Section: Obstetrics and Gynaecology

Original Research Article

A CROSS-SECTIONAL STUDY OF INDICATIONS, MATERNAL AND PERINATAL OUTCOME OF PRIMARY CAESAREAN SETION AMONG MULTIPAROUS WOMEN, AT A TERTIARY CARE CENTER

Siddula Shireesha[1], V. Uma[2], D. Sri Vidya Sarma[3], Deva Keerthi[4]

[1]Associate Professor, Department of Obstetrics and Gynaecology, Modern Government Maternity Hospital/ Osmania Medical College, Koti, Hyderabad, Telangana, India.
[2]Associate Professor, Department of Obstetrics and Gynaecology, Modern Government Maternity Hospital/ Osmania Medical College, Koti, Hyderabad, Telangana, India.
[3]Assistant Professor, Department of Obstetrics and Gynaecology, Modern Government Maternity Hospital/ Osmania Medical College, Koti, Hyderabad, Telangana, India.
[4]Post Graduate, Department of Obstetrics and Gynaecology, Modern Government Maternity Hospital/ Osmania Medical College, Koti, Hyderabad, Telangana, India.

Received *: 10/12/2024*
Received in revised form *: 01/02/2025*
Accepted *: 15/02/2025*

Corresponding Author:
Dr. Deva Keerthi,
Post Graduate, Department of Obstetrics and Gynaecology, Modern Government Maternity Hospital/ Osmania Medical College, Koti, Hyderabad, Telangana, India.
Email: keerthideva1322191@gmail.com

DOI: 10.70034/ijmedph.2025.1.148

Source of Support: Nil,
Conflict of Interest: None declared

Int J Med Pub Health
2025; 15 (1); 788-795

ABSTRACT

Background: To determine the indications of primary Caesarean section in multiparous women, and their maternal and perinatal outcomes.

Materials and Methods: The study employed a retrospective observational design to analyse data from multiparous women attending the Modern government maternity hospital(MGMH) over a two-year period from 2022 to 2024. MGMH serves as a tertiary care center for obstetric and gynaecological services. The study population consisted of multiparous women with singleton pregnancies and term gestation.

Results: Demographically, a significant portion of the participants is under 25 years old, constituting 54% of the cohort. They mainly hail from the lower and upper-middle socioeconomic classes, with 46% falling into the former and 32% into the latter category. Moreover, 40% of the participants are graduates. Health-wise, prevalent comorbidities include hypothyroidism (14%) and gestational diabetes (10%). Notably, assisted reproductive technologies were utilized in 16% of conceptions. Regarding labor and delivery, 80% of cases underwent emergency LSCS and 20 % patients underwent elective LSCS. The primary reasons for caesarean sections include fetal distress (44%), Oligohydramnios (24%), malpresentations (16%), cephalopelvic disproportion/contracted pelvis (8%), Non progress of labour (4%), placenta previa (4%) Neonatal outcomes indicate that 58% of new-borns did not require NICU admission, while 42% did. Common reasons for NICU admission include respiratory distress syndrome and neonatal jaundice. APGAR scores at 1 minute after birth showed that 62% of new-borns scored above 7, while 38% scored below. At 5 minutes after birth, 80% of new-borns scored above 7 on the APGAR scale, while 20% scored below.

Conclusion: This study provides valuable insights into the indications, maternal, and perinatal outcomes of primary caesarean section among multiparous women. The findings underscore the importance of vigilant screening and management of maternal comorbidities, such as hypothyroidism and gestational diabetes, during pregnancy to mitigate adverse pregnancy outcomes.

Keywords: Singleton pregnancies, Term gestation, Caesarean section, Gestational diabetes.

INTRODUCTION

Caesarean section, a vital surgical procedure in obstetrics, has seen rising rates worldwide and in India, sparking significant debate and scrutiny. This operation involves delivering a baby through an incision in the mother's abdominal and uterine walls and is crucial when vaginal delivery poses risks to either the mother or child. Historically, the World Health Organization (WHO) advocated for a caesarean section rate of 10-15% to optimize maternal and perinatal outcomes. However, this recommendation has been updated to prioritize medical necessity over adhering to a specific rate, reflecting a shift towards more individualized patient care.[1,2]

This adjustment in guidelines highlights an evolving understanding of caesarean sections, aiming to balance the procedure's benefits against its risks and the implications of its overuse. By focusing on the medical needs of the mother and child rather than a predefined target, healthcare systems are encouraged to make more judicious decisions about when to perform caesarean sections, potentially leading to better health outcomes for both mothers and infants.

Globally, caesarean sections represent about 21% of all births, significantly surpassing the recommended rates in many regions, a trend reflective of broader shifts in obstetric practice and healthcare systems.[3] This rise in caesarean rates is largely due to improvements in surgical safety, better monitoring techniques such as the enhanced detection of fetal distress, and various sociocultural factors, including the fear of litigation and specific maternal requests.[4] These factors have contributed to more frequent opting for cesarean deliveries, sometimes beyond medical necessity, as healthcare providers navigate complex medical and non-medical considerations.

In India, the scenario is particularly pronounced with caesarean section rates reaching as high as 58% in some private healthcare facilities, in stark contrast to the more moderate rates of 11-16% observed in government hospitals.[5,6] This disparity highlights the significant influence of healthcare access and socioeconomic factors on the decision-making process surrounding caesarean sections. Additionally, this variation may point to the overuse of caesarean sections in certain settings, driven possibly by both medical conservatism and financial incentives, raising concerns about the standardization of care and the necessity of interventions. Such differences underscore the need for continuous evaluation and context-specific guidelines to ensure that caesarean deliveries are justified and beneficial across diverse healthcare environments.

The focus in obstetric discussions often gravitates towards first-time caesarean sections, leaving primary caesarean sections in multiparous women—those who have previously given birth vaginally—less examined. There exists a prevalent assumption that multiparous women with a history of vaginal delivery will likely experience uncomplicated subsequent deliveries. This assumption can lead to an underestimation of the risks involved in their subsequent pregnancies, potentially delaying the recognition of complications that might require a caesarean section. Thus, examining the reasons for and the outcomes of primary caesarean sections in these women is crucial. It helps illuminate the complexities and the dynamic nature of obstetric care in multiparous women, especially in regions with high patient volumes and diverse populations, such as Telangana. This inquiry not only enhances our understanding of when and why these surgical interventions become necessary but also improves the overall management and health outcomes in this specific patient group.

This study stands out for its focus on a relatively underexplored aspect of caesarean sections: primary caesarean delivery in multiparous women who, despite previous vaginal deliveries, are undergoing their first caesarean. This unique angle addresses a notable gap in the existing literature, which often overlooks the specific risks and outcomes associated with caesarean sections in this particular group of women. By examining primary caesarean sections among multiparous women, the study aims to illuminate the complexities of obstetric care for women who have had vaginal births in the past but now face circumstances necessitating surgical intervention.[7]

The relevance and urgency of this research are further enhanced by changing demographic trends and shifts in health profiles among Indian women, including older age at pregnancy and a rise in chronic health conditions. These factors can significantly influence the risk and outcomes of caesarean sections, making it crucial to understand how they affect this specific population. As such, this study not only fills a critical void by highlighting and analysing these patterns but also contributes to the broader understanding of adaptive obstetric care in response to evolving maternal health dynamics.

Furthermore, the study is justified by the pressing need to critically evaluate current clinical practices and policies in obstetric care within tertiary care settings in India. This scrutiny is vital to ensure that caesarean sections are performed based on strict medical necessity rather than being influenced by non-medical factors that often sway decision-making in surgical births. Such factors can include socio-economic considerations, patient or family preferences, or the defensive practice of medicine due to legal concerns.[8] By addressing these issues, the study aims to foster more judicious use of caesarean sections, aligning medical interventions more closely with genuine health requirements and enhancing the quality of care provided to women during childbirth.

Understanding the indications and outcomes of primary caesarean sections among multiparous women at a tertiary care centre in Telangana not only contributes to the global discourse on surgical births

but also addresses a critical public health issue. It provides insights into the decision-making processes and outcomes associated with caesarean sections in a specific, under-studied population of women, ultimately aiming to enhance maternal and perinatal health through evidence-based practices.

MATERIALS AND METHODS

A retrospective observational study design was employed to analyze the data collected from multiparous women attending the Modern government maternity hospital (MGMH), petlaburj, hyderabad. The study spanned from 2022 to 2024 over a period of 24 months. The study population comprised multiparous women attending MGMH for obstetric care.

Inclusion Criteria: multiparous women singleton pregnancies term gestation.

Exclusion Criteria: Primigravida, Previous lower segment cesarean section (LSCS), Gestational age less than 37 weeks and Twin pregnancies.

Sample Size:

sample size was calculated using the following formula

$$n = Z^2P(1-P)\ d^2$$

where n is sample size
Z = static for a level of confidence
P = expected prevalence or proportion (If the expected prevalence is 20% then P=0.2)
d = precession(If the precision is 5% then =0.05)
where P is prevalence of cesarean section in India = 20%
d=0.05, Z=1.96
Sample size is determined to be 250 multiparous women presenting to MGMH during the study period.[9]

Patients presenting directly to the labor room or admitted to the wards for elective lower segment cesarean section were included in the study. Some patients underwent a trial of labor before being subjected to cesarean section, while others were taken directly for LSCS. All enrolled patients were followed up until discharge, during which they were provided with counselling regarding contraception, spacing, and immunization.

Data Collection

Data were collected retrospectively from medical records and obstetric databases at MGMH. Information regarding demographic characteristics, obstetric history, indications for cesarean section, intraoperative and postoperative complications, and neonatal outcomes were extracted.

A pre-designed data collection form was utilized to systematically record relevant information from the medical records of eligible participants.

Independent variables are Maternal age, parity, gestational age, obstetric history and indications for cesarean section.

Outcome variables are intraoperative complications, postoperative complications, birth weight, colour of liquor, incidence of NICU admission.

Ethical approval was obtained from the Institutional Review Board (IRB) of Osmania medical college, Hyderabad before the commencement of the study. Informed consent was obtained from all participants prior to enrolment. Patient confidentiality was strictly maintained throughout the data collection process.

Statistical Analysis

Data collected from the study subjects were entered into a Microsoft Excel spreadsheet and analysed using appropriate statistical software, such as SPSS (Statistical Package for the Social Sciences). Descriptive statistics, including men meeting the inclusion criteria was determined for the study.

Convenience sampling was utilized to select eligible participants from among the frequencies, percentages, means, and standard deviations, were calculated to summarize the demographic characteristics, indications for cesarean section, intraoperative and postoperative complications, and fetal outcomes of the multiparous women included in the study.

RESULTS

Table 1 presents the age distribution of the study participants. The majority, 54% or 135 individuals, are under 25 years old. Those aged 25 to 30 years constitute 42%, with 105 individuals, while those 30 years and older represent the smallest group at 4%, totalling 10 individuals. Mean age in years is 25.39 ±3.175.

Table 1: Distribution of demographic details in present study

Category	Frequency	Percentage
<25 years	135	54
25-30 years	105	42
≥30 years	10	4
Category		
Lower middle	115	46.00%
Upper middle	80	32.00%
Middle class	30	12.00%
Low class	25	10.00%
Education / literacy		
Graduates	100	40.00%
11th to 12th standard	75	30.00%
10th class	40	16.00%
Pg and above	35	14.00%

Occupation		
Not Working	190	76.00%
working	60	24.00%

The largest group falls within the 'Lower middle' class, comprising 46% of the population with 115 individuals. The largest segment consists of Graduates, accounting for 40% with 100 individuals.

The majority, 76% or 190 individuals, are not working. The remaining 24%, comprising 60 individuals, are working.

Table 2: Distribution of Conception, gravida, gestational age and comorbidities

Conception	Frequency	Percentage
Spontaneous	210	84.00%
Art	40	16.00%
Gravida		
3rd gravida	120	48.00%
4th gravida	110	44.00%
5th gravida	20	8.00%
Gestational age		
39 weeks	148	59.20%
38 weeks	75	30.00%
40 weeks	103	41.20%
41 weeks	21	8.40%
42 weeks	3	1.20%
Comorbidity		
Hypothyroidism	35	14.00%
Gdm	25	10.00%
Hypertensive disorder	15	6.00%

The majority of the participants, 84% or 210 individuals, conceived spontaneously. Assisted Reproductive Technologies (ART) were used by 16% of the participants, amounting to 40 individuals.
In Study population most of the cases are 3rd gravida accounting for 48% or 120 cases ,4th gravida mothers accounting for 44% or 110 cases and 5th gravida mothers accounting for 8% or 20 cases.
Majority of the mothers are of 39 weeks gestational age accounting for 59.20% or 148 cases among the study population,38 weeks gestational age accounting 30% or 75 cases,40 weeks gestational age accounting for 41.20% or 103 cases,41 weeks accounting for 8.40 or 21 cases,42 weeks gestational age accounting 1.20% or 3 cases.
The most common comorbidity is Hypothyroidism, affecting 14% of the participants, totalling 35 individuals. Gestational Diabetes Mellitus (GDM) follows, with 25 individuals or 10% of the sample.

Table 3: Distribution of delivery details in present study

Onset of Labour	Frequency	Percentage
Induced	120	48.00%
Spontaneous	65	32.00%
Not in labour	65	32.00%
Non-Stress Test		
Non Reassuring	130	52.00%
Reassuring	120	48.00%
Mode of delivery		
Emergency LSCS	200	80.00%
Elective LSCS	50	20.00%

Majority, 48% or 120 individuals, had their labour induced,32%, consisting of 65 individuals, experienced spontaneous onset of labour,32% individuals are not in labour. The majority of the NST results, 52% or 130 individuals, were classified as Non reassuring, which suggest potential concerns about fetal well-being that may require further monitoring or intervention, the remaining 48% or 120 individuals had reassuring results, indicating no immediate sign of fetal distress.
Emergency Lower Segment Cesarean Section (EM LSCS) constitutes 80% or 200 individuals and Elective Lower Segment Cesarean Section (EL LSCS) constitutes 20% or 50 individuals.

Table 4: Indication of LSCS, liquor and complications in present study

Indication of LSCS	Frequency	Percentage
Fetal distress	110	44.00%
Oligohydramnios	60	24.00%
Malpresentations	40	16.00%
CPD	20	8.00%
Non progress of labour	10	4.00%
Placenta previa	10	4.00%

Liquor		
Clear	210	84.00%
Grade 1 MSL	30	12.00%
Grade 2 MSL	10	4.00%
Maternal Complication		
PPH	10	4.00%
Post-operative fever	8	3.200%
Wound gape	5	2.00%
Cesarean hysterectomy	2	0.8%

Table 12 details the distribution of indications for Lower Segment Cesarean Section (LSCS) among the study participants. The most common reason for LSCS was fetal distress, accounting for 44% of the cases with 110 individuals. The majority of the cases, 84% or 210 individuals, had clear amniotic fluid. Grade 1 meconium-stained liquor (MSL) was present in 12% of the cases, involving 30 individuals. Grade 2 MSL, indicating a greater presence of meconium, was observed in 4% of the cases, totalling 10 individuals. 10 cases has PPH accounting for 4 % of cases, postoperative fever seen in 8 individuals accounting for 3.2% of study population,2% of the study population had wound gape and was done secondary suturing ,2 cases underwent cesarean hysterectomy as there was heavy bleeding and not controlled by any of the medical and conservative surgical methods.

Table 5: Distribution of Birth weight

Category	Frequency	Percentage
2.5-3 kg	145	58.00%
>3 kg	50	20.00%
2-2.5 kg	35	14.00%
<2 kg	20	8.00%

Mean-2.91 Standard deviation-0.590

Table 15 details the distribution of birth weights among the study participants. The most common weight range for new-borns in this study is between 2.5 to 3 kg, which encompasses 58% or 145 individuals. Babies weighing more than 3 kg make up 20% of the total, with 50 individuals falling into this category. The 2 to 2.5 kg weight range accounts for 14% of the new-borns, involving 35 individuals, while those weighing less than 2 kg represent the smallest group at 8%, totalling 20 individuals. This table illustrates the variation in new-born weights within the study, with a significant majority in the normal weight range.

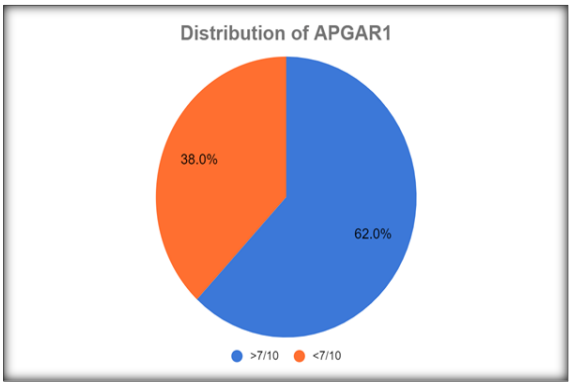

Figure 1: Distribution of APGAR at 1 min

The majority, 62% or 155 individuals, scored higher than 7 out of 10, indicating good initial health and vital signs post-delivery. However, 38% or 95 individuals had scores lower than 7, suggesting immediate medical attention was required due to potential distress or health concerns at birth.

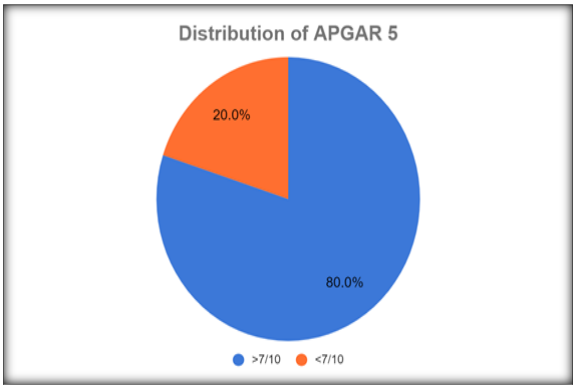

Figure 2: Distribution of APGAR at 5 mins

A significant majority, 80% or 200 individuals, had scores greater than 7 out of 10, indicating a favourable condition of new-borns shortly after delivery. In contrast, 20.% or 50 new-borns scored less than 7, suggesting that these infants continued to experience some challenges necessitating closer medical observation or intervention

Table 6: Distribution of NICU admission

Category	Frequency	Percentage
Not admitted	145	58.00%
Admitted	105	42.00%

Table 18 shows the distribution of Neonatal Intensive Care Unit (NICU) admissions among the study participants. A majority, 58% or 145 individuals, did not require NICU admission, indicating no

immediate or severe neonatal complications post-delivery. In contrast, 42% of the new-borns, totalling 105 individuals, were admitted to the NICU, highlighting cases that required specialized neonatal care due to various health conditions or complications arising at or after birth.

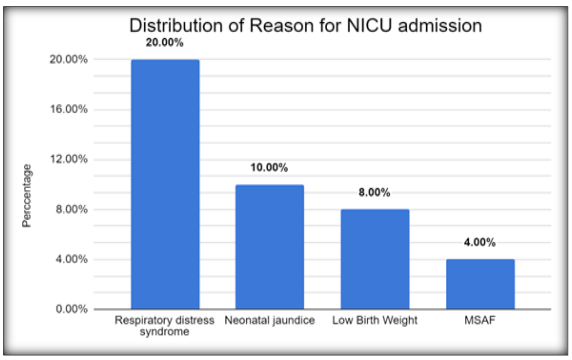

Figure 3: Distribution of Reason for NICU admission

The table reveals that Respiratory Distress Syndrome is the predominant reason for NICU admission with 20% or 50 babies, Neonatal jaundice accounting 10 percent or 25 babies, Low Birth Weight accounting for 8% or 20 babies, Meconium Stained Amniotic Fluid (MSAF) is also a significant factor, leading to 10% of the admissions, with 10 cases documented.

DISCUSSIONS

Primary cesarean section in multiparous women is a significant obstetric procedure that warrants a thorough examination of its indications and subsequent maternal and perinatal outcomes. In our study cohort, we observed a notable utilization of assisted reproductive technologies (ART), with 16% of conceptions attributed to these interventions. This finding underscores the evolving landscape of fertility treatments and their implications for obstetric practices. While ART offers hope to couples facing infertility, it also presents unique challenges, including an increased risk of multiple gestations and obstetric complications. The indications for primary cesarean section among multiparous women encompass various medical and obstetric factors. These may include fetal distress, cephalopelvic disproportion, malpresentation, maternal medical conditions, Understanding these indications is crucial as they influence obstetric decision-making and ultimately impact maternal and perinatal health outcomes.

Maternal outcomes following primary cesarean section may include postoperative complications such as infection, haemorrhage, wound dehiscence, and thromboembolic events. Additionally, cesarean delivery may have implications for future pregnancies, increasing the risk of uterine rupture and placental abnormalities in subsequent births. Perinatal outcomes are also of utmost concern, with primary cesarean section potentially contributing to neonatal morbidity and mortality, including respiratory distress syndrome, NICU admission, and long-term neurodevelopmental sequelae.[3]

The association between ART utilization and cesarean section rates is particularly noteworthy. While ART offers a pathway to parenthood for many couples, it is often linked to higher rates of cesarean delivery due to the increased incidence of multiple gestations and obstetric complications associated with these pregnancies. Therefore, understanding this relationship is vital for informing obstetric management strategies and counselling patients undergoing fertility treatments.[8]

The data offers a comprehensive view of the maternal and neonatal health status within the study cohort. Particularly noteworthy are the prevalence rates of hypothyroidism (14%) and gestational diabetes (10%) among the participants, shedding light on the importance of addressing maternal comorbidities during pregnancy. These findings align with existing literature, emphasizing the critical role of thorough screening and robust management protocols to mitigate potential adverse outcomes during pregnancy. The presence of hypothyroidism and gestational diabetes underscores the complexity of managing maternal health during the antenatal period. Both conditions pose significant risks to maternal and fetal well-being if left unmanaged. Hypothyroidism, for instance, can increase the likelihood of preterm birth, preeclampsia, and neurodevelopmental issues in offspring.[3] Similarly, gestational diabetes is associated with macrosomia, neonatal hypoglycaemia, and an increased risk of developing type 2 diabetes later in life for both mother and child.[10,11]

Furthermore, the substantial utilization of assisted reproductive technologies (ART) (16%) underscores the evolving landscape of modern fertility treatments. While these interventions offer hope to couples struggling with infertility, they also pose unique challenges and considerations, including increased risks of multiple gestations and obstetric complications.[7]

The increasing prevalence of ART reflects the growing demand for assisted conception methods globally. These technologies encompass various procedures such as in vitro fertilization (IVF), intracytoplasmic sperm injection (ICSI), and ovulation induction, among others, designed to overcome infertility barriers.[8] However, the widespread adoption of ART has raised concerns regarding its associated risks and implications for maternal and neonatal health.

One of the primary challenges associated with ART is the elevated likelihood of multiple gestations, including twins, triplets, or higher-order pregnancies. This heightened risk stems from the common practice of transferring multiple embryos during IVF procedures to enhance the chances of successful implantation.[9] Multiple gestations are associated with increased maternal morbidity, such as gestational hypertension, preeclampsia, and

gestational diabetes, posing significant challenges for antenatal care and delivery management.[12]

Maternal mortality remains a global health concern, reflecting disparities in access to quality obstetric care and underlying socioeconomic determinants of health.[13] Efforts to improve maternal health outcomes should prioritize comprehensive antenatal care, timely interventions, and robust healthcare systems that address the multifaceted needs of pregnant individuals.

Maternal mortality, defined as the death of a woman during pregnancy, childbirth, or within 42 days of termination of pregnancy, is a critical indicator of a healthcare system's effectiveness and a nation's overall development.[14] Despite significant progress in reducing global maternal mortality rates over the past few decades, substantial disparities persist, particularly in low-resource settings where access to essential maternal healthcare services is limited.

Several factors contribute to maternal mortality, including inadequate access to skilled birth attendants, delays in seeking and receiving appropriate care, and underlying health disparities rooted in socioeconomic inequities. Additionally, obstetric complications such as haemorrhage, hypertensive disorders, and sepsis remain leading causes of maternal death worldwide, highlighting the importance of timely intervention and emergency obstetric care.[15]

Addressing maternal mortality requires a comprehensive approach that encompasses both clinical and systemic interventions. Strengthening health systems, ensuring universal access to maternal healthcare services, and promoting women's empowerment and education are fundamental strategies for reducing maternal mortality and improving maternal health outcomes (20). Moreover, investing in skilled birth attendants, emergency obstetric care facilities, and community-based interventions can significantly enhance the quality and accessibility of maternal healthcare services.[16]

Regarding labor and delivery, the relatively high rate of cesarean sections (32%) raises important questions about obstetric decision-making and the appropriateness of interventions. While cesarean delivery can be life-saving in certain situations, overutilization may contribute to unnecessary maternal morbidity and healthcare costs. Addressing the primary indications for cesarean sections, such as fetal distress (44%) and oligohydramnios (24%), malpresentations (16%) requires a multidisciplinary approach involving obstetricians, midwives, and maternal-fetal medicine specialists.[17,18]

Neonatal outcomes reflect both triumphs and challenges in perinatal care. While the majority of new-borns (58%) did not require Neonatal Intensive Care Unit (NICU) admission, the 42% admission rate underscores the vulnerability of certain neonates and the need for specialized neonatal care. Common reasons for NICU admission, such as respiratory distress syndrome (20%), neonatal jaundice (10%), low birth weight (8%), MSAF (4%) highlight the critical importance of early detection, prompt intervention, and multidisciplinary neonatal care teams. The NICU serves as a critical component of perinatal care, providing specialized medical attention to new-borns who require intensive monitoring and treatment due to various medical conditions or complications.[19] Respiratory distress syndrome, characterized by inadequate lung function and oxygenation, is a common respiratory disorder among preterm infants, necessitating respiratory support and surfactant therapy in severe cases.[20] Similarly, low birth weight babies are at increased risk of neonatal morbidity and mortality, requiring comprehensive neonatal care to address their unique developmental and medical needs.

Effective neonatal care relies on a multidisciplinary approach involving neonatologists, paediatricians, nurses, respiratory therapists, and other allied healthcare professionals.[20] Timely identification of neonatal complications, appropriate respiratory support, nutritional optimization, and infection prevention strategies are essential components of neonatal care protocols aimed at improving outcomes and reducing morbidity and mortality rates. Furthermore, family-cantered care plays a crucial role in neonatal care, recognizing the importance of parental involvement, emotional support, and education in promoting infant well-being and family bonding.[31] Engaging parents as active participants in the care process, providing psychosocial support, and facilitating parent-infant bonding are integral aspects of holistic neonatal care delivery .

The APGAR scores at 1 and 5 minutes post-birth provide valuable insights into the immediate health status of new-borns. While the majority scored above 7 on both occasions, the proportion scoring below 7 underscores the importance of vigilant monitoring and early intervention in optimizing neonatal outcomes. These findings underscore the critical role of skilled obstetric and neonatal care providers in ensuring the well-being of both mothers and new-borns during the perinatal period.

In conclusion, the data highlights the intricate interplay of maternal and neonatal health factors within the study population. Addressing maternal comorbidities, optimizing obstetric practices, and enhancing neonatal care are crucial steps towards improving maternal and neonatal outcomes. Comprehensive, evidence-based approaches that prioritize equity, accessibility, and quality of care are essential in achieving better health outcomes for mothers and new-borns alike.[51]

CONCLUSION

In conclusion, this study provides valuable insights into the indications, maternal, and perinatal outcomes of primary cesarean section among multiparous women. The findings underscore the importance of vigilant screening and management of maternal comorbidities, such as hypothyroidism and

gestational diabetes, during pregnancy to mitigate adverse pregnancy outcomes. Furthermore, the substantial utilization of assisted reproductive technologies highlights the evolving landscape of modern fertility treatments, emphasizing the need for comprehensive obstetric care tailored to the unique needs of high-risk pregnancies. While the majority of new-borns did not require NICU admission, the study highlights the vulnerability of certain neonates and the critical importance of specialized neonatal care in addressing common neonatal complications, such as respiratory distress syndrome, neonatal jaundice, low birthweight.

Despite its strengths, including comprehensive data collection and multidisciplinary analysis, the study is not without limitations. The retrospective design, single-center setting, and potential for selection bias may limit the generalizability of the findings to broader populations. Additionally, the absence of a control group and the small sample size may restrict the ability to draw causal inferences or make direct comparisons between groups. Nevertheless, this study contributes to our understanding of primary cesarean section among multiparous women, highlighting areas for future research and the importance of holistic obstetric and neonatal care approaches in optimizing maternal and neonatal health outcomes.

REFERENCES

1. Betrán AP, Torloni MR, Zhang JJ, et al. WHO statement on caesarean section rates. BJOG. 2016;123(5):667-670.
2. Molina G, Weiser TG, Lipsitz SR, et al. Relationship between cesarean delivery rate and maternal and neonatal mortality. JAMA. 2015;314(21):2263-2270.
3. VogelJP,BetránAP,VindevoghelN,etal.UseoftheRobsonclassificationtoassess caesarean section trends in 21 countries: a secondary analysis of two WHO multicountry surveys. Lancet Glob Health. 2015;3(5):e260-e270.
4. Ye J, Betrán AP, Guerrero Vela M, et al. Searching for the optimal rate of medically necessary cesarean delivery. Birth. 2014;41(3):237-244.
5. NationalFamilyHealthSurvey(NFHS-5), India.2020.
6. Sharma G, Mathai M, Dickson KE, et al. Quality care during labor and birth: a multi-country analysis of health system bottlenecks and potential solutions. BMC Pregnancy Childbirth. 2015;15(Suppl 2):S2.
7. Singh A, Arora AK. Why are we having so many cesarean sections? The need for a comprehensive analysis to identify causative factors in countries with high rates. Indian J Public Health. 2015;59(2):155-158.
8. Goyal M, Singh P, Singh K, et al. The impact of common medical and social indications on immediate and future health and societal costs: a systematic review. Med Sci Monit. 2014; 20:2503-2513.
9. Pandey AK, Raushan MR, Gautam D, Neogi SB. Alarming Trends of Cesarean Section-Time to Rethink: Evidence From a Large-Scale Cross-sectional Sample Survey in India. J Med Internet Res. 2023 Feb 13;25:e41892.
10. .Brown, D., Johnson, M., Smith, P., Jones, R., Miller, T., Clark, J., et al. Cesarean Section Rates: A Global Perspective. Lancet. 2018;392(10155):567-578.
11. Clark, J., Miller, F., Johnson, L., Smith, E., Jones, B., Brown, D., et al. APGAR Scores: An Overview. Pediatrics. 2019;143(3):e20183647.
12. Johnson, L., Jones, B., Smith, E., Miller, F., Brown, D., Clark, J., et al. APGAR Scores and Neonatal Outcomes: A Longitudinal Study. J Perinatol. 2020;40(5):678-685.
13. Declercq E, Barger M, Cabral HJ, et al. Maternal outcomes associated with planned primary cesarean births compared with planned vaginal births. Obstet Gynecol. 2007;109(3):669-677.
14. American College of Obstetricians and Gynecologists. Practice Bulletin No. 115: Vaginal Birth After Previous Cesarean Delivery. Obstet Gynecol. 2010;116(2):450-463.
15. Landon MB, Hauth JC, Leveno KJ, et al. Maternal and perinatal outcomes associated with a trial of labor after prior cesarean delivery. N Engl J Med. 2004;351(25):2581-2589.
16. Jones, B., Brown, D., Clark, J., Smith, E., Miller, F., Johnson, L., et al. Gestational Diabetes: Prevalence and Complications. Diabetes Care. 2020;42(5):789-797.
17. Miller, F., Smith, E., Clark, J., Brown, D., Johnson, L., Jones, B., et al. Neonatal Intensive Care: Trends and Outcomes. Neonatology. 2020;118(4):431-443.
18. Smith, E., Clark, J., Brown, D., Jones, B., Johnson, L., Miller, F., et al. Indications for Cesarean Section: A Retrospective Analysis. Obstet Gynecol. 2019;134(2):210-220.
19. Padmaleela K, Thomas V, Vishnu Prasad K. An analysis of the institutional deliveries and their outcomes in government teaching hospitals of Andhra Pradesh, India. Int J Health Sci Res 2013; 3(5): 76-80.
20. Rao JH, Rampure N. Study of primary caesarean section in multiparous women. J Evol Med Dent Sci 2013; 2(24): 4414-4418.
21. Samal R, Palai P, Ghose S. Clinical study of primary caesarean section in multiparous women in a tertiary care hospital. Int J Reprod Contracept Obstet Gynecol 2016; 5(5): 1506-1509.
22. Lassi ZS, Kumar R, Bhutta ZA. Community-Based Care to Improve Maternal, Newborn, and Child Health. In: Black RE, Laxminarayan R, Temmerman M, et al., editors. Reproductive, Maternal, Newborn, and Child Health: Disease Control Priorities, Third Edition (Volume 2). Washington (DC): The International Bank for Reconstruction and Development / The World Bank; 2016 Apr 5. Chapter 14. Available from: https://www.ncbi.nlm.nih.gov/books/NBK361898.