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EVALUATION OF POSTOPERATIVE PAIN MANAGEMENT STRATEGIES FOLLOWING CESAREAN SECTION IN DERA ISMAIL KHAN

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Abstract

Cesarean section is one of the most commonly performed obstetric surgical procedures worldwide and is an important life-saving intervention when vaginal delivery may endanger the mother or fetus. However, cesarean section is associated with significant postoperative pain due to abdominal incision, tissue trauma, uterine contractions, and inflammatory responses. Poorly controlled postoperative pain can delay maternal recovery, reduce early mobilization, interfere with breastfeeding, disturb maternal–infant bonding, prolong hospital stay, and decrease overall maternal satisfaction. Therefore, effective postoperative pain management is an essential component of quality obstetric and anesthesia care. The present study was conducted to evaluate postoperative pain management strategies following cesarean section in hospitals of Dera Ismail Khan. The main objectives were to identify commonly used analgesics and pain management methods, assess postoperative pain severity, evaluate side effects of analgesics, and determine maternal satisfaction with postoperative pain management. A descriptive cross-sectional observational study design was used. A total of 150 women aged 18–45 years undergoing elective and emergency cesarean sections were included through convenience sampling. Data were collected using a structured questionnaire. Pain severity was assessed by using the Visual Analog Scale (VAS), while maternal satisfaction and side effects were also recorded. Data were analyzed using SPSS, and results were presented in the form of frequencies, percentages, tables, and figures. The findings of the study showed that postoperative pain remained an important clinical issue among women after cesarean section. Most participants experienced mild pain at rest, while pain intensity increased during movement. Mild pain at rest was reported by 82.7% of participants, moderate pain by 12.7%, and severe pain by 4.7%. However, during movement, mild pain decreased to 58.7%, while moderate pain increased to 33.3% and severe pain increased to 8.0%. These findings indicate that movement-related pain was more common than pain at rest and may affect early ambulation, breastfeeding, and maternal self-care. The commonly used analgesics included opioids, non-steroidal anti-

inflammatory drugs, and paracetamol. Pethidine and tramadol were commonly used opioid analgesics, while diclofenac sodium and paracetamol were used as co-analgesics. Multimodal analgesia provided better pain control compared with single-drug therapy because it acts through different pain pathways and reduces the need for excessive opioid use. Regarding side effects, 61.3% of participants reported no side effects, while nausea, vomiting, drowsiness, pruritus, and urinary retention were reported in some patients. Maternal satisfaction was generally good, as 48.7% of women were satisfied and 24.0% were highly satisfied with pain management. However, 27.3% were not satisfied, indicating the need for improvement in postoperative pain assessment and analgesic practices. **Conclusion:** Hence it is concluded that Postoperative pain after cesarean section is still a major issue, especially during movement. Better pain assessment, timely analgesics, counseling, and standardized pain management protocols are needed to improve maternal recovery and care.

Introduction

Pain is an unpleasant sensory and emotional experience associated with actual or potential tissue damage and is considered the fifth vital sign in clinical practice because of its importance in assessing patient well-being (Raja et al., 2020). Postoperative pain is one of the most common complications following surgery, and inadequate pain control can delay recovery, increase hospital stay, reduce patient satisfaction, and contribute to chronic pain and other postoperative complications (Reddi & Curran, 2014; Tazreean, Nelson, & Twomey, 2021).

Cesarean section (CS) is one of the most frequently performed surgical procedures worldwide and is often lifesaving for both mother and baby when vaginal delivery is not safe (Asiyanbola et al., 2022). However, because it is a major abdominal surgery, women commonly experience moderate to severe postoperative pain during the first 24–48 hours after delivery. Poorly controlled pain can limit early mobilization, interfere with breastfeeding and newborn care, delay maternal recovery, and negatively affect mother–infant bonding and psychological well-being (Childs et al., 2020; Stupak et al., 2021; Samah Mohsen et al., 2018).

Effective postoperative pain management is therefore a key component of obstetric care. Current management includes multimodal analgesia using opioids, non-steroidal anti-

inflammatory drugs (NSAIDs), paracetamol, regional anesthesia techniques such as intrathecal opioids and transversus abdominis plane (TAP) blocks, along with non-pharmacological measures including early mobilization, patient education, and psychological support (Arroyo-Fernández, Seoane, & Morera, 2020; Podder et al., 2025). These approaches improve pain relief while minimizing opioid-related adverse effects and promoting faster recovery.

The rate of cesarean section has increased worldwide and is also rising in Pakistan, exceeding the recommended level in many healthcare facilities (Robson & De Costa, 2017; Jadoon et al., 2024). Despite advances in anesthesia and pain management, many hospitals in developing regions continue to face challenges such as limited resources, inadequate pain assessment, lack of standardized protocols, and insufficient staff training, resulting in suboptimal postoperative pain control (Narayan, 2010).

In Dera Ismail Khan, there is limited evidence regarding the effectiveness of current postoperative pain management practices following cesarean section. Evaluating existing pain management strategies is important to identify gaps in clinical practice, improve maternal recovery, enhance patient satisfaction, and support the development of evidence-based postoperative pain management protocols.

Materials and Methods

This study employed a cross-sectional observational design to evaluate postoperative pain management strategies and their effectiveness among women undergoing cesarean section. The study was conducted in the obstetrics and gynecology departments of District Head Quarter Hospital, Dera Ismail Khan, Khyber Pakhtunkhwa, Pakistan, over a period of six months (January–June 2026).

The study population comprised women who underwent either elective or emergency cesarean section during the study period. A total of **150 participants** were included using a convenience sampling technique. Women aged 18–45 years who underwent cesarean delivery, were willing to participate, and provided written informed consent were included. Patients with chronic pain disorders, psychiatric illness, long-term opioid use, severe postoperative complications, critical illness preventing communication, or those unwilling to participate were excluded.

Data were collected using a structured questionnaire consisting of demographic information, clinical characteristics, postoperative pain assessment, maternal satisfaction, and analgesic side effects. Postoperative pain was assessed using the **Visual Analog Scale (VAS)**.

Results

This chapter presents the results of the study conducted to evaluate postoperative pain management strategies following cesarean section in selected hospitals of Dera Ismail Khan. The findings are arranged according to the study objectives and include demographic characteristics, clinical characteristics, analgesic methods used, postoperative pain scores, side effects of analgesics, maternal satisfaction, and associations between selected variables. Data are presented in frequencies and percentages, while figures are used to provide a clearer visual interpretation of important findings.

3.1 Demographic Characteristics of Study Participants

A total of 150 women undergoing cesarean section were included in the analysis. The demographic profile shows that most participants belonged to the reproductive age group of 26-35 years. This indicates that cesarean delivery in the present sample was most common among women in the active reproductive period. The majority of women were housewives and belonged to lower or middle socioeconomic groups, reflecting the local social pattern of the study area.

Table 3.1: *Socio-demographic characteristics of post-cesarean women (n=150)*

Variables	Frequency	Percent (%)
Age group		
18-25 years	35	23.3
26-35 years	88	58.7
36-45 years	27	18.0
Educational status		
No formal education	34	22.7
Primary/Matric	51	34.0
Intermediate or above	65	43.3
Occupation		

Housewife	123	82.0
Employed	27	18.0
Socioeconomic status		
Low income	56	37.3
Middle income	73	48.7
High income	21	14.0

Table 3.1 shows that 58.7% of participants were aged 26-35 years, followed by 23.3% in the 18-25 years group and 18.0% in the 36-45 years group. This pattern suggests that most cesarean sections occurred among women of middle reproductive age. Regarding education, 43.3% had intermediate or higher education, while 22.7% had no formal education. A large proportion of participants were housewives (82.0%), which may influence dependence on family support during the postoperative period. The socioeconomic distribution shows that nearly half of the respondents belonged to the middle-income group, while 37.3% belonged to the low-income group.

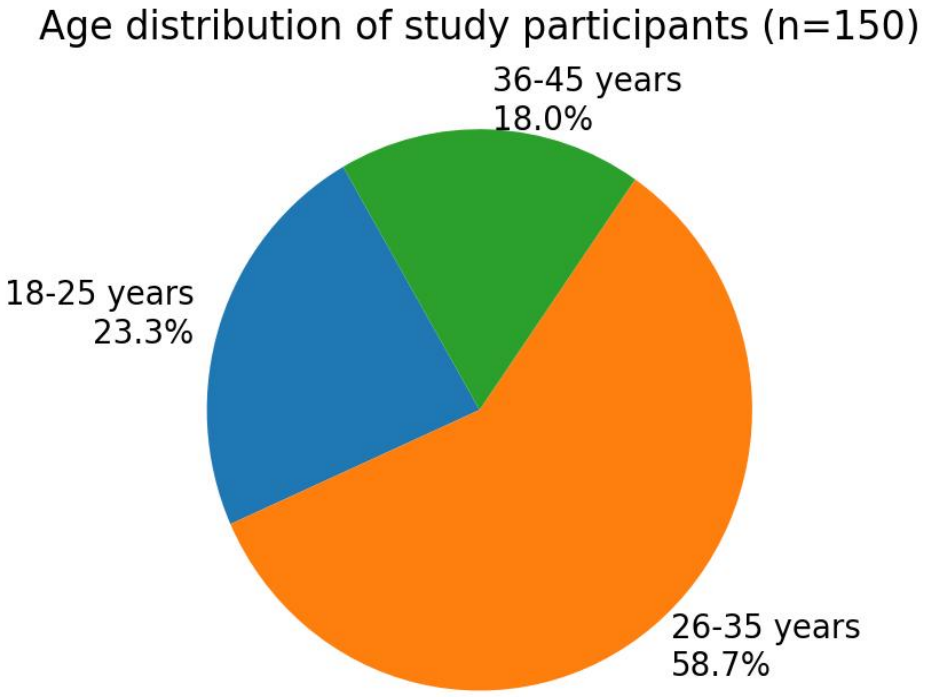

Figure 3.1: Age distribution of study participants (n=150)

Figure 3.1 visually confirms that the 26-35 years age group dominated the study population. The smaller proportion of women aged 36-45 years suggests fewer cesarean deliveries among older reproductive-age women in this sample. This age distribution is important because younger and middle-aged mothers may differ in pain tolerance, recovery ability, and satisfaction with postoperative care.

3.2 Clinical Characteristics of Cesarean Section

Clinical characteristics are important because the type of cesarean section, anesthesia technique, and previous surgical history may influence postoperative pain intensity and recovery. Emergency cesarean sections were slightly more common than elective procedures in this sample, which may reflect late presentation, referral patterns, or obstetric complications in the local setting.

Table 3.2: *Clinical characteristics of participants (n=150)*

Clinical variable	Frequency	Percent (%)
Type of cesarean section		
Elective cesarean section	67	44.7
Emergency cesarean section	83	55.3
Type of anesthesia		
Spinal anesthesia	137	91.3
General anesthesia	13	8.7
Previous cesarean section		
Yes	61	40.7
No	89	59.3
First mobilization after surgery		
Within 12 hours	42	28.0
12-24 hours	84	56.0
After 24 hours	24	16.0

Table 3.2 demonstrates that emergency cesarean section accounted for 55.3% of cases, while elective cesarean section accounted for 44.7%. Spinal anesthesia was the most commonly used technique (91.3%), indicating that regional anesthesia was the preferred approach for cesarean delivery in the selected hospitals. More than half of the patients started mobilization between 12 and 24 hours after surgery. Delayed mobilization after

24 hours was observed in 16.0% of women, which may be associated with higher postoperative pain, weakness, or fear of movement.

3.3 Pain Management Methods Used After Cesarean Section

Different analgesic regimens were used for postoperative pain control. The most frequently used strategy was a combination of NSAIDs and paracetamol, followed by opioid-based combinations. Multimodal analgesia was used in a smaller proportion of patients, showing that although combined therapy is present in clinical practice, its use may still be limited by availability, institutional protocols, and provider preference.

Table 3.3: *Postoperative pain management strategies used (n=150)*

Analgesic strategy	Frequency	Percent (%)
NSAID + paracetamol	69	46.0
Opioid + NSAID	45	30.0
Multimodal regimen (opioid + NSAID + paracetamol)	27	18.0
Opioid alone	9	6.0

Table 3.3 indicates that 46.0% of participants received NSAID with paracetamol, making it the most commonly used regimen. Opioid with NSAID was used in 30.0% of patients, while only 18.0% received a full multimodal regimen. Opioid alone was used in 6.0% of cases. The low use of opioid-only therapy is a positive finding because opioid-only regimens may increase adverse effects such as nausea, vomiting, sedation, and delayed recovery. However, the relatively limited use of complete multimodal analgesia suggests room for improvement in standardized postoperative pain protocols.

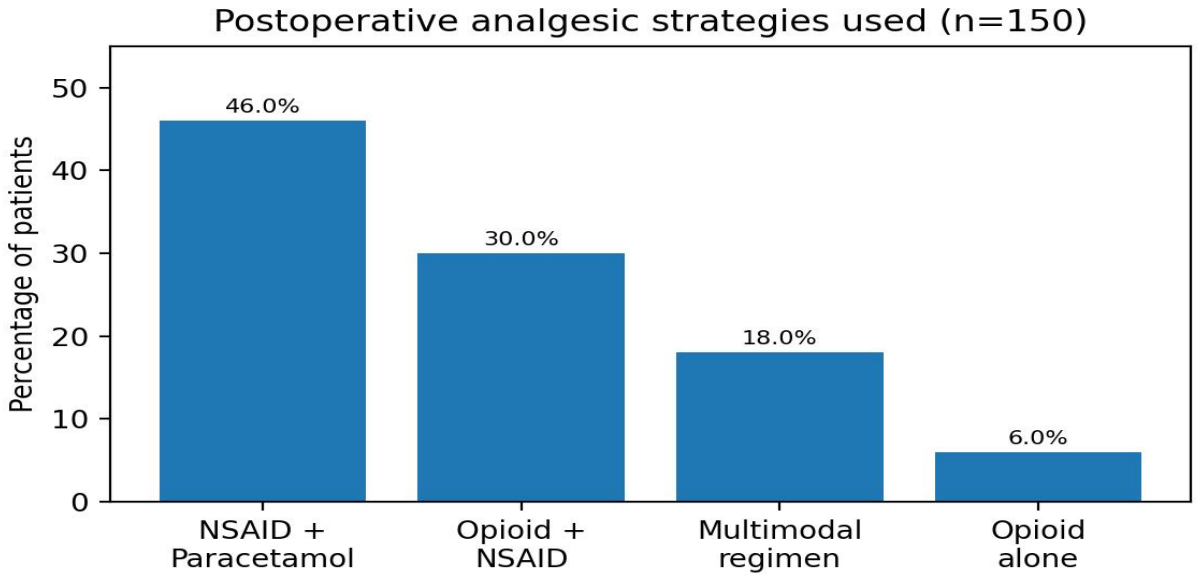

Figure 3.2: Postoperative analgesic strategies used among participants

Figure 3.2 shows that non-opioid combination therapy was the leading pain management strategy. This reflects a tendency to reduce opioid exposure. However, the figure also shows that multimodal analgesia was not universally applied, indicating a potential gap between recommended practice and routine clinical implementation.

3.4 Postoperative Pain Characteristics

Pain characteristics were assessed in terms of pain at the surgical site, pain intensity, and the time or condition in which pain was most commonly felt. Pain during movement was more frequent than pain at rest, which is expected after abdominal surgery because movement increases tension on the incision site and abdominal muscles.

Table 3.4: *Characteristics of postoperative pain among post-cesarean women*

Variables	Frequency	Percent (%)
Pain at surgical site		
Yes	52	34.7
No	98	65.3
Pain intensity among women reporting surgical site pain (n=52)		
Mild pain	25	48.1

Moderate pain	22	42.3
Severe pain	5	9.6
Moment when pain was felt most		
During movement	37	71.2
At rest/constant pain	15	28.8

Table 3.4 reveals that 34.7% of women reported pain at the surgical site. Among those who reported pain, mild pain was most common (48.1%), followed by moderate pain (42.3%) and severe pain (9.6%). Pain was most commonly felt during movement (71.2%), while 28.8% reported pain at rest or constant pain. This finding is clinically important because movement-related pain can delay early ambulation, breastfeeding positioning, and maternal self-care.

3.5 Pain Scores at Rest and Movement

The Visual Analog Scale (VAS) was categorized into mild pain (0-3), moderate pain (4-6), and severe pain (7-10). Pain scores were assessed separately at rest and during movement because post-cesarean pain is usually more intense during coughing, sitting, standing, walking, or breastfeeding positioning.

Table 3.5: *Distribution of VAS pain scores at rest and movement (n=150)*

Pain category	At rest n (%)	On movement n (%)
Mild pain (VAS 0-3)	124 (82.7)	88 (58.7)
Moderate pain (VAS 4-6)	19 (12.7)	50 (33.3)
Severe pain (VAS 7-10)	7 (4.7)	12 (8.0)

Table 3.5 shows that most women experienced mild pain at rest (82.7%), while only 4.7% had severe pain at rest. However, pain increased during movement: mild pain decreased to 58.7%, while moderate pain increased to 33.3% and severe pain increased to 8.0%. This pattern suggests that analgesic regimens were more effective in controlling resting pain than movement-related pain. Clinically, this indicates the need to assess dynamic pain, not only pain at rest, because dynamic pain directly affects early mobilization and maternal activities.

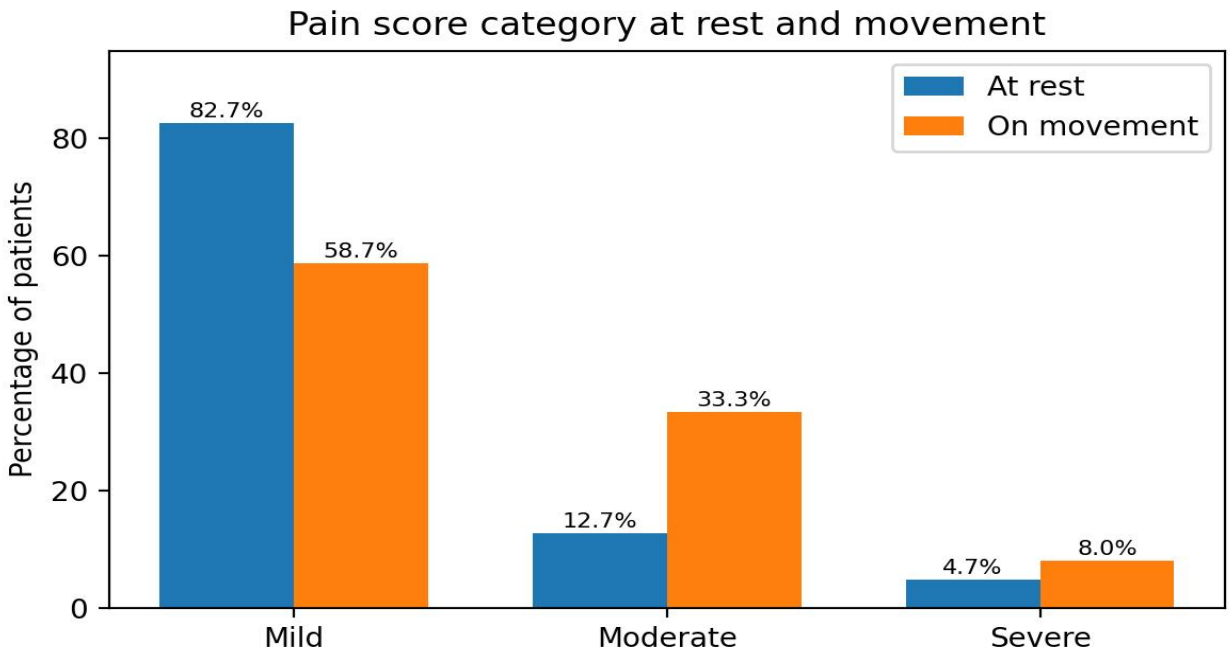

Figure 3.3: Percentage of patients having mild, moderate, and severe pain scores at rest and movement

Figure 3.3 clearly demonstrates that movement increased the proportion of moderate and severe pain. The difference between rest and movement pain highlights the importance of encouraging pain assessment before mobilization and breastfeeding. Adequate rescue analgesia and patient education may help reduce movement-related pain and improve recovery.

3.6 Side Effects of Analgesics

Side effects were assessed to evaluate the safety and tolerability of the pain management strategies. Although most women did not report significant adverse effects, nausea and vomiting were the most frequent complaints. These symptoms are common after cesarean section and may be related to opioids, anesthesia, surgical stress, or individual patient sensitivity.

Table 3.6: *Side effects reported after analgesic use (n=150)*

Side effect	Frequency	Percent (%)
No side effect	92	61.3
Nausea	24	16.0

Vomiting	12	8.0
Drowsiness/sedation	10	6.7
Pruritus/itching	7	4.7
Urinary retention	5	3.3

Table 3.6 indicates that 61.3% of participants did not experience any side effect. Nausea was reported by 16.0%, vomiting by 8.0%, drowsiness by 6.7%, pruritus by 4.7%, and urinary retention by 3.3%. The relatively low frequency of sedation and urinary retention may be linked to the limited use of opioid-only therapy. However, nausea and vomiting remain clinically relevant because they can reduce maternal comfort, delay oral intake, and interfere with newborn care.

3.7 Maternal Satisfaction with Pain Management

Maternal satisfaction was assessed as an important outcome of postoperative care. Satisfaction depends not only on pain relief but also on communication, side effects, ability to move, breastfeeding comfort, and overall support received from healthcare staff.

Table 3.7: *Distribution of maternal satisfaction level (n=150)*

Satisfaction level	Frequency	Percent (%)
Highly satisfied	36	24.0
Satisfied	73	48.7
Not satisfied	41	27.3

Table 3.7 shows that 48.7% of participants were satisfied and 24.0% were highly satisfied with postoperative pain management. Overall, 72.7% expressed satisfaction, while 27.3% were not satisfied. The proportion of unsatisfied women is important because it may represent patients with inadequate pain relief, delayed response to pain complaints, movement-related pain, or side effects of analgesics. Satisfaction can be improved through regular pain scoring, timely analgesic administration, counseling, and individualized pain management.

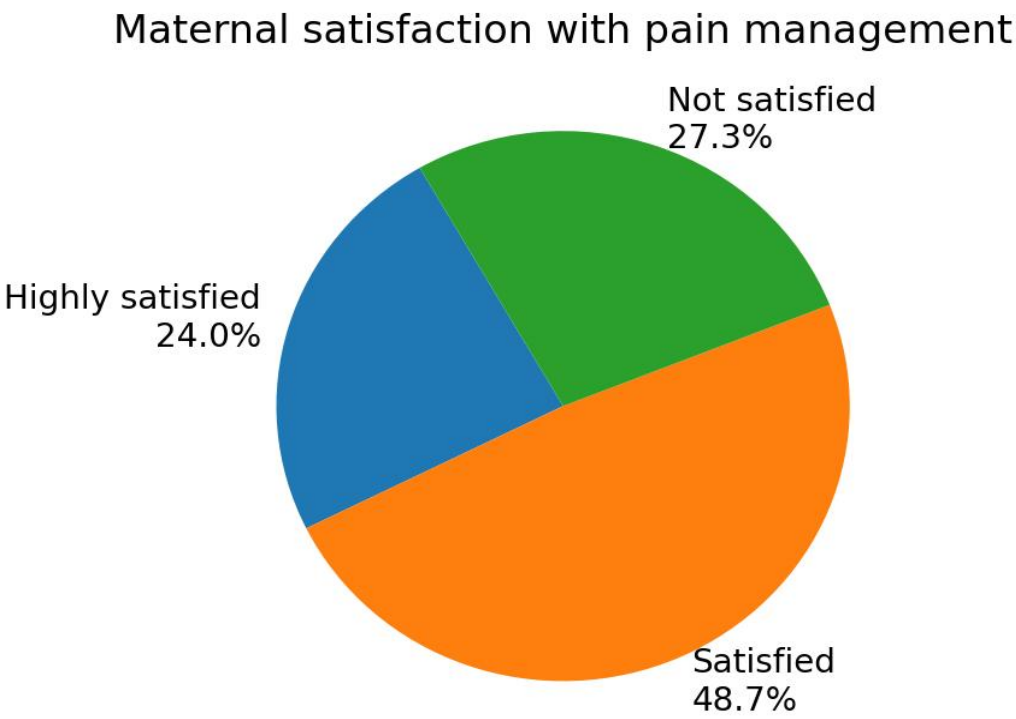

Figure 3.4: Maternal satisfaction with postoperative pain management

Figure 3.4 illustrates that most participants were either satisfied or highly satisfied. Nevertheless, more than one-fourth of participants were not satisfied, indicating that postoperative pain management was not optimal for all women. This finding supports the need for standardized protocols and routine assessment of both resting and movement-related pain.

3.8 Association Between Selected Variables and Pain Severity

Associations were examined to identify factors related to moderate-to-severe pain on movement. Movement pain was selected because it has a stronger effect on ambulation, breastfeeding, and maternal independence than pain at rest.

Table 3.8: *Association between selected variables and moderate-to-severe pain on movement (n=150)*

Variable	Mild pain n (%)	Moderate/Severe pain n (%)	p-value
Elective CS	45 (67.2)	22 (32.8)	0.041
Emergency CS	43 (51.8)	40 (48.2)	
Multimodal analgesia	22 (81.5)	5 (18.5)	0.018

Other regimens	66 (53.7)	57 (46.3)	
Mobilization within 24 hours	80 (63.5)	46 (36.5)	0.026
Mobilization after 24 hours	8 (33.3)	16 (66.7)	

Table 3.8 shows that moderate-to-severe pain on movement was higher among women who underwent emergency cesarean section (48.2%) compared with elective cesarean section (32.8%). This difference may be due to urgent surgical conditions, anxiety, and less preoperative preparation in emergency cases. Women receiving multimodal analgesia had lower moderate-to-severe movement pain (18.5%) compared with women receiving other regimens (46.3%), suggesting better pain control with combined analgesic approaches. Delayed mobilization after 24 hours was also associated with higher moderate-to-severe pain, indicating that pain and immobility may reinforce each other during recovery.

Discussion

The present study was conducted to evaluate postoperative pain management strategies following cesarean section among women admitted to selected hospitals of Dera Ismail Khan. The study assessed demographic characteristics, commonly used analgesic methods, pain intensity, maternal satisfaction, and side effects associated with postoperative pain management. Effective pain management following cesarean section is important because postoperative pain directly affects maternal recovery, early mobilization, breastfeeding, maternal–infant bonding, and overall patient satisfaction. The findings of the present study showed that the majority of participants belonged to the age group of **20–35 years**, while fewer participants were observed in the younger and older age categories. This finding is consistent with the study conducted by (Rahman, Debnath, and Haq 2022)in Bangladesh, where most women undergoing cesarean section also belonged to the reproductive age group of 20–35 years. The predominance of this age group may be explained by the fact that women of reproductive age are more likely to experience pregnancy and delivery-related procedures including cesarean section.

Regarding socioeconomic and demographic characteristics, the present study observed that most participants were unemployed and belonged mainly to middle and lower socioeconomic groups. Similar findings were reported by previous studies

conducted in developing countries where cesarean section patients commonly belonged to low and middle socioeconomic classes due to dependence on public healthcare facilities. Socioeconomic status may influence postoperative recovery because limited resources can affect access to healthcare services, nutrition, and follow-up care.The present study demonstrated that postoperative pain remained a significant problem following cesarean section. A considerable proportion of women reported pain at the surgical site during the postoperative period. Most participants experienced **mild to moderate pain**, while only a smaller proportion experienced severe pain. These findings are comparable to the results reported by(Ali et al. 2022), where mild pain at rest was observed in the majority of participants, while moderate and severe pain occurred more frequently during movement.

Pain intensity was found to increase during movement compared with rest. Women generally experienced less pain while resting; however, activities such as walking, changing position, and breastfeeding increased pain perception. This finding is supported by (Chang et al. 2025) who reported that movement-associated pain after cesarean section is often more severe due to tension on abdominal muscles and surgical incision sites. The findings also revealed that opioids and NSAIDs were among the most frequently used postoperative analgesics. Pethidine and tramadol were commonly administered, while diclofenac sodium and paracetamol were used as co-analgesics. Similar results were reported in previous literature where opioids remained the main treatment for moderate to severe postoperative pain despite concerns regarding side effects. (Sutton and Carvalho 2017) stated that NSAIDs reduce inflammation and decrease opioid requirements, making them effective components of multimodal analgesia.

The study showed that multimodal pain management strategies provided better pain control than single-drug approaches. Women receiving combined analgesic therapy generally reported lower pain scores and better postoperative comfort. This observation agrees with (Barrios et al. 2026) who identified multimodal analgesia as the preferred strategy because it targets multiple pain pathways while minimizing opioid consumption and adverse effects. Maternal satisfaction findings demonstrated that most participants were either satisfied or highly satisfied with postoperative pain

management services; however, a proportion of women remained unsatisfied. The dissatisfaction may be attributed to persistent pain, inadequate analgesic effects, delayed medication administration, or insufficient postoperative monitoring.Similar findings were observed in the study by (Rahman et al. 2025) where approximately one-third of patients were not satisfied with pain management services. Patient satisfaction is considered an important indicator of healthcare quality because it reflects effectiveness of treatment and adequacy of patient care.

The present study also evaluated side effects associated with analgesic use. Common complications included nausea, vomiting, dizziness, and sedation. These side effects were mainly associated with opioid administration. Similar observations were described by (Habibi et al. 2025) who reported nausea and sedation as frequent opioid-related adverse effects following cesarean delivery. Although opioids provide effective analgesia, excessive use may negatively affect maternal recovery and breastfeeding because of sedation and reduced alertness. Therefore, recent literature recommends limiting opioid use through multimodal analgesic techniques.The findings further showed that effective postoperative pain management contributed positively to maternal recovery. Women with adequate pain relief demonstrated better mobility, earlier ambulation, and improved ability to care for newborns. Previous studies by (Bujedo et al. 2014) reported that effective pain management facilitates early mobilization and reduces postoperative complications including deep vein thrombosis and pulmonary complications.Pain management also influenced breastfeeding and maternal–infant bonding. Mothers experiencing severe pain often had difficulty holding and feeding their infants. Similar findings were reported by (Kuguoglu et al. 2012) who emphasized that inadequate postoperative pain control may delay breastfeeding initiation and reduce maternal confidence.

The present study highlights that postoperative pain management in Dera Ismail Khan still faces several challenges including limited availability of advanced analgesic methods, lack of standardized protocols, inconsistent pain assessment practices, and resource limitations. Modern techniques such as **TAP block, patient-controlled analgesia (PCA), and intrathecal morphine** were not routinely used. These findings support previous literature indicating that healthcare systems in resource-limited settings often

experience barriers related to equipment availability, professional training, and institutional guidelines.

Overall, the present study demonstrates that postoperative pain following cesarean section remains an important clinical issue. Although most women achieved acceptable pain control using conventional analgesics, gaps still exist in pain assessment and management practices. Implementation of standardized protocols, multimodal analgesia approaches, improved staff training, and regular pain assessment using validated tools such as **Visual Analog Scale (VAS)** may improve maternal outcomes and patient satisfaction in hospitals of Dera Ismail Khan.

Conclusion

The present study was conducted to evaluate postoperative pain management strategies following cesarean section in hospital of Dera Ismail Khan. Cesarean section is a major abdominal surgical procedure and is commonly associated with postoperative pain, especially during the first 24–48 hours after surgery. Effective pain management is very important because it improves maternal comfort, supports early mobilization, promotes breastfeeding, enhances maternal–infant bonding, reduces complications, and improves overall patient satisfaction.In this study, a total of 150 women aged 18–45 years undergoing elective and emergency cesarean section were included. The findings showed that postoperative pain was still an important issue among post-cesarean mothers. Most women experienced mild pain at rest, but pain increased during movement. This shows that pain assessment should not be limited only to rest because movement-related pain has a direct effect on walking, changing position, breastfeeding, newborn care, and maternal independence.

The results showed that mild pain at rest was present in most participants, while moderate and severe pain were more common during movement. This indicates that the pain management strategies used were more effective in controlling resting pain than movement-related pain. Since early ambulation and breastfeeding are important after cesarean delivery, dynamic pain assessment during movement should be included in routine postoperative care.

The study also found that opioids, non-steroidal anti-inflammatory drugs, and paracetamol were commonly used for postoperative pain management. Pethidine and

tramadol were frequently used opioids, while diclofenac sodium and paracetamol were commonly used as additional analgesics. The findings suggested that multimodal analgesia was more effective than single-drug therapy. Multimodal analgesia provides better pain relief because it combines different classes of drugs and acts through different pain pathways. It also helps reduce excessive opioid use and decreases opioid-related side effects.Side effects were also observed among some participants. The most common side effects were nausea, vomiting, drowsiness, pruritus, and urinary retention. However, the majority of participants did not report any major side effects. These findings show that postoperative analgesics were generally safe, but careful monitoring is still necessary, especially when opioids are used. Proper monitoring can help identify side effects early and improve maternal comfort.

Maternal satisfaction with postoperative pain management was generally good. Most participants were either satisfied or highly satisfied with the care they received. However, more than one-fourth of participants were not satisfied, which indicates that pain management was not optimal for all women. The possible reasons for dissatisfaction may include persistent pain, delayed administration of analgesics, inadequate pain assessment, side effects of medicines, or poor communication between healthcare providers and patients.The findings of this study also showed that effective postoperative pain management has a positive effect on maternal recovery. Women with adequate pain relief are more able to walk early, care for their newborns, breastfeed comfortably, and participate in daily activities. On the other hand, poorly controlled pain can delay recovery, increase anxiety, reduce mobility, and interfere with mother–infant bonding.

Overall, this study concluded that postoperative pain management following cesarean section in Dera Ismail Khan needs further improvement. Although commonly used analgesics provided pain relief in many patients, movement-related pain and dissatisfaction among some women indicate the need for better pain assessment and standardized protocols. The use of evidence-based multimodal analgesia, routine VAS scoring, timely administration of medicines, proper counseling, and continuous monitoring can improve postoperative outcomes.

Recommendations

Based on the findings of this study, the following recommendations are suggested:

1. Routine postoperative pain assessment should be performed in all cesarean section patients by using a standard pain assessment tool such as the Visual Analog Scale.
2. Pain should be assessed both at rest and during movement because movement-related pain affects early ambulation, breastfeeding, and maternal self-care.
3. Multimodal analgesia should be encouraged because it provides better pain control and reduces the need for excessive opioid use.
4. Opioids should be used carefully, and patients should be monitored for side effects such as nausea, vomiting, sedation, itching, and urinary retention.
5. Non-opioid analgesics such as NSAIDs and paracetamol should be used as part of a balanced pain management plan where not contraindicated.
6. Healthcare staff should provide proper counseling to mothers regarding postoperative pain, medication timing, movement, breastfeeding position, and expected recovery.
7. Hospitals should develop standardized postoperative pain management protocols for cesarean section patients.
8. Nurses, anesthesia technologists, anesthesiologists, and obstetric staff should be trained in regular pain assessment and documentation.
9. Rescue analgesia should be available for patients who experience moderate or severe pain despite routine medication.
10. Further research should be conducted with larger sample sizes and in multiple hospitals to better evaluate postoperative pain management practices in Dera Ismail Khan and other regions of Pakistan.

Limitations of the Study

This study had some limitations. First, the study was conducted in selected hospitals of Dera Ismail Khan, so the findings may not represent all hospitals of Pakistan. Second, convenience sampling was used, which may limit generalizability. Third, pain is a subjective experience and may vary according to individual pain threshold, emotional state, cultural factors, and previous surgical experience. Fourth, the study assessed

postoperative pain during a limited period and did not include long-term follow-up for chronic pain or delayed complications.

6.4 Final Conclusion

Postoperative pain following cesarean section remains an important clinical concern in Dera Ismail Khan. The study showed that most women experienced mild to moderate pain, but pain increased during movement. Opioids, NSAIDs, and paracetamol were commonly used, while multimodal analgesia appeared to provide better pain control. Although most participants were satisfied with postoperative pain management, a considerable proportion remained unsatisfied, showing that improvement is still needed. Standardized pain assessment, multimodal analgesia, timely medication, patient counseling, and proper monitoring can significantly improve maternal recovery, satisfaction, breastfeeding, and overall quality of postoperative care.

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