

# Indications of Emergency vs Elective Cesarean Section: Cross-sectional Study done at Holy Family Hospital, Rawalpindi, Pakistan

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## ABSTRACT

**Aim:** To assess the indications of emergency vs elective cesarean section in patients at Holy Family Hospital, Rawalpindi.

**Materials and methods:** A descriptive cross-sectional study was conducted on 675 women who underwent cesarean section in the Gynecology and Obstetrics Department of the Holy Family Hospital, Rawalpindi, Pakistan over a period of 2 months. Sociodemographic features, type of cesarean, and their indications were recorded on a structured questionnaire. Data were analyzed by using Statistical Package for the Social Sciences version 23.

**Results:** A total of 675 women underwent cesarean section during the study period. The emergency cesarean section rate was 70.4%, while elective cesarean constituted of 29.6% cases. The most common indications for emergency cesarean were fetal distress (43.2%) followed by previous cesarean (19.2%) and failure to progress (9.3%), while that for elective cesarean were previous cesarean (41%) and malpresentation (24.5%).

**Conclusion:** Fetal distress and previous scar are the leading causes of cesarean section in our study. The improvement of maternal and child health facilities at basic health units, appropriate training of lady health workers and midwives, timely involvement of senior obstetrician, and formation of strict policies regarding cesarean section can have a profound effect in decreasing the rate of cesarean section.

**Clinical significance:** This study can prove to be of profound value in getting an insight into the continuously increasing rate of cesarean section. In developing countries like Pakistan, these increasing cesarean deliveries prove to be a burden on the already-constrained resources.

**Keywords:** Cross-sectional study, Elective cesarean, Emergency cesarean, Holy Family Hospital, Indications, Pregnancy.

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## INTRODUCTION

“Cesarean for once and then cesarean forever” is gradually becoming a norm in the obstetric world,<sup>1</sup> which has led to a global rise in cesarean section rate during the last three decades.<sup>2</sup> About 20 million cesarean section deliveries are conducted annually worldwide, making this the most frequently performed surgery in adults.<sup>3</sup>

Although the recommended cesarean section rate is 10 to 15% in a population,<sup>4</sup> the World Health Organization's health report 2015 reveals the actual cesarean section rate to be 17%, with marked variations across the globe. The American region has the highest rate (38%) and African region has the lowest rate (4%).<sup>5</sup> The rate of cesarean section in Asia is 27%<sup>2</sup> with highest rate in Iran of 48%, while, in South Asia, Maldives takes the lead at 41%.<sup>5</sup>

Various studies have been done to probe into the reasons for this high global rate of cesarean section, and it has been found that a considerable variation exists in the reasons of cesarean being performed in different parts of the planet. A review of the published medical literature reveals elective cesarean on maternal demand (due to fear of childbirth and pelvic floor damage), increased maternal age at first pregnancy, and improved surgical procedures as the most important causes of cesarean delivery in developed countries (US, Germany, Sweden, Brazil).<sup>6-9</sup>

In contrast to this, previous cesarean, fetal distress, obstructed labor, and breech presentation are the leading causes of cesarean section in developing countries, such as India, Bangladesh, Nepal, and Pakistan.<sup>10,11</sup> Apart from high-risk pregnancies and perinatal causes, the private sector has also played a profound role in the escalation of elective cesarean deliveries in the educated, upper class of developing countries.<sup>11</sup>

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Pakistan has also experienced a continuous rise in cesarean section rates over the past three decades. It has increased from 3% in 1990–91 to 16% in 2015, while the rate in urban population has reached an alarming level of 26%. For a low-income country like Pakistan with a limited health budget, this is not only a burden on the health system, but also on the economy.<sup>12</sup> In studies conducted at tertiary care hospitals of Karachi and Peshawar, previous cesarean was the topmost indicator of cesarean section followed by fetal distress and nonprogress of labor.<sup>11,12</sup>

The Holy Family Hospital, Rawalpindi is among the leading tertiary care hospitals of the country where about 18,000 deliveries are carried out in the gynecology and obstetrics department annually of which 30 to 35% are cesarean deliveries; and the least evidence is available about the reasons of this alarming rate of cesarean section in this hospital during the past 5 years. This study aims at assessing the reasons for the high rates of cesarean section in the Holy Family Hospital and generating data, which can help to lower this ever-rising rate of cesarean section in our country.

## OBJECTIVE

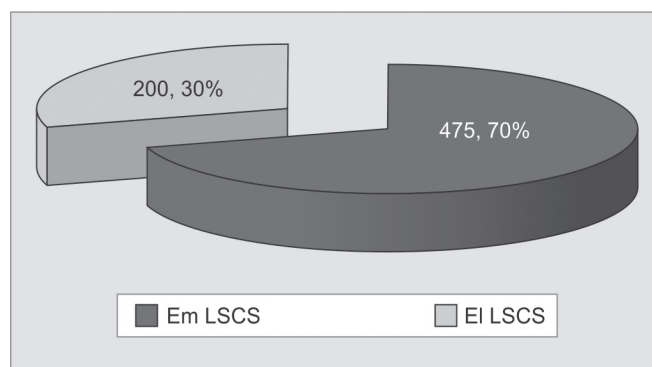
To assess the indications of emergency *vs* elective cesarean section in patients at the Holy Family Hospital, Rawalpindi, Pakistan.

## MATERIALS AND METHODS

This is a descriptive cross-sectional study done at the Gynecology and Obstetrics Department of the Holy Family Hospital, Rawalpindi, Pakistan. It was carried out over a period of 2 months. A total of 675 patients were included in the study, selected by convenience sampling. All patients who delivered by cesarean section in the morning timings from November 1 to December 31, 2015, at the Holy Family Hospital, Rawalpindi, were included in the study. The patients who underwent cesarean section in the evening timings during the study period were excluded from the study. Data were collected on a pre-designed performa, which included sociodemographic characters, type of cesarean, and their indications.

Elective cesareans were defined as those in whom the decision was made before the onset of labor. Emergency cesareans were defined as those performed in emergency for maternal or fetal reasons, such as fetal distress, failure to progress, obstructed labor, etc.

Data were analyzed by using Statistical Package for the Social Sciences version 23. Frequencies and percentages were calculated for age, parity, education, socioeconomic status, residence, booked or nonbooked, emergency or elective cesareans, and indications of cesarean section.



Graph 1: Emergency and elective cesarean

## RESULTS

In this study, 675 women were included of which 200 women (30%) underwent elective cesarean and 475 women (70%) had emergency cesarean (Graph 1). The highest rate of emergency cesarean section was found in multigravida, booked uneducated patients, 26 to 35 years of age, belonging to rural, middle socioeconomic group (Table 1). Fetal distress was the most common indication in women undergoing emergency cesarean (43.2%) followed by previous cesarean (19.2%) and failure to progress (9.3%) (Table 2). The highest rate of elective cesarean section was found in multigravida, booked patients, 26 to 35 years of age, belonging to urban, middle socioeconomic group and having education up to matriculation. Previous scar (41%) and malpresentation (24.5%) were the most frequent reasons of elective cesarean section (Graph 2).

## DISCUSSION

The outcome of pregnancy, in addition to many other factors, is strongly linked with the mode of delivery, and the use of cesarean section as mode of delivery is continuously increasing. The current study, which aimed at assessing the reasons of cesarean section in the Holy Family Hospital, has depicted that fetal distress was the most frequent reason of cesarean section (30.4%). A study conducted in the Gynecology and Obstetrics Department of CMH Rawalpindi in 2012 revealed that fetal distress was responsible for about 11.2% cesarean sections<sup>13</sup> and the one done in Northwest Ethiopia showed that 15.9%<sup>14</sup> of the cesarean deliveries were due to fetal distress. The plausible explanation for this high rate of cesarean section due to fetal distress in the current study is that most of the patients are referred to Holy Family Hospital from peripheries after trial of labor and thus, mostly the baby is already distressed. Thereby, further trial is not possible and thus, cesarean is performed immediately.

In our study, previous scar accounted for 25.6% of cesarean deliveries and appeared as the second-most

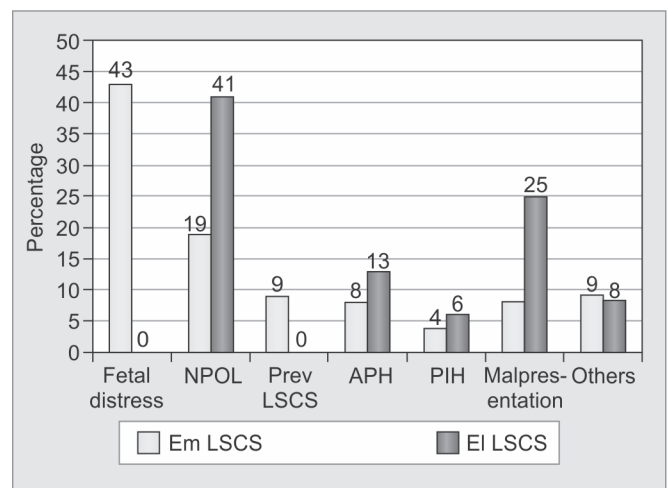
**Table 1:** Sociodemographic features

Demographic features		Em LSCS		EI LSCS	
		Number	Percentage	Number	Percentage
Age in years	15–25	157	33.1	21	10.5
	26–35	274	57.7	136	68
	36–45	44	9.3	43	21.5
Education	Uneducated	237	49.9	49	24.5
	Matric	127	26.7	94	47
	Graduate	111	23.4	57	28.5
Residence	Urban	213	44.8	112	56
	Rural	262	55.2	88	44
Booking status	Booked	323	68	169	84.5
	Nonbooked	152	32	31	15.5
Parity	Primigravida	181	38.1	45	22.5
	Multigravida	294	61.9	155	77.5
Socioeconomic status	Lower	224	47.2	54	27
	Middle	241	50.7	146	73
	Upper	10	2.1	0	0

**Table 2:** Indications for emergency vs elective cesarean

Reason for C-section	Previous	Mode	Mode		Total
			Emergency	Elective	
Scar	Number	Emergency	91	82	173
		%	19.2%	41.0%	25.6%
Fetal distress	Number	Emergency	205	0	205
		%	43.2%	0.0%	30.4%
APH	Number	Emergency	36	26	62
		%	7.6%	13.0%	9.2%
PIH	Number	Emergency	18	12	30
		%	3.8%	6.0%	4.4%
CPD	Number	Emergency	4	16	20
		%	0.8%	8.0%	3.0%
Obstructed labor/failure to progress	Number	Emergency	44	0	44
		%	9.3%	0.0%	6.5%
Others	Number	Emergency	41	15	56
		%	8.6%	7.5%	8.3%
Breech presentation	Number	Emergency	36	49	85
		%	7.6%	24.5%	12.6%
Total		Number	475	200	675

frequent reason of cesarean section. Furthermore, it was the most frequent reason of elective cesarean section (41%), which is consistent with the studies conducted in tertiary care hospitals of Iran, India, and Bangladesh, which showed that previous scar is the reason of 31.2,<sup>2</sup> 29,<sup>15</sup> and 24.1%<sup>16</sup> cesarean sections respectively. This is possibly due to the decreased rate of a successful trial of labor after cesarean section, which, in turn, can be due to the lack of motivation on the part of both the doctors and patients. The finding is also consistent with a study conducted in Ethiopia, which sculpted that the women with previous scar were more likely to get another cesarean delivery than their counterparts and only one-third of the women with a single scar were offered a trial of vaginal delivery.<sup>14</sup>



**Graph 2:** Reasons of emergency and elective cesarean section

The third cause of cesarean section in our study was breech presentation, which not only accounted for 12.6% of the cesareans in total, but was also responsible for 24.5% of the elective cesarean deliveries. These results differ from the results of a study conducted in a tertiary care hospital of Karachi, which sculpted that 6.87%<sup>1</sup> of the cesarean sections were due to breech presentation. The possible reason for this can be the difference in policies and attitudes of the hospitals and doctors respectively, regarding breech delivery as many gynecologists consider cesarean section a safer option for breech delivery.

Pregnancy-induced hypertension (PIH) was responsible for about 4.4% of the cesarean section deliveries in our study, which is in correlation with a study conducted in the Lady Reading Hospital in Peshawar, Pakistan, which depicted that 5.7%<sup>11</sup> of the cesarean deliveries were due to PIH. This can be attributed to the lack of proper antenatal care and monitoring. Proper antenatal care cannot only pick up such cases earlier, but their

timely management can also prevent the onset of complications which, in return, can decrease the incidence of cesarean section due to PIH.

Obstructed labor/failure to progress contributed to about 6.5% of the cesarean section deliveries in our study. This is in contrast to a study conducted in Bangladesh in which 20.5%<sup>16</sup> cesarean section deliveries were conducted due to obstructed labor/failure to progress, while that done in northwest Ethiopia documented that obstructed labor/failure to progress was the leading cause of deliveries by cesarean section (30.7%).<sup>14</sup> This gross difference is attributable to the variation in approaches of doctors as well as the difference in health facilities and health policies of different countries.

The cardinal limitation of this study is the narrow geographic area from which study participants were taken, as this might limit the generalization of results to the whole population. Secondly, the study was performed as a project of research training of 4th year MBBS students, who were available with the department in the morning timings only. Thereby, data collection was also limited to the patients of morning timings only.

## CONCLUSION

This study has sculpted that fetal distress is the most frequent reason for emergency cesarean section, while previous scar is the leading cause for elective cesarean section in the Gynecology and Obstetrics Department of the Holy Family Hospital, Rawalpindi. An appropriate training of lady health workers and midwives, coupled with better health facilities at basic health units and maternal and child health care centers can not only perk up handling of cases at peripheries, but also decrease the delayed referrals of complicated cases from peripheries to tertiary care hospitals where emergency cesarean is usually done for such cases as a last resort. Moreover, proper antenatal monitoring, timely involvement of senior obstetrician, and comprehensive and strict policies of the hospitals regarding cesarean section can have a profound effect on decreasing the rates of cesarean section.

## CLINICAL SIGNIFICANCE

This study can prove to be of profound value in getting an insight into the continuously increasing rate of cesarean section. In developing countries like Pakistan, these increasing cesarean deliveries prove to be a burden on the already-constrained resources. This study can help in devising strategies that can alleviate this burden and help shift the concentration toward the provision of rest of the essential health facilities.

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