

Primary Cesarean Section in Multiparous Women at a Tertiary Care Hospital

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Abstract

Introduction: Cesarean sections are life-saving procedures for both the mother and fetus subject to obstetric complications. The rapid rise in cesarean delivery rates remains a global problem. Due to multifactorial reasons for primary caesarean section among multiparous cohort, this study aims to find out the prevalence and the underlying indications of primary cesarean section in these women.

Materials and Methods: A descriptive cross-sectional study was conducted at a tertiary care hospital of Madhesh Province from April 2025 to July 2025. Ethical clearance was obtained from the Institutional Review Committee. All multiparous women, fulfilling the inclusion criteria, were enrolled in the study. Data was collected using a specifically designed proforma. Data entry was done in Microsoft EXCEL and simple descriptive analysis was performed.

Results: Out of 518 multiparous women, 99 (19.11%) underwent a primary cesarean section. Majority of women, 45 (45.45%) belong to 26-30 age-group and predominantly 79 (79.80%) were from rural areas. Most participants, 39 (39.39%) were of first and second parity. Emergency caesarean section was 91 (91.92%) which was much higher than elective ones. The most common indication for primary caesarean section was fetal distress 42 (42.43%), followed by Oligohydramnios 16 (16.16%) and Breech Presentation 8 (8.08%).

Conclusion: Previous vaginal deliveries offer no guarantee of subsequent ones. Multipara with a previous vaginal delivery may still require a caesarean section due to various indications. Most of the primary CS are emergency and fetal distress remains the most common indication.

Keywords: caesarean section; multipara; prevalence.

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Introduction

Cesarean Section (CS) is a surgical procedure used to deliver a fetus through an abdominal and a uterine incision, and is considered as one of the most widely performed surgical procedures in obstetrics worldwide. Primary caesarean section in multiparous women is the first caesarean section performed on a woman who has given birth vaginally at least once before.¹ The CS rate has increased over the past few years in both developed and developing countries.² While the World Health Organization (WHO) recommends maintaining cesarean section rates between 10% and 15% to ensure optimal health outcomes, data from 169 nations reveal a dramatic surge in these rates. The frequency of

these surgeries nearly doubled between 2000 and 2015, constituting more than one caesarean delivery in five live births.³ Cesarean section rates in Nepal quadrupled over ten years (2001 to 2011) and continue to surge without plateauing.^{4,5} National data from the Nepal Demographic and Health Survey (NDHS) in 2022 showed that one in five women in Nepal give birth through Cesarean section. The CS rate has increased over time, with 10.2% in 2016 and 18.2% in 2022.⁶

Despite a history of successful vaginal births, multipara may require a primary cesarean section to ensure maternal

and fetal safety. This has led to a rising incidence of primary CS within this group, triggered by various clinical indications. Multiparity is linked to a wide range of high-risk conditions. Key concerns include anemia, cephalopelvic disproportion,⁷ malpresentation, and multifetal pregnancy. There is also an increased risk of antepartum hemorrhage (commonly placenta previa and abruptio placentae), hypertensive disorders of pregnancy such as pre-eclampsia and eclampsia, uterine rupture, and postpartum hemorrhage. Additionally, these women are susceptible to long-term medical conditions such as diabetes and chronic hypertension.⁸ Besides the medical and obstetric reasons there are other factors such as ethical, socioeconomic and medicolegal factors leading to an increased rate of CS throughout the world.⁹ A significant number of unbooked pregnant women are residents of rural areas, frequently presenting for maternity care only when pregnancy or labor complications arise.¹⁰ Furthermore, most of the rural women believe that once a vaginal delivery is always a vaginal delivery and skip essential antenatal visits.^{7,10,11} Due to their misbeliefs, they often arrive at the hospital only when a life-threatening crisis demands an immediate emergency CS to save the lives of both mother and child. So, they are an important target to decrease the rate of cesarean section in an institute and country at large. Moreover, the rising worldwide CS rates are a major concern as they impose a greater financial burden and carry more health risks for mothers than vaginal delivery. Thus, this study aims to identify the prevalence and indications for primary cesarean section in multipara at Madhesh community.

Materials and Methods

A descriptive cross-sectional study was conducted in the Department of Obstetrics and Gynecology at the Madhesh Institute of Health Sciences, Janakpur, Dhanusha, over a period of three months, from April 2025 to July 2025. As per the institutional guidelines, the research proposal was submitted to and approved by the Institutional Review Committee (IRC). Formal approval was obtained under Ref. No: IRC/081/082-018, prior to data collection.

Study Population: All the multiparous women ≥ 28 weeks of gestational age, fulfilling the inclusion criteria.

Criteria for Sample Selection:

Inclusion Criteria: All the multiparous (para 1, 2, 3, 4) and grand multiparous women (para more than 4) who had delivered previously only vaginally, ≥ 28 weeks of gestational age, admitted in the antenatal ward for delivery, willing to participate in the study were included in the study.

Exclusion Criteria: All the primigravida and all the multipara having history of previous cesarean sections, history of myomectomy or hysterotomy, were excluded from the study.

A total of 518 pregnant women in labor were enrolled in the study using convenient sampling. Information of the

patients was collected in a pre-designed proforma about demographic profile, obstetrics history of significance, physical examination, mode of delivery, indications for cesarean section, fetal outcomes and maternal and neonatal complications if any, were evaluated. Informed consent was taken while enrolling the individual in the study.

The collected data were entered in Microsoft EXCEL. Simple descriptive analysis was performed and the results were presented in appropriate tables and figures with percentage and frequencies.

Results

A total of 518 multigravida women delivered their babies during the study period. Among them, 99 were primary CS deliveries with remainder being vaginal deliveries 419 (80.89%). Prevalence of Primary CS in multiparous women in our study was found to be 19.11%. Out of these 99 patients, majority 45 (45.45%) were in the age group of 26-30 years followed by 20-25 years 43 (43.43%), 31-35 years 9 (9.09 %) and more than 35 years 2 (2.02%) as shown in Table 1. While comparing the residence, primary cesarean deliveries were higher among the rural population 79 (79.80%) as depicted by a pie-chart (fig 1). Most women 39 (39.39%) were of first and second parity (Table 2).

Out of 99 primary CS, Emergency caesarean section was performed in 91(91.92%) women and a very few cases 8 (8.08%) underwent elective caesarean section, as depicted by a pie-chart (fig 2). As shown in Table 3, the most common indication for primary caesarean section in multiparous women in our study was fetal distress 42 (42.43%), followed by Oligohydramnios 16 (16.16%), Breech Presentation 8(8.08%) and Non progress of labour 7 (7.07%). Among the antepartum hemorrhage, placenta previa 3 (3.03%) was more common than abruptio placenta 1 (1.01%).

Of 99 women undergoing primary CS, two women gave birth to twin babies. In the study there were total 101 births out of which 99 (98.02%) were live births and 2 (1.98%) were stillbirths as shown in graph (fig 3). The cause of stillbirth in our study was abruptio placenta and fetal distress (Table 4). Birth weight of the newborns was recorded as shown in Table 5, majority of newborns 79 (78.22%) had a normal birth weight, weighing between 2500-4000 grams and only 2 (1.98%) were classified as Very Low Birth Weight (VLBW) newborns.

Table 1: Distribution of multipara undergoing primary caesarean according to their Age.

Age in years	Number (n = 99)	Percentage (n%)
20-25	43	43.43
26-30	45	45.45
31-35	9	9.09
>35	2	2.02

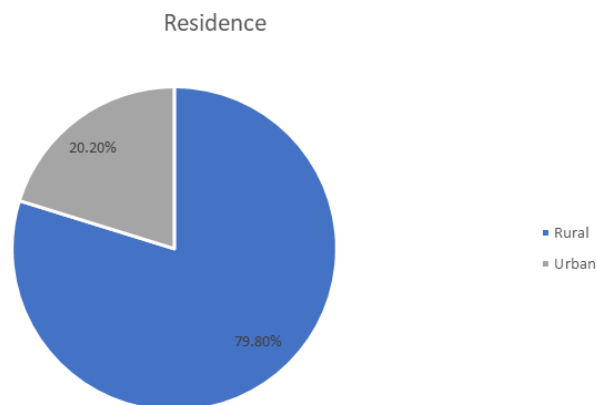


Figure 1: Distribution of multipara undergoing primary caesarean according to their Residence.

Table 2: Distribution of multipara undergoing primary caesarean according to Parity.

Parity	Number (n = 99)	Percentage (n%)
1	39	39.39
2	39	39.39
3	15	15.15
4	5	5.05
>4	1	1.01

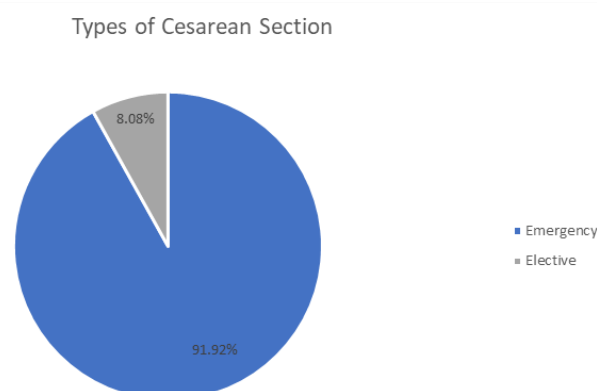


Figure 2: Type of cesarean section-Elective n= 8 (8.08%) and Emergency n= 91 (91.92%).

Table 3: Indications of Primary caesarean section in multiparous women.

Indication of Cesarean section	Number (n = 99)	Percentage (n%)
Fetal distress	42	42.43
Oligohydramnios	16	16.16
Breech Presentation	8	8.08
Non progress of labour	7	7.07
Transverse Lie	3	3.03
Twin Pregnancy	2	2.02
Cephalopelvic disproportion	3	3.03

Arrest of Descent	2	2.02
Placenta Previa	3	3.03
Abruptio Placenta	1	1.01
Pre-eclampsia	3	3.03
Eclampsia	1	1.01
Induction Failure	4	4.04
CDMR	1	1.01
Face Presentation	1	1.01
Compound Presentation	1	1.01
BOH with GDM	1	1.01

^a caesarean delivery on maternal request, ^b Bad Obstetric History, ^c Gestational Diabetes Mellitus

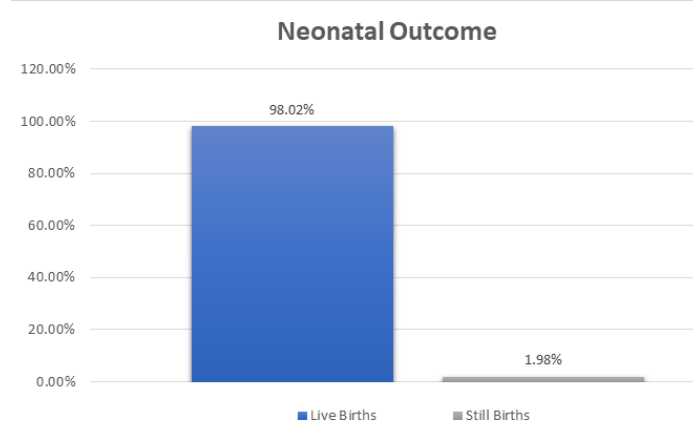


Figure 3: Neonatal Outcome following primary cesarean section in multiparas (n= 101).

Table 4: Causes for still birth.

Causes	Number (n = 2)	Percentage (n%)
Abruptio Placenta	1	50
Fetal Distress	1	50

Table 5: Birth Weight distributions of Newborns born to Multiparas with Primary CS.

Birth weight (in grams)	Number (n = 101)	Percentage (n%)
Very Low Birth Weight (VLBW) <1500 grams (1000-1499 grams)	2	1.98
Low Birth Weight (LBW) <2500 grams (1500-2499 grams)	17	16.83
Normal Birth Weight 2500-4000 grams	79	78.22
Macrosomia (High Birth Weight) >4000 grams	3	2.97

Discussion

Previous vaginal deliveries offer no assurance of subsequent ones. This has been proved by many other studies. Prevalence of Primary CS in multiparous women in our study was found

to be 19.11%. Our study identified a higher prevalence than the 13.38% reported by Shah RK et al.¹² in their research at a tertiary care center in Madhesh Province of Nepal. Some studies show the primary caesarean rate among multiparity to be lower than our study 14.7%,⁷ 11.38%,¹³ and 12.61%.¹¹ While a study by Desai E et al.¹⁴ reported 29.05% of primary caesarean sections in multipara, which is much higher than the rate found in our study. This higher prevalence likely reflects the concentration of high-risk cases at our tertiary center, alongside the availability of early diagnostic tools for fetal distress and a preference for smaller families. The maximum number of multiparas (45.45%) were in the age group between 26-30 which was supported by Sharmila G et al.¹⁵ and Sethi P et al.¹⁶ in their studies. While comparing the residence, primary caesarean deliveries were higher among the rural population (79.80%) in our study which is similar to the study done by Abdelbaset et al.¹⁷

Regarding parity distribution, the majority of multiparous women in our study were of parity 1 and 2, which is consistent with the results reported by Singh SM et al.,⁷ Ramavath RB et al.,¹⁸ and Rajput N et al.¹¹ This reflects a subsequent declining trend of grand multiparity over recent years. Our study's distribution of emergency 91 (91.92%) and elective 8 (8.08%) cesarean sections highlight a high rate of emergency cases, a finding consistent with the research conducted by Singh SM et al.⁷

The most common indication for primary caesarean section in our study was fetal distress (42.43%), followed by

oligohydramnios (16.16%) and then breech presentation (8.08%). These results are consistent with the study by Ramavath RB et al.,¹⁸ where the most common indication was also fetal distress (19%), followed by malpresentations (14%) and oligohydramnios (14%). Fetal distress emerged as the leading indication for primary cesarean section (CS) in multigravidas, aligning with established clinical literature.^{7,12,14,19}

The majority of the babies 78.22% weighed in the group of 2.5-4 kg which is similar to other studies.^{11,18} The stillbirth rate was 1.98% in our study. The primary causes identified were abruptio placentae and fetal distress, which is consistent with other studies.^{12,20} Notably, no maternal mortality occurred during the study period.

Conclusion

We concluded that previous vaginal deliveries offer no guarantee of subsequent ones. Multipara with a previous vaginal delivery may still require a caesarean section due to various indications. Most of the primary CS are emergency and fetal distress remains the most common indication. Hence to improve maternal and fetal outcomes, clinical efforts should prioritize comprehensive antenatal care, early detection of high-risk pregnancies, and proactive patient counseling to ensure timely interventions.

Conflict of Interest: None

Integrity and compliance statements

Ethics approval

Approved by the Institutional Review Committee (IRC) of Madhesh Institute of Health Sciences, Janakpurdham (Ref. No: MIHS-IRC/081/082-018) on 21st April 2025.

Informed consent

Written informed consent was obtained from all participants for data collection and publication of anonymized data.

Source of Funding

No external funding was received for this work.

Conflict of Interest

The authors declare no competing interests.

Data availability

No datasets were generated or analyzed for this study.

Provenance and Peer Review

Not commissioned; externally peer reviewed. Double-blind peer review.

AI/LLM disclosure

No AI-assisted tools were used in this manuscript.

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Author Contributions (CRediT)

Chandra Rekha Issar: Design, concept, data collection, literature search, data analysis, manuscript preparation, manuscript review and editing

Raj Deb Mahato: Design, concept, data collection, literature search, manuscript review and editing

Dhirendra Kumar Sah: Design, concept, data collection, literature search, manuscript review and editing

Ruby Singh: Concept, literature search, manuscript review

Bios

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References

1. American College of Obstetricians and Gynecologists. Obstetric care consensus no. 1: safe prevention of the primary cesarean delivery. *Obstet Gynecol.* 2014;123(3):693-711. DOI: [10.1097/01.AOG.0000444441.04111.1d](https://doi.org/10.1097/01.AOG.0000444441.04111.1d) PMID: 24553167
2. Vogel JP, Betran AP, Vindevoghel N, Souza JP, Torloni MR, Zhang J, et al. Use of the Robson classification to assess caesarean section trends in 21 countries: a secondary analysis of two WHO Multi-Country Surveys. *Lancet Glob Health.* 2015;3(5):e260-e270. DOI: [10.1016/S2214-109X\(15\)70094-X](https://doi.org/10.1016/S2214-109X(15)70094-X) PMID: 25866355
3. Brown C. C-section rate rises globally as "costly intervention" replaces "natural process". *CMAJ.* 2018 Dec 17;190(50):E1489-E1490. DOI: [10.1503/cmaj.109-5686](https://doi.org/10.1503/cmaj.109-5686) PMID: 30559285 PMID: PMC6291390
4. Bhandari AKC, Dhungel B, Rahman M. Trends and correlates of cesarean section rates over two decades in Nepal. *BMC Pregnancy Childbirth.* 2020 Dec 9;20(1):763. DOI: [10.1186/s12884-020-03453-2](https://doi.org/10.1186/s12884-020-03453-2) PMID: 33298004 PMID: PMC7724849
5. KC P, Neupane S. Cesarean deliveries among Nepalese mothers: changes over time 2001-2011 and determinants. *Arch Gynecol Obstet.* 2014 Feb;289(2):421-427. DOI: [10.1007/s00404-013-2976-8](https://doi.org/10.1007/s00404-013-2976-8) PMID: 23900728
6. Ministry of Health and Population [Nepal], New ERA, ICF. 2022 Nepal Demographic and Health Survey summary report. Kathmandu, Nepal: Ministry of Health and Population [Nepal]; 2023.
7. Singh SM, Singh T, Thakur V. Prospective study of primary cesarean section in multigravida. *New Indian J OBGYN.* 2023;10(1):204-208. DOI: [10.21276/obgyn.2023.10.1.36](https://doi.org/10.21276/obgyn.2023.10.1.36)
8. Shagufta, Shah N, Bhagat N. Study of Primary Caesarean Section in Multiparous Women in a Tertiary Care Centre. *Int J Acad Med Pharm.* 2023;5(1):745-748. DOI: [10.47009/jamp.2022.5.1.155](https://doi.org/10.47009/jamp.2022.5.1.155)
9. Meena N, Parveen S, Nagar T, Meena NK. Study of indications of primary cesarean section in multigravida patients: A retrospective study. *Asian J Med Sci.* 2022;13(7):145-148. DOI: [10.3126/ajms.v13i7.43663](https://doi.org/10.3126/ajms.v13i7.43663)
10. Bhagat A, Dwivedi J, Kumari C. Examining Primary Cesarean Section in Multiparous Women: A Forward-looking Investigation. *Int J Dent Med Sci Res.* 2024;6(1):529-533. DOI: [10.35629/5252-0601529533](https://doi.org/10.35629/5252-0601529533)
11. Rajput N, Singh P, Verma YS. Study of primary caesarean section in multigravida patients. *Int J Reprod Contracept Obstet Gynecol.* 2018;7(1):185-191. DOI: [10.18203/2320-1770.ijrcog20175843](https://doi.org/10.18203/2320-1770.ijrcog20175843)
12. Shah RK, Ansari S, Mushtaq R, Shah P, Shrestha R, Deep JP. Primary Caesarean Section among Multiparous Pregnant Women Visiting a Tertiary Care Centre: A Descriptive Cross-sectional Study. *J Nepal Med Assoc.* 2022 Oct 1;60(254):848-852. DOI: [10.31729/jnma.7532](https://doi.org/10.31729/jnma.7532) PMID: 36705161 PMID: PMC924930
13. NeneDK, BahetiTC, BangalVB. Indications of primary caesarean section in multiparous women in patients of rural area of Western Maharashtra, India. *Int J Reprod Contracept Obstet Gynecol.* 2020;9(5):1950-1953. DOI: [10.18203/2320-1770.ijrcog20201786](https://doi.org/10.18203/2320-1770.ijrcog20201786)
14. Desai E, Leuva H, Leuva B, Kanani M. A study of primary caesarean section in multipara. *Int J Reprod Contracept Obstet Gynecol.* 2013;2(3):320-324. DOI: [10.5455/2320-1770.ijrcog20130912](https://doi.org/10.5455/2320-1770.ijrcog20130912)
15. Sharmila G, Nishitha C. Study of primary caesarean section in multigravida. *Asian Pac J Health Sci.* 2016;3(4):89-94. DOI: [10.21276/apjhs.2016.3.4.14](https://doi.org/10.21276/apjhs.2016.3.4.14)
16. Sethi P, Vijaylaxmi S, Shailaja G, Bodhare T, Devi S. A study of primary caesarean section in multigravida. *Perspectives in medical research.* 2014;2(2):3-7.
17. Abdelbaset AF, El Gelany S, Mousa AB, Sediek Salem HO. Analysis of primary caesarean section in Minia Maternity university Hospital (MMUH) (A prospective descriptive study). *Minia J Med Res.* 2022;33(1):30-9. DOI: [10.21608/mjmr.2022.241598](https://doi.org/10.21608/mjmr.2022.241598)
18. Ramavath RB, Devi DH. Study of primary caesarean section in multiparous women. *MedPulse International Journal of Gynaecology.* 2020;14(3):84-6. DOI: [10.26611/10121434](https://doi.org/10.26611/10121434)
19. Srivastava S, Ajay D, Sreelatha S. Study of primary caesarean sections in multigravida. *Indian J Obstet Gynaecol.* 2024;4(1):18-23.
20. Hangarga US, Yattinamani B. Clinical study of primary caesarean section in multiparous women. *Int J Clin Obstet Gynaecol.* 2020;4(2):32-4. DOI: [10.33545/gynae.2020.v4.i2a.501](https://doi.org/10.33545/gynae.2020.v4.i2a.501)