Original Article

# Descriptive Analysis of Caesarean Sections Performed at Federal Government Polyclinic Islamabad

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## Abstract

Objective: To determine the rate of cesarean sections among pregnant women admitted to the hospital and to document the indications for cesarean sections among them.

Methodology: This descriptive observation study was carried out at the Department of Obstetrics and Gynecology, Federal Government Polyclinic (FGPC), Islamabad from September 1, 2022 to August 31, 2023. Non-probability consecutive sampling technique was employed. All pregnant women who were admitted in the hospital for childbirth were included in the study. Patients who did not consent for participation in the study were excluded. Robson's ten group classification system (RTGCS) was employed to categorize the women undergoing cesarean sections.

Results: Out of 3489 deliveries, there were 1855 cesarean sections with cesarean section rate of 53.16%. Majority of the cesarean sections (n=1445; 77.89%) were emergency whereas only 22.10% (n=410) cesarean sections were elective. Majority of the cesarean sections (n=1411; 76.06%) were instituted among women with previous scars whereas 444(23.93%) were performed in primigravida.

The highest frequency of cesarean sections was observed among women of Robson's group-5 (n=965; 52.02%), followed next by women in Robson's group-2 (n=276; 14.87%), and those in Robson's group-1 (n=182; 9.81%).

Conclusion: The rate of cesarean sections was 53.16%. Majority of the cesarean sections were performed among women with previous cesarean section. Robust efforts should be made to improve the standards of obstetric care at the level of the primary healthcare facilities. This will help to reduce not only primary cesarean sections but more importantly the alarmingly high secondary cesarean sections in the Robson's group-5 women.

Key words: Increased caesarean section rates; Robson's Ten Group Classification System (RTGCS); Indications of induction of Caesarean sections; Vaginal birth after cesarean.

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## Introduction

Unless complicated, pregnancy and childbirth are normal physiological processes. The obstetricians try their level best to ensure uneventful progression of these natural processes and hence achieve optimal feto-maternal outcomes. Under normal circumstances, vaginal delivery is preferred over caesarean section; however, the rate of cesarean sections has been consistently increasing over the past four decades across the globe. [1-3]

Data regarding cesarean section rates are published regularly from the developed nations; however; there is relative deficiency of such data from most of the developing countries. Published studies from different parts of the globe have been reporting increasing rates of cesarean sections.[4, 5]

Cesarean section is a double edged-sword in the

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hands of obstetricians. When indicated genuinely, it serves to save two precious lives; however, when cesarean section is employed injudiciously, it has certain short term and long-term repercussions. For instance, once a cesarean section is performed in a woman during any pregnancy, there is great likelihood of the women to be managed through cesarean section for subsequent deliveries. The increasing cesarean section rate has given birth to the menace of ever-increasing frequency of placenta accreta spectrum, rupture of the uterine scar and obstetrical hysterectomies. [6, 7]

Internationally there is growing awareness about the consistently rising rates of cesarean sections; however, there is relative lack of quality research into this issue in our country. The current study was therefore planned to determine the rate of cesarean sections as well as the various indications for performing cesarean sections at our institute. The rationale of our study was to generate valuable local evidence-base regarding this important obstetric issue of rising rates of cesarean sections. This will help to translate into improved obstetric care for the future women at our hospital as well as similar public sector hospitals.

## Methodology

This descriptive observation study focused on the collection of numerical data regarding severe maternal outcomes and their underlying associated factors. It was conducted at the Department of Obstetrics and Gynecology, Federal Government Polyclinic (FGPC), Islamabad over a period of one year, spanning from September 1, 2022 to August 31, 2023. The study was approved by the hospital ethics committee and proceeded in accordance with the ethical protocols of Helsinki's Declaration of 2013. The anonymity of participants was guaranteed. Informed consent was taken from the patients.

Non-probability consecutive sampling technique was employed. Robson's Ten Group Classification System (RTGCS) [8] was employed for classification of the women undergoing cesarean sections.

Numerical data of women who delivered vaginally or through cesarean sections during the study period was recorded. These data included age of the patients, their educational status, social status, whether booked or un-booked cases, gravida/ parity status, and indications for cesarean sections. Women undergoing cesarean sections were categorized as per RTGCS. The detailed maternal clinical and demographic characteristics were recorded.

The data were analysed through SPSS version 21 and various descriptive statistics were employed to calculate frequencies, percentages, means and standard deviation. The numerical data such as age of the patients was expressed as Mean ± Standard deviation. The categorical data such as the group-wise distribution of cesarean sections was expressed as frequency and percentages. The primary outcome measure was to determine the rate of cesarean sections at our department. The secondary outcome measure was to determine the relative share of each Robson's group of women.

## Results

During the study period, the hospital recorded 3489 deliveries wherein 1855 were cesarean sections. The rate of cesarean sections was 53.16%. Majority of the cesarean sections (n=1445; 77.89%) were emergency whereas only 22.10% (n=410) cesarean sections were elective. Majority of the cesarean sections (n=1411; 76.06%) were instituted among women with previous scars whereas 444(23.93%) were performed in Primigravida.

**Table I: Demographic and baseline clinical characteristics of the patients. (n=1855)**

| Clinical and Demographical Features of the patients undergoing CS | Number / Percentage |
|---|---|
| **Age of the woman in years:** | |
| ≤20 years | 27(1.45%) |
| 21-30 years | 1143(61.45%) |
| 31-40 years | 679(36.60%) |
| >40 years | 6(0.32%) |
| **Gravida status of the woman:** | |
| Primigravida | 509(27.43%) |
| Multigravida | 1330(71.69%) |
| Grand Multigravida | 16(0.86%) |
| **Booking status:** | |
| Yes | 1103(59.46%) |
| No | 752(40.53%) |
| **Socioeconomic status:** | |
| Poor | 1744(94.01%) |
| Middle | 111(5.98%) |
| **Educational status of the woman:** | |
| Illiterate | 1205(64.95%) |
| Primary | 628(33.85%) |
| Secondary | 13(0.70%) |
| Tertiary | 9(0.48%) |

The patients ranged in age between 17-42 years with a mean age of 27.89±4.42 years. Table I shows the

demographic and clinical characteristics of the included patients.

The highest frequency of cesarean sections was observed among women of Robson's group-5 (n=965; 52.02%), followed next by women in Robson's group-2 (n=276; 14.87%), and those in Robson's group-1 (n=182; 9.81%).

Table II comprehensively describes the split figures for women in various groups of the Robson's classification system.

**Table II: Frequencies of Indications for Caesarean Sections as per Robson's Parameters. (n=1855)**

| Indications | No. | % |
|---|---|---|
| Nulliparous single cephalic >37weeks spontaneous labour | 182 | 9.81% |
| Nulliparous single cephalic >37 weeks Induction or caesarean section before labour | 276 | 14.87% |
| Multiparous except previous caesarean sections single cephalic >37 weeks spontaneous labour | 119 | 6.41% |
| Multiparous except previous caesarean sections single cephalic >37 weeks induction or caesarean before labour | 117 | 6.30% |
| Previous caesarean section single cephalic >37 weeks | 965 | 52.02% |
| All nulliparous breech | 73 | 3.93% |
| All multiparous breech including previous caesarean sections | 39 | 2.10% |
| All multiple pregnancies including previous caesarean sections | 33 | 1.77% |
| All abnormal lies including previous caesarean sections | 26 | 1.40% |
| All single cephalic >36 weeks including previous caesarean sections | 25 | 1.35% |

## Discussion

Obstetricians try hard to ensure uneventful progression of every pregnancy in a natural way. A normal labor in a normal pregnancy is considered to be the major determinant of whether the childbirth will be through vaginal or cesarean delivery. Labor refers to the physiological process through which the products of conception (i.e., the fetus and placenta) are delivered from the uterus through the vagina. This process is categorized into three stages. The smooth progression of normal labor requires three important factors. These include good maternal efforts and uterine contractions; favorable fetal characteristics, and adequate pelvic anatomy. These factors have been historically labelled as the passenger, power, and passage. The obstetricians employ several measures to ensure safe and monitored progression of normal labor. Continuous monitoring of the fetus and mother and normal progression of the process ensures safe labor. [9-11]

The obstetricians quite often face challenging situations where they have to bail out the pregnant women with cesarean deliveries. The history of cesarean sections spans over centuries; however, it was avoided because of the associated high mortality rates. The introduction of low transverse incision on the uterus by Munro Kerr about a century ago was a major breakthrough in the technique. With ever increasing safety of various forms of anesthesia and operative techniques, cesarean sections have gained popularity not only among the obstetricians but also the pregnant women. Resultantly the rates of cesarean sections are consistently rising in all human populations. [12-14]

What constitutes an acceptable rate of cesarean sections? There exists no consensus or universal agreement in this regard; however, in 1985, the World Health Organization quoted it to be around 10%-15% at the community level.[15] The rate of cesarean sections has been consistently rising worldwide over the last few decades. The published literature has described a variety of factors to be responsible for this increasing rate of cesarean sections. Among these include easy access of women to cesarean section services, family or mother's own preference for cesarean section over vaginal delivery, advanced maternal age at childbirth, Obstetricians' own bias towards cesarean section for a variety of indications that could be judicious or injudicious. [16-18]

In our study, the rate of cesarean section was 53.16%. Considerable variations exist in the reported rates of cesarean sections from different institutions and different countries. Majid E et al from Karachi reported it to be 36.5% whereas Ansari A et al from Rawalpindi reported it to be 54%. Internationally there is considerable variation in the reported rates of cesarean section. For instance, 40% in Iran, 58.2% in Oman and 94.49% in India. [19-23]

The high cesarean section rate in our study can be explained on the basis of the fact that our hospital is a tertiary care teaching setup. We receive referred and complicated cases not from the twin cities of Rawalpindi and Islamabad but also from far flung regions such as Azad Kashmir, Gilgit Baltistan and

some other remote districts of Punjab and Khyber-Pukhtunkhwa.

Our study pertains to a public sector referral hospital. Different rates of cesarean section births in public versus private sector health facilities suggest that non-medical factors, such as monetary gains may motivate doctors to perform cesarean section deliveries. Singh P et al from India reported that cesarean section births are nearly three times more in private as compared to public sector hospitals. Similar significant differences in the rates of cesarean section in private versus public sector healthcare facilities have been reported from other countries.[24-27]

The Robson's classification system was introduced in 2001 and was endorsed by the WHO. Instead of classifying the cesarean section on basis of urgency or indications, the Robson system employs obstetric parameters such as pregnancy history and gestational age. Based on these parameters the women undergoing cesarean sections are put into ten different categories. The system can authentically compare cesarean section trends over time and across different settings.[28, 29]

In our study highest number of the cesarean section patients belonged to the Robson's group-5. Our finding conforms to several studies. Ansari A et al reported it to be 27.42% in their hospital whereas Majid E et al reported it to be 56%. In other low-income countries, the share of this group in cesarean section ranges between 51-83%. [19,20,30,31]

One theoretical solution to address the alarming number of women in the Robson's group-5 is to advocate for trial of labor after cesarean section (TOLAC) and hence enhance the rate of vaginal birth after cesarean section (VBAC). The trial of labor in such patients is not free from risks. Serious complications such as uterine rupture have been reported in the literature. Ulgu MM et al from Turkey observed that vaginal birth rate among women who had a previous cesarean section was only 2.1%. Landon MB et al from the US reported this figure of successful VBAC rate to be only 10%. In the resource restricted countries like ours, it may be easy to speak of encouraging VBAC; however given the recognized limitations of our systems and poor compliance on part of our women, it may not be very practical to achieve high success rates with VBAC. Given the aforementioned facts, the most practical solution for reducing the number of women in Robson group-5 is to focus on reducing primary cesarean sections among nulliparous and multiparous women with singleton term pregnancies. This intervention should focus especially on the obstetric services of the private hospitals. This will help to reduce the overall incidence of cesarean sections and hence curb the menace of rising cesarean sections in our country. [32,33]

## Conclusion

The rate of cesarean sections was 53.16%. Majority of the cesarean sections were performed among women with previous cesarean section. Robust efforts should be made to improve the standards of obstetric care at the level of the primary healthcare facilities. This will help to reduce not only primary cesarean sections but more importantly the alarmingly high secondary cesarean sections in the Robson's group-5 women.

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