



Original Article



Indications and Frequencies of Elective and Emergency Cesarean Section in Social Security Landhi Hospital Karachi, Pakistan

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ARTICLE INFO

Keywords:

Elective Cesarean, Emergency Cesarean, Dystocia, Antepartum Hemorrhage

How to Cite:Tahir, H., Ashfaq, S., Bano, Z., Samina, M., Manzoor, S., & Nasim, A. (2025). Indications and Frequencies of Elective and Emergency Cesarean Section in Social Security Landhi Hospital Karachi, Pakistan: Indications and Frequencies of Elective and Emergency Cesarean Section. *Pakistan Journal of Health Sciences*, 6(2), 238-242. <https://doi.org/10.54393/pjhs.v6i2.2713>***Corresponding Author:**Humaira Tahir
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ABSTRACT

The cesarean section rate is high in Pakistan as compared with WHO recommendations. It is quite high in the public sector hospitals due to high-risk pregnancies repeat cesarean sections and referrals from private sector hospitals. **Objectives:** To determine the proportions of indications of elective and emergency cesarean sections. **Methods:** This cross-sectional study was carried out in the Department of Obstetrics and Gynecology, Social Security Landhi Hospital, Karachi, from January 1st, 2023 to December 31st, 2023. A total of 1150 patients were enrolled with a convenient sampling technique. Performa was filled by patients who delivered by cesarean section and through vaginal delivery. Patients who attended the Obstetrics patient's department were marked as booked cases and those who were admitted for early labor and later cesarean-section was performed, were marked as un-booked. Cesarean sections through emergency were also included. Patients of ruptured uterus were excluded from this study. Data were entered in SPSS software version 24.0 and analyzed for frequencies and percentages. **Results:** A total of 770 cesarean sections were done. Overall frequency of cesarean-sections was 66.95%. Frequency of elective and emergency cesarean-section was 485 (62.98%) and 285 (37.01%). Booked cases were 658 (85.45%) while un-booked were 112 (14.54%). The commonest indication was repeat cesarean-section in 150 (19.48%), cervical dystocia in 105 (13.63%), fetal distress in 103 (13.37%), and antepartum hemorrhage were 94 (12.20%) patients. **Conclusions:** It was concluded that the Cesarean-sections rate was very high as compared to normal vaginal deliveries. The most common indication of cesarean section was repeat cesarean section.

INTRODUCTION

Cesarean section delivery is defined as the birth of a fetus through the abdomen after given incision in the abdominal and uterine wall [1]. According to documents, 1st cesarean section was done in 1610 and 1st modern cesarean section was performed by Dr. James Barry on July 25th, 1826. When delivery through the vagina is impossible or contraindicated, cesarean section is the only way to deliver a fetus although it has its risks and complications which may be long-term or short term such as maternal morbidity, mortality, increased need for blood transfusion, postpartum hemorrhage, postpartum infection, morbidly

adherent placenta, and prolong stay in hospitals [2]. Birth of a newborn through cesarean section is a life-saving operation for the mother as well as for her fetus. When the rate of cesarean section is limited up to 10%, maternal and neonatal death decreases [3] and when the cesarean section rate rises above 15% there is an increased risk for maternal and perinatal morbidity [1]. The incidence of cesarean section is increasing in both developed and developing countries and worldwide it is the commonest operation performed by obstetricians. Mostly cesarean-sections are done safely but complications may be



encountered in a few cases which may be immediate or late [4]. Recent literature reveals that the rate of cesarean-section increases with advanced maternal age, especially in nulliparous patients [5]. The highest rate of cesarean-section reported in Latin America i.e. 42.8% [6]. World Health Organization notified that the rate of cesarean-section should be 10-15%. The latest data from 150 countries shows that 18.6% of total births by cesarean-section range from 6% to 27.2% in the least developed to modern developed countries [7]. Nowadays cesarean sections have an active role in the obstetrics practice for improving clinical performance [8]. In South Asia trend of cesarean-section is increasing with indications such as fetal distress, repeat cesarean-section, antepartum hemorrhage (APH), placenta Previa, and abruption. The rising trend for C-sections in developing countries is influenced by different factors such as advanced maternal age, higher level of education, urban residence, and socio-economic status [9]. The rate of emergency cesarean section was higher among young women in prim gravida i.e. 54.4% and elective cesarean section was 45.6% [10]. There are many recognized reasons for performing a cesarean section such as fetal distress, failure to progress, arrest of descent of fetus in the pelvis, repeat C-section, and breech presentation. In Pakistan, the cesarean-section rate was doubled in private hospitals as compared with public sector hospitals due to maternal requests. [11]. The most common cause of death in developing countries is hemorrhage and obstructed labor which could be decreased by up to 92% when a timely decision was taken [12].

Pakistan continues to experience cesarean section rates far exceeding World Health Organization recommendations, particularly in public-sector tertiary hospitals, yet limited institution-specific data exist regarding the distinct indications and proportions of elective versus emergency cesarean deliveries. Previous studies have inadequately explored local patterns of repeat cesarean sections, cervical dystocia, fetal distress, and socio-demographic contributors within underserved populations. This study aims to provide proper knowledge regarding cesarean-section versus normal vaginal delivery to pregnant ladies for controlling cesarean-section rates and promoting vaginal delivery and avoiding unnecessary cesarean-sections.

METHODS

A cross-sectional study was carried out in the Department of Obstetrics and Gynecology, Sindh Employees Social Security, Landhi Hospital, Karachi, Pakistan from January, 2023 to December, 2023. The age range of patients was 16-45 years. Ethical approval was taken from the Institutional Review Board before conducting the study. IRB reference No. SS/LH/2022-23/IRB-45 and informed consent were

also taken from patients who agreed to participate in the study. The sample size was calculated by Open EPI Software. A convenient Sampling Technique was used. All the pregnant women who attended the Obstetrics patient's department for their antenatal checkups were booked for deliveries, and those pregnant patients who were admitted in early labor and later on cesarean-sections were underwent, labelled as unbook cases, and all those pregnant women who had attended Obstetrics emergency for cesarean-section were also included in this study. The patients who had been diagnosed with ruptured uterus during emergency laparotomy were excluded from this study. A total of 1150 patients were enrolled during the specified period including booked or un-booked for their deliveries. A good design updated proforma was filled out for each patient separately about their relevant history and evidence of the cesarean-section delivery or normal vaginal delivery. Variables were maternal age, booked cases or un-booked cases, elective C-section or emergency C-section, cervical dystocia, fetal distress, antepartum hemorrhage, eclampsia, obstructed labor, bad obstetrical history, breech presentation, maternal wish, post maturity, twin pregnancy, cord prolapses, cord presentation, hydrops fetal is, socio-economic status and education. Data were analyzed by using SPSS software version 24.0 and frequency and percentage were calculated.

RESULTS

In the study period, there were 1150 pregnant women enrolled and underwent deliveries. Among them 770 underwent cesarean-section and 380 patients were delivered by normal vaginal delivery. The rate of cesarean-section and normal delivery were 66.95% and 33.04%. The cesarean-sections rate was very high as compared with normal vaginal deliveries. Out of 770 patients 658 were booked 112 were un-booked and they attended in Obstetrics Emergency Department. Elective cesarean sections were performed in 485 (62.98%) patients while emergency cesarean sections were in 285 (37.01%) patients (Table 1).

Table 1: Description Regarding C-Sections and Normal Delivery (n=1150)

Characteristics of the Patients	Frequency (%)
Cesarean-Sections	770 (66.95%)
Normal Delivery	380 (33.04%)
C-Sections	
Booked Cases	658 (85.45%)
Unbook Cases	112 (14.54)
Elective Cesarean Sections	485 (62.98%)
Emergency Cesarean Sections	285 (37.01%)

Patients who had delivered their babies by cesarean section. Total number of patients were 770 with different age groups. Most cesarean sections were done in the age

group of 21-30 years. In multigravida, the cesarean-sections rate was high i.e. 425 (55.19%). The majority of patients were poor i.e. 575 (74.67%) and mostly patients were un-educated 565 (73.37%), (Table 2).

Table 2: Sociodemographic Pattern in C-Sections, (n=770)

Characteristics of the Patients	Frequency (%)
Age	
<21 Years	105 (13.63%)
21-30 Years	415 (53.89%)
31-40 Years	165 (21.42%)
>40 Years	85 (11.03%)
Gravidity	
Primi Gravida	171 (22.20%)
Multi Gravida	425 (55.19%)
Grand Multi Gravida	174 (22.59%)
Socio-Economic Status	
Poor	575 (74.67%)
Middle Class	195 (25.325)
Education	
Educated	205 (26.62%)
Un-Educated	565 (73.37%)

Repeat cesarean-section was the most common indication for cesarean-section i.e. 19.48%. Other common indications of cesarean-sections were cervical dystocia 13.63%, fetal distress 13.37% and antepartum hemorrhage 12.20% (Table 3).

Table 3: Indications of Cesarean-Sections. (n=770)

Characteristics of the Patients	Frequency (%)
Repeat Cesarean Sections	150 (19.48%)
Among Repeat C-Sections	
Previous-1	65 (8.44%)
Previous-2	45 (5.84%)
Previous-3	30 (3.89%)
Previous-4	10 (1.29%)
Transverse/Oblique	35 (4.54%)
Maternal Wish	14 (1.81%)
Post Maturity	14 (1.81%)
Twin Pregnancy	14 (1.81%)
Cord Prolapses	12 (1.56%)
Cord Presentation	8 (1.03%)
Hydrops Fetalis	04 (0.5%)
Cervical Dystocia	105 (13.63%)
Fetal Distress	103 (13.37%)
Antepartum Hemorrhage	94 (12.20%)
Eclampsia	70 (9.09%)
Obstructed Labor	56 (7.27%)
Bad Obstetrical History	52 (6.75%)
Breech Presentation	39 (5.06%)

DISCUSSION

In our study rate of cesarean section was 66.95% and the rate of normal vaginal deliveries was 33.05%. Elective cesarean sections were performed in 485 (62.98%)

patients and emergency cesarean sections were in 285 (37.01%) patients. In a study, the reported rate of cesarean section was 39.4% and the rate of normal vaginal delivery was 60.57% [13]. This is a little bit resemble to our study. In another study, 90.37% of patients were delivered by normal vaginal delivery and only 9.63% were undergoing emergency cesarean section. In that study, emergency cesarean sections were 67.2% due to fetal distress. Indication of cesarean section due to antepartum hemorrhage was 1.11%. [14]. While in our study antepartum hemorrhage was higher i.e. (12,20%) fetal distress was lower (13.37%) and the cesarean section rate was (66.95%) In another study, out of 1968 patients 40.95% patient were undergone cesarean section delivery. Maximum patients (57.69%) were undergone cesarean-section in the age group 25-30 years. Indications of cesarean section were fetal distress 22.21%, mal-presentation 18.26%, antepartum hemorrhage 7.21%, eclampsia 5.28%, obstructed labor 3.36%, bad obstetrical history 3.36%, post maturity 1.92% and twin pregnancy was 0.96% [15]. In our study rate of cesarean section was higher i.e. 66.95%, and cesarean section in the age group of 21-30 years was 53.89%, resembled with that study and fetal distress and mal-presentation was lower and antepartum hemorrhage, eclampsia, obstructed labor and bad obstetrical history was higher. Nair et al., reported in a study that all patients were prim gravida and delivered by cesarean sections. Among them, 80% were booked and 20% were un-booked. The most common age group was 20-25 years. Elective cesarean was done in 18% of patients and emergency cesarean-section in 82% of patients. Indications of cesarean sections for breech presentation 5%, post maturity 3%, fetal distress 52%, cord presentation 2%, cervical dystocia 2% and antepartum hemorrhage 2% [16]. While in current study cesarean-sections were done only in 22.20% in prim gravida. Fetal distress was much higher in that study although antepartum hemorrhage and cervical dystocia were lower. Present study is quite different from that study. According to Mostafayi et al., in their study illiterate patients were 6.6%, primary school education was higher 50%, diploma education was 39.8% and only 6.6% of patients got college education [17]. While in present study majority were illiterate (un-educated) 73.37%, poor were 74.67% and resided in industrial 63.63%. In a study, it was reported that the rate of cesarean section was 81% and 19% of patients were delivered normally. Among them 68% were delivered by emergency cesarean-section and 32% by elective-cesarean, book patients were 25%, prim gravida was 30.87% and multigravida was 69.13%. the most common indication for cesarean section was a failure to progress 31%, fetal distress was 22%, mal-presentation was 11.7%, obstructed labor was 0.47% and maternal request for cesarean section was 2.87% [18]. In present study rate of cesarean section and emergency cesarean section were lower, booked patients were more, multi gravida were higher, and common indications for C-section were repeat cesarean followed by cervical dystocia, fetal

distress, antepartum hemorrhage, eclampsia, obstructed labor and bad obstetrical history. Current study is different from that study. Taj *et al.*, reported in a study that emergency cesarean section was 81.05% and elective cesarean was 18.94%. Cesarean section under the age of 20 years was 25% and between the age group 20-30 years 60% [19]. While in present study cesarean section under the age 21 years was 13.63% and between age group 21-30 years was 53.89%. In that study 41.70% of patients were delivered by cesarean section due to repeat C-section, twin pregnancy and breech presentation 8.3%, maternal wish 2.8% and bad obstetrical history was 8.3%, in that study indication for cesarean-section was more in repeat cesarean cases while in current study it was 19.48%. Coskun *et al.*, revealed in their study that 10.3% of patients delivered by emergency cesarean-section due to complete breech presentation. Elective cesarean-section was 9.7% due to breech presentation [20]. In a study 39% of women were nulliparous and among them, 14% had undergone emergency cesarean section [21]. In a study, 48.3% patients were prim gravida, and 12% of patients had a history of repeat cesarean section. Cesarean-section due to cord prolapse was 2.15%, Antepartum Hemorrhage 6.15% and Breech Presentation 9.23% [22]. Idrees *et al.*, reported in a study that rate of cesarean-section was 10.1% and indications for cesarean-section due to malpresentation was 14.4%, obstructed labor 21.2%, Repeat-cesarean section 10.2% and fetal distress was 5.9% [23]. The study was limited by its single-center cross-sectional design, convenience sampling, lack of inferential statistical analysis beyond descriptive frequencies, and absence of maternal or neonatal outcome comparisons, which restrict causal interpretation and generalizability. Additionally, potential selection bias and exclusion of broader healthcare settings may have influenced findings. Future research should include multicenter prospective studies, standardized classification systems such as the Robson criteria, and evaluation of maternal-fetal outcomes to develop evidence-based interventions for optimizing cesarean section practices and promoting safe vaginal deliveries.

CONCLUSIONS

It was concluded that the cesarean-section rate was very high as compared to normal vaginal deliveries which is against WHO criteria. Elective cesarean sections were performed more as compared to emergency cesarean sections. The most common indication of cesarean section was found to be a previous cesarean section. The other common indications were cervical dystocia, fetal distress, and antepartum hemorrhage. Cesarean section rate should be controlled specially in prim gravidas with the help of proper antenatal care and management of its complications appropriately. So, that it will reduce the rate of cesarean section. For controlling cesarean section rate and enhanced maternal health outcome we are recommending proper antenatal checkup and care during labor.

Authors' Contribution

Conceptualization: HT

Methodology: SA, SM

Formal analysis: ZB

Writing and Drafting: MS, AN

Review and Editing: MS, AN, ZB

All authors approved the final manuscript and take responsibility for the integrity of the work

Conflicts of Interest

All the authors declare no conflict of interest.

Source of Funding

The author received no financial support for the research, authorship and/or publication of this article.

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