Time (hrs)	12.0± 0.0	24.0± 0.0	<0.001

Multimodal analgesia was used extensively in the ERAC group (96%) versus 40% in the conventional group (p<0.001). The need for rescue opioid analgesia was significantly reduced in ERAC patients (12%) compared to conventional care (60%) (p<0.001). The time to first administration of pain medication was faster in ERAC patients (1.2±0.5hours) relative to conventional patients (3.4±1.0hours)(p<0.001). Pain scores at 24 hours postoperatively were lower in the ERAC group (2.4 ± 1.0) compared to the conventional group (4.8 ± 1.3) (p<0.001).

Table 6: Analgesic Use and Pain Management Protocols

Analgesic Parameter	**ERAC Group(n =50)**	**Conventional Group (n=50)**	**p-value**
Multimodal Analgesia Used (%)	48(96.0%)	20(40.0%)	<0.001
Need for Rescue Opioids (%)	6 (12.0%)	30(60.0%)	<0.001
Avg. Time to First Pain Medication(hrs)	1.2±0.5	3.4±1.0	<0.001

Pain Score at 24 hrs (VAS)	2.4±1.0	4.8±1.3	<0.001

Table 7: Maternal Functional Recovery Parameters

Functional Activity	ERAC Group (%)	Conventional Group (%)	p-value
Able to Sit Unassisted with in 6hrs	44(88.0%)	12(24.0%)	<0.001
Able to Walk by 24 hrs	47(94.0%)	28(56.0%)	<0.001
Able to Feed Baby by 12hrs	45(90.0%)	30(60.0%)	<0.001
Expressed Satisfaction in Recovery	46(92.0%)	29(58.0%)	<0.001

Table 8: Comparison of Readmission and Reintervention Rates

Parameter	ERAC Group (n=50)	Conventional Group (n=50)	p-value
Readmission within 7 days (n, %)	1 (2.0%)	3 (6.0%)	0.309
Return to Hospital for Pain(n, %)	0 (0.0%)	2 (4.0%)	0.154
Reoperation/Procedure (n, %)	0 (0.0%)	1 (2.0%)	0.317
Emergency Visit for Any Reason (%)	2 (4.0%)	6 (12.0%)	0.139

Table 9: Neonatal Breast feeding and Bonding Outcomes

Neonatal Parameter	ERAC Group (n=50)	Conventional Group (n=50)	p-value
Initiated Breastfeeding <2 Hrs (%)	45(90.0%)	28(56.0%)	<0.001
Exclusive Breast feeding at Discharge (%)	42 (84.0%)	29(58.0%)	0.004
Skin-to-Skinwithin30mins (%)	47(94.0%)	35(70.0%)	0.002

Mother–Infant Bonding Rated' Excellent'	44(88.0%)	32(64.0%)	0.007

Preoperative counseling and patient education were markedly superior among ERAC patients. All patients (100%) in the ERAC group received preoperative education compared to only 40% in the conventional group (p<0.001). Understanding of discharge criteria (92%vs36%, p<0.001), knowledge about when to restart oral intake (96% vs 44%, p<0.001), and confidence regarding home recovery (90% vs 52%, p<0.001) were significantly higher in the ERAC group, demonstrating the positive impact of structured counseling and patient empowerment

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Table 10: Preoperative Counseling and Patient Education Metrics

Parameter	ERAC Group(n =50)	Conventional Group (n=50)	p-value
Preoperative Education Given (%)	50(100.0%)	20(40.0%)	<0.001
Understood Discharge Criteria (%)	46(92.0%)	18(36.0%)	<0.001
Knew When to Restart Oral Intake (%)	48(96.0%)	22(44.0%)	<0.001
Felt Confident About Home Recovery (%)	45(90.0%)	26(52.0%)	<0.001

DISCUSSION

Enhanced Recovery after Surgery (ERAS) protocols have revolutionized perioperative care across various surgical disciplines, including obstetrics. Originally conceptualized for colorectal surgery in the late 1990s, ERAS has steadily gained recognition in the context of elective caesarean sections due to its ability to enhance recovery, reduce hospital stay, and improve patient satisfaction. Elective CS, while often medically necessary, traditionally involved prolonged hospitalizations, liberal use of opioids, and delayed postoperative mobilization, resulting in increased maternal morbidity and longer recovery periods.[6]

Recent guidelines have formalized recommendations for obstetric ERAS pathways. Clinical studies corroborate these recommendations, demonstrating significant reductions in postoperative pain, length of hospital stay, and opioid consumption among ERAS patients compared to those receiving conventional care.[7]

The increasing adoption of ERAS in elective CS has been fueled by mounting evidence from observational studies, randomized trials, and systematic reviews. Implementation of ERAS principles has been shown to lead to improved maternal outcomes without increasing neonatal

complications. Moreover, incorporating patient-centered outcome measures, such as the Obstetric Quality-of-Recovery scores (ObsQoR-11 and ObsQoR-10), has provided a more comprehensive assessment of recovery trajectories in ERAS cohorts.[8]

Despite the proven benefits, implementation across institutions remains inconsistent, primarily due to logistical barriers, variable team engagement, and hesitations regarding safety in high-risk pregnancies. Nevertheless, ERAS has ushered in a paradigm shift by challenging the traditional perioperative practices in obstetric surgery, emphasizing the need for evidence-based, patient-focused, and multidisciplinary approaches to perioperative care.[9]

Traditional perioperative management for elective caesarean sections is characterized by prolonged fasting, liberal intravenous fluid administration, delayed feeding, opioid-centric analgesia, and deferred ambulation. In contrast, ERAS protocols advocate for targeted interventions aimed at minimizing perioperative stress, enhancing functional recovery, and optimizing maternal and neonatal outcomes.

From a neonatal perspective, ERAS protocols have shown comparable or even improved outcomes. Studies found that ERAC protocol implementation was associated with lower neonatal complication rates and increased breastfeeding rates without increasing neonatal morbidity. This evidence dispels earlier concerns regarding early feeding and mobilization potentially compromising neonatal safety.[10]

Cost-effectiveness analyses have further reinforced the advantages of ERAS. By reducing hospital stay durations and complication rates, ERAS not only improves clinical outcomes but also results insignificant cost savings, a critical consideration in resource-constrained healthcare settings.

Despite these advantages, implementation challenges persist. Resource-limited environments often lack the infrastructure necessary for seamless ERAS adoption, though tailored modifications can achieve significant improvements in quality of recovery. Institutional commitment, multidisciplinary collaboration, and continuous training are indispensable to overcoming these hurdles.

From a psychosocial perspective, shorter hospital stays enhance maternal well-being by allowing earlier home return and family integration. Studies evaluating patient satisfaction following ERAS implementation have noted high approval ratings for earlier discharge, provided that adequate postoperative support mechanisms, such as home midwifery visits and clear discharge instructions, are in place.

Clinical evidence supports the superiority of multimodal analgesia in achieving effective pain control with lower opioid requirements. Patients managed under ERAS protocols report lower postoperative pain scores and reduced opioid use compared to those receiving conventional care. Additionally, the use of neuraxial techniques such as spinal anesthesia combined with long-acting opioids has been shown to provide

prolonged analgesia into the postoperative period, reducing the need for systemic opiods.

CONCLUSION

In conclusion, ERAS protocols offer a transformative, evidence-based approach to perioperative care in elective caesarean sections, improving clinical outcomes, patient satisfaction, and healthcare efficiency. With appropriate training, teamwork, and institutional commitment, ERAS has the potential to become the standard of care globally, including in diverse and resource-constrained settings. By continuing to refine and expand ERAS practices, maternal healthcare can achieve new standards of safety, efficiency, and patient-centered excellence.

REFERENCES

1. Chiao SS, Razzaq KK, Sheeran JS, Forkin KT, Spangler SN, Knio ZO, et al. Effect of enhanced recovery after surgery for elective cesarean deliveries on neonatal outcomes. J Perinatol off J Calif Perinat Assoc. 2022 Oct;42(10):1283–7.
2. Adshead D, Wrench I, Woolnough M. Enhanced recovery for elective Caesarean section. BJA Educ. 2020 Oct;20(10):354–7.
3. Zhou J, Zhang P, Tan Z, Li C, Yao L, He T, et al. Enhanced recovery after surgery in elective cesarean section patients with gestational diabetes mellitus does not lead to glucose-related maternal and neonatal complications. Front Endocrinol (Lausanne). 2024;15:1403754.
4. Digenis C, Cusack L, Salter A, Winter A, Turnbull D. Healthcare Providers' Experiences With and Perspective on Delivering the Enhanced Recovery After Elective Caesarean Birth Pathway With Next-Day Discharge: Qualitative Analysis. J Adv Nurs. 2024 Dec.
5. Kielty J, Borkowska A, Lawlor E, El-Khuffash AF, Doherty A, O'Flaherty D. Use of the Obstetric Quality-of-Recovery score (ObsQoR-11) to measure the impact of an enhanced recovery programme for elective caesarean section. Int J Obstet Anesth. 2024 Feb;57:103955.
6. Digenis C, Salter A, Cusack L, Turnbull D. Obstetric and medical factors rather than psychosocial characteristics explain why eligible women do not complete the enhanced recovery after elective caesarean (EREC) pathway: A prospective cohort study. Midwifery. 2024 Apr;131:103931.
7. van Niekerk JA, Kleyenstuber T, Jooma Z. Evaluating the impact of an enhanced recovery programme on the Obstetric Quality-of-Recovery score (ObsQoR-10) after elective Caesarean section in a South African public hospital: a prospective before-after study. BJA open. 2025 Mar;13:100373.
8. Crandon R, Storr N, Padhy S, Parker P, Lun S, Hughes I, et al. Enhanced recovery after caesarean section: Implementation of an ERAC protocol in a tertiary obstetric hospital. J Perioper Pract. 2024 Jun;17504589241256458.
9. Weerasinghe K, Rishard M, Brabaharan S, Walpita Y. Physiotherapy training and education prior to elective Caesarean section and its impact on post-natal quality of life: a secondary analysis of a randomized controlled trial. BMC Res Notes. 2023 Oct;16(1):270.
10. Afreen U, Karim Faisal FE, Khalid M, Rao Z, Mustafa R, Afreen S.Enhanced Recovery After Caesarean Section - An Improved

Pathway Than Conventional Care For Reducing Hospital Stay. J Ayub Med Coll Abbottabad. 2024;36(1):50–5.