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INCREASING TREND IN CAESAREAN SECTIONS IN INDIA

Obstetrics & Gynaecology

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ABSTRACT

Cesarean section, C-section, or cesarean delivery is a surgery involving an incision on the abdomen and uterine walls to deliver the fetus after it has reached the 28th week of pregnancy. It is globally accepted surgery to deal with pregnancy-related complications, and to reduce maternal and perinatal morbidity and mortality. It is a significant operation with various immediate and long-term complications. In India, the last ten years have seen an alarming rise in cesarean section rates; the causes of this development are complex and poorly understood. Cesarean sections are overused in impoverished countries. Worldwide, 18.1 million cesarean deliveries occur annually, 19.1% of all births. From 7% in 1990, these numbers are predicted to reach 29% of births by 2030. In the five years before to 2021, C-sections in India grew from 17.2% to 21.5%. Nearly half of private sector deliveries are C-sections, 43.1% (2016) to 49.7% (2021). Multiple causes contributed to this growth. **Methods:** Data from all deliveries in the Department of Obstetrics and Gynecology at SRTR Government Medical College, Ambajogai from January 1, 2023, to December 31, 2023, was retrospectively collected to analyze cesarean rates and contributing factors. **Results:** The deliveries were categorized into two groups: pregnancies with previous cesarean sections amounting to 22% and pregnancies without previous cesarean sections that is 77.9%., Primary sections were further classified into low risk and high risk amounting to 80.2% and 19.2% respectively. In the low-risk group, 17.9% underwent cesarean section and in the high-risk group about 98.6% underwent C-section. The key indications for cesarean section in the low-risk pregnancy group include labor arrest, non-reassuring fetal cardiac status, failure of induction, and maternal request. In this study, the most frequent indication for a cesarean section is a history of previous cesarean section. The most common reason for pregnancy without a previous cesarean section was a non-reassuring fetal condition. **Conclusion:** Cesarean section (CS) is needed for high-risk pregnancies and unusual labor to reduce complications. CS, like any surgical operation, has acute and long-term risks and issues. The World Health Organization (WHO) stresses providing cesarean sections to women who need them over achieving a rate. For hospital cesarean section rates, the WHO does not provide specific guidance.

KEYWORDS

Cesarean section, maternal request, small family norm, changing trend, trial of labour, precious pregnancy

Introduction:

Known medically as a cesarean section, C-section, or cesarean delivery, this surgery involves making an incision on the abdomen and uterine walls to deliver the fetus after it has reached the 28th week of pregnancy. It is globally accepted surgery to deal with pregnancy-related complications, and to reduce maternal and perinatal morbidity and mortality. It is a significant operation with potential long-term consequences that are currently being studied, as well as immediate maternal and perinatal problems for subsequent pregnancies.

In India, the last ten years have seen an alarming rise in cesarean section rates; the causes of this development are complex and poorly understood.[1] excessive usage of cesarean sections has increased in developing nations.

Annually, there are about 18 million cesarean deliveries worldwide, constituting around 19.1% of all births. The percentage of these numbers has risen from a mere 7% in 1990 and is expected to reach over one-third (29%) of all births by 2030. The incidence of cesarean sections (C-sections) in India rose from 17.2% to 21.5% in the five years preceding 2021. Within the private sector, the proportions are 43.1% (2016) to 49.7% (2021), indicating that almost half of the deliveries in this sector are performed through a C-section. This rise could be ascribed to multiple factors.

The study revealed a correlation between higher levels of education among women residing in metropolitan regions and an increased likelihood of delivering via C-section. This suggests that factors such as increased independence and improved availability of healthcare services contribute to the rising occurrence of C-sections.

Overweight women had double the likelihood of undergoing a cesarean delivery compared to underweight women. Similarly, women aged 35-49 had twice the odds of having a cesarean delivery compared to women aged 15-24. The percentage of individuals experiencing pregnancy difficulties reduced from 42.2% to 39.5%, indicating that the higher prevalence of C-section deliveries was primarily caused by variables unrelated to medical conditions.

Non-clinical factors that may influence medical decisions include women's personal preferences, their socio-economic status, education level, and risk-averse clinicians who practice conservative medicine. Across India, women who gave birth at private healthcare facilities had a fourfold higher likelihood of undergoing a cesarean section during the study period from 2016 to 2021.[15]

In 2019-21, the rate of C-section deliveries in Maharashtra was 25.4%, with 18.3% in public health facilities and 38.9% in private health care settings.

The researchers emphasize that this may be attributed to insufficient infrastructure in public healthcare institutions. To reach the aforementioned conclusions, the researchers gathered and examined data from the National Family Health Survey (NFHS) conducted between 2015 and 2016, as well as between 2019 and 2021. The NFHS is a nationwide survey that collects data on various population and health indicators, with a particular focus on mother and child health. It is carried out throughout India.

The researchers advise exercising caution when applying threshold values for C-sections, as there are significant variances between different categories. In states that have reached advanced degrees of demographic change, the conditions necessitating C-sections may be more widespread. There is a significantly elevated percentage of economically disadvantaged women who are undergoing cesarean sections in the private healthcare sector.Additional examination and remedial measures are essential if some of these are deemed medically unnecessary.

Data from all deliveries that occurred in the Department of Obstetrics and Gynecology at SRTR Government Medical College, Ambajogai during the one year from January 1, 2023, to December 31, 2023, was retrospectively collected to analyze the rate of cesarean deliveries and the various contributing factors.

The study's goals were as follows: Finding the frequency of cesarean deliveries, identifying the various indications for the surgery, and evaluating their respective effects on the overall cesarean section rate (CSR) are the main goals of this study. We also want to assess the related morbidity among mothers. This is a step to identify LSCS indicators that could one day assist us in lowering the incidence rate in the institute.

METHOD:

Type: Retrospective Study

Duration: 24 months, November 2022 to August 2024, from January 1, 2023, to December 31, 2023

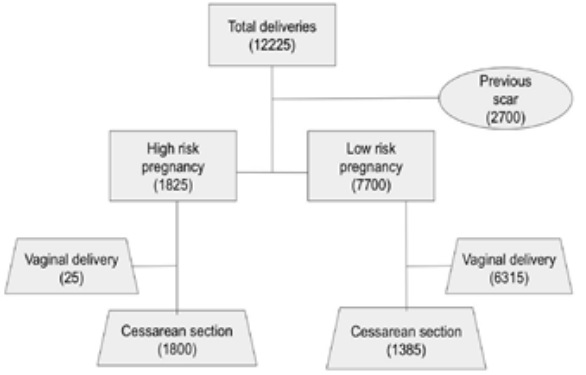
Place: Department of Obstetrics and Gynecology at SRTR Government Medical College, Ambajogai . The Government Hospital of Tertiary Care Centre was chosen as it is the most visited and very well-known for teaching institute especially for high quality, most advanced surgical treatments and for convenience.

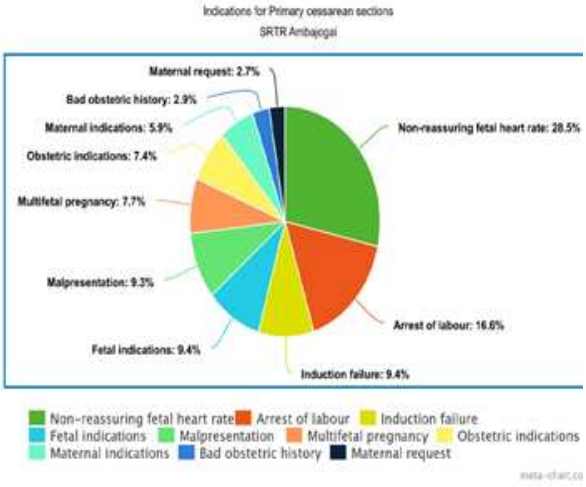
Inclusion criteria: Data on all live births were collected. In instances of cesarean deliveries, their indications were duly noted. Any complications during the surgical and post-operative phases were meticulously recorded for future reference and analysis.

Exclusion criteria: In this study we are not considering neonatal outcome and remote complications associated with cesarean sections.

Observations:

The deliveries were categorized into two groups: pregnancies with previous cesarean sections amouting to 22% and pregnancies without previous cesarean sections that is 77.9%. Subsequently, pregnant women without a history of cesarean section were identified as high-risk for pregnancies if they fell into one of the six categories: multiple gestations, suspected macrosomia, malpresentation, pre-eclampsia, maternal conditions, fetal conditions, and obstetric conditions which in our study was upto 14.9%. The remaining women were categorized as pregnancies with low risk amounting to 63%.





Both the low-risk and high-risk pregnancy groups were divided into subgroups based on the method of birth: vaginal delivery and cesarean section (CS). Within the high-risk pregnancy category, there were six specific reasons for performing a primary cesarean section: multiple gestations, macrosomia, malpresentation, as well as maternal, fetal, and obstetric causes[2], total of which was about 14.7% with vaginal delivery in this group to be upto just 25 in number (0.2%).

The foetal indications consisted of fetuses with growth retardation, macrosomia, and severe oligohydramnios. Maternal indications refer to pre-existing maternal diseases that have the potential to complicate the delivery process. These circumstances may include previous perineal repair, previous uterine surgery such as myomectomy, medical causes such as heart illness, and advanced maternal age. Obstetric indications refer to the specific conditions that are present during pregnancy, such as a history of complications, placenta previa, placental abruption, placenta accreta, cord prolapse, and pre-eclampsia/eclampsia.[3]

The key indications for cesarean section in the low-risk pregnancy group include labor arrest, non-reassuring fetal cardiac status, failure of induction, and maternal request.[4]

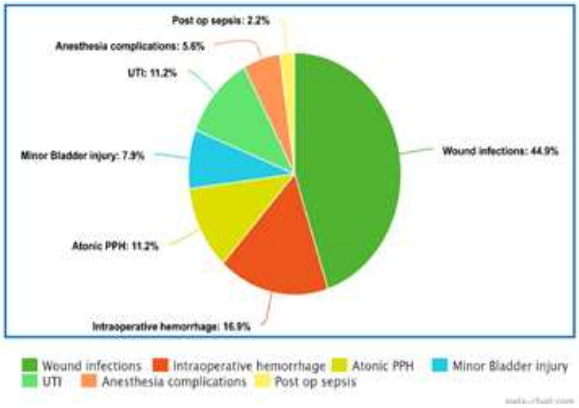
The diagnosis of labor arrest and non-forceps head rotation during pregnancy and labor relies on the physician's proficiency and adherence to the recognized local protocol.[5]

In this study, the most frequent indication for a cesarean section is a history of previous cesarean section. The most common reason for pregnancy without a previous cesarean section was a non-reassuring fetal condition.

The practice of trial for vaginal birth after cesarean (TOLAC) is limited in our hospital due to concerns about the strength of the previous cesarean scar, lack of information about the previous cesarean procedure[6,13], high number of deliveries being performed in the institution, inadequate monitoring due to a large patient load, and an increased number of referrals in the late stage of labor. Cesarean sections are commonly performed in circumstances of high risk, such as breech presentation, severe oligohydramnios, growth-restricted fetus, multiple pregnancy, malpresentation, and cephalopelvic disproportion. Cesarean sections were linked to a higher likelihood of maternal morbidity, even in circumstances where the risk was modest when compared to vaginal deliveries.[7]

The most prevalent types of wound infections are suture site infections, which can be identified by symptoms such as wound drainage, abscess formation, induration, fascitis, and gaping wounds. The subsequent consequences include atonic postpartum hemorrhage, urinary tract infection, postoperative fever, and postural headaches. The likelihood of experiencing severe maternal morbidity increases gradually with each subsequent cesarean section.

The incidence of adhesion, hysterectomy, blood transfusion, surgical damage, danger of placenta previa and accreta, and scar ectopics rises proportionally with the number of previous scars on the uterus.



DISCUSSION:

It is undeniable that cesarean section (CS) is essential in minimizing complications during high-risk pregnancies and atypical labor. However, it is crucial to recognize that CS, similar to any other surgical intervention, has both immediate and long-term hazards and problems.[7]

The factors contributing to this rise are complex and not well comprehended. Factors such as alterations in maternal traits and modifications in professional practice style. The primary factors contributing to this rise are the apprehension of experiencing pain during childbirth[4], particularly the pain caused by uterine contractions, the preference for timing the birth at a convenient time for families or healthcare providers, and the belief that it is less distressing for the infant. In certain cultural contexts, a cesarean section is performed to enable the selection and scheduling of the birth day based on certain ideas regarding luck or auspiciousness for the future of the infant. The small family norm[8] dictates that both the physician and the patients are unwilling to take any risks associated with irregular labor, and so, they opt for a cesarean section upon the request of the mother.[14] Increasing the utilization of fetal surveillance, specifically ultrasound (USG)[9], for the early detection of fetal growth restriction (FGR) and intrauterine growth restriction (IUGR)[10].

Operative vaginal delivery is indicated when there is a risk of injury to either the mother or the fetus. Maternal indications for operative vaginal delivery (OVD) include situations such as a lengthy second stage of labor, maternal tiredness, or a decision to shorten the second stage of labor. Two main fetal markers of OVD include fetal discomfort and an alarming fetal heart rate. To minimize potential difficulties for both the fetus and the mother, the operator of OVD applications must possess extensive knowledge of the device's unique indications, contraindications, application, and usage. In cases when trained healthcare practitioners are not involved, there is a possibility of minor maternal complications, such as laceration of the vagina and perineum, as well as serious complications, such as traumatic hemorrhage, bladder injury, and pelvic muscle injury, occurring during operative vaginal delivery (OVD). Newborns commonly experience a low Apgar score as a problem. However, OVDs have the ability to reduce both immediate and long-term risks related to second-stage cesarean sections, as long as they are carried out by skilled and experienced medical practitioners.[11] Moreover, OVDs have the capacity to reduce healthcare costs related to cesarean procedures. However, the problem of decreasing use of instruments was worsened by a drop in the number of physicians who have the necessary skills and training to perform these procedures, together with concerns about potential legal problems.[12]

Cesarean sections are frequently performed in patients with high-risk factors such as breech presentation, previous cesarean delivery, growth-restricted fetus, and repeated pregnancies. The operation's safety has been enhanced by advancements in anesthesia, increased accessibility to blood transfusions, and the availability of antibiotics.

Groups	Clinical characteristics
1	Nulliparous, singleton, cephalic, ≥37 weeks, spontaneous labor
2	Nulliparous, singleton, cephalic, ≥37 weeks, induced labor or cesarean section before labor
3	Multiparous without previous cesarean section, singleton, cephalic, ≥37 weeks, spontaneous labor
4	Multiparous without previous cesarean section, singleton, cephalic, ≥37 weeks, induced labor or caesarean section before labor
5	Multiparous with prior cesarean section, singleton, cephalic, ≥37 weeks
6	All nulliparous breeches
7	All multiparous breeches (including previous cesarean section)
8	All multiple pregnancies (including previous cesarean section)
9	All pregnancies with transverse or oblique lie (including those previous cesarean section)
10	Singleton, cephalic, ≤36 weeks (including previous cesarean section)

The World Health Organization (WHO) suggests using some non-clinical measures to decrease the needless use of cesarean sections, while ensuring the provision of excellent and respectful healthcare. Education initiatives that actively involve women in the process of planning for childbirth, such as workshops on childbirth preparation, relaxation programs, and psychological help for those experiencing dread of pain or anxiety. It is essential to incorporate continuous monitoring and assessment into the implementation of such projects. Implement evidence-based clinical recommendations, conduct routine audits of C-section practices in hospitals, and provide health professionals with prompt feedback on the outcomes. Requesting a second medical opinion should be mandatory for deciding on a cesarean section, particularly in situations where it is feasible to do so. Several nations have implemented programs aimed at reducing the number of cesarean sections. However, further research is needed to validate the effectiveness of these interventions. The proposed model of care is a collaborative approach in which midwives take the lead in providing care, with round-the-clock support from a specialized obstetrician. Financial measures that seek to achieve equality in the fees levied for vaginal deliveries and cesarean procedures.

WHO proposes adopting the Robson classification as an internationally applicable cesarean section classification system. The Robson (also known as the "10 groups") system addresses certain inherent challenges associated with indications classifications. It is simple, robust, reproducible, and clinically relevant. It allows comparisons and analysis of cesarean section rates more reliably across different facilities, cities and regions.

CONCLUSIONS:

The increased importance placed on the well-being of the fetus in today's society, which often consists of smaller families, has led to a shift in delivery techniques towards favoring C-Sections. There is no tangible evidence to support the existence of an ideal percentage. The World Health Organization (WHO) emphasizes the importance of ensuring that cesarean sections are delivered to women who require them, rather than solely focusing on obtaining a specified rate. The World Health Organization (WHO) does not provide a precise recommendation for the cesarean section rate in hospitals. The necessity for cesarean section might significantly differ among hospitals based on the demographic characteristics of the community they serve. For instance, larger hospitals typically receive referrals for the most complex pregnancies or deliveries, which may consequently require a higher number of cesarean sections. However, certain smaller clinics may lack the necessary resources to perform cesarean sections. Suggesting a universal cesarean section rate for all facilities would be unsuitable.

Implementing effective strategies to decrease the frequency of primary cesarean deliveries will necessitate employing distinct methods for each specific indication. To effectively reduce the rates of cesarean sections, it is important to personalize indications and do comprehensive assessments following established protocols. This should be done by incorporating obstetric practices that are supported by evidence and conducting regular audits within the institution.

REFERENCES:

1. Roy N, Mishra PK, Mishra VK, Chattu VK, Varandani S, Batham SK. Changing scenario of C-section delivery in India: Understanding the maternal health concern and its associated predictors. J Family Med Prim Care. 2021 Nov;10(11):4182-4188. doi: 10.4103/jfmpc.jfmpc_585_21. Epub 2021 Nov 29. PMID: 35136786; PMCID: PMC8797113.
2. Nguyen AD, Duong GTT, Do DT, Nguyen DT, Tran DA, Phan TTH, Nguyen TK, Nguyen HTT. Primary cesarean section rate among full-term pregnant women with non-previous uterine scar in a hospital of Vietnam. Heliyon. 2022 Dec 9;8(12):e12222. doi: 10.1016/j.heliyon.2022.e12222. PMID: 36544845; PMCID: PMC9761699.
3. Safe prevention of the primary cesarean delivery. Cayghey, Aaron B. et al American Journal of Obstetrics & Gynaecology, Volume 210, Issue 3, 179-193
4. Duperron L. Should patients be entitled to cesarean section on demand?: Yes. Can Fam Physician. 2011 Nov;57(11):1246, 1248, 1250 passim. PMID: 22084452; PMCID: PMC3215597..
5. Bharati S, Dangal G, Tiwari KD, Maharjan S, Bhandari S, Karki A, Pradhan HK, Shrestha R, Bhattachan K. Fetomaternal Outcome of Pregnant Women at Term Undergoing Cesarean Section. J Nepal Health Res Counc. 2024 Jun 21;22(1):21-24. doi: 10.33314/jnhrc.v22i01.4599. PMID: 39080932.
6. Tanos V, Toney ZA. Uterine scar rupture - Prediction, prevention, diagnosis, and management. Best Pract Res Clin Obstet Gynaecol. 2019 Aug;59:115-131. doi: 10.1016/j.bpobgyn.2019.01.009. Epub 2019 Feb 10. PMID: 30837118.\
7. Mascarello KC, Horta BL, Silveira MF. Maternal complications and cesarean section without indication: systematic review and meta-analysis. Rev Saude Publica. 2017;51:105. doi: 10.11606/S1518-8787.2017051000389. Epub 2017 Nov 17. PMID: 29166440; PMCID: PMC5697917.
8. Fathalla, Mahmoud F. "Family Planning: Future Needs." *Ambio*, vol. 21, no. 1, 1992, pp. 84–87. *JSTOR*, http://www.jstor.org/stable/4313892. Accessed 2 Sept. 2024.
9. Teka, Hale, et al. "Perinatal Outcome of Oligohydramnios in Academic Hospitals in a Low Resource Setting." *African Journal of Reproductive Health / La Revue Africaine de La Santé Reproductive*, vol. 27, no. 4, 2023, pp. 54–64. *JSTOR*, https://www.jstor.org/stable/27250203. Accessed 2 Sept. 2024.
10. Wilk C, Arab S, Czuzoj-Shulman N, Abenhaim HA. Influence of intrauterine growth

restriction on caesarean delivery risk among preterm pregnancies undergoing induction of labor for hypertensive disease. J Obstet Gynaecol Res. 2019 Sep;45(9):1860-1865. doi: 10.1111/jog.14062. Epub 2019 Jul 9. PMID: 31290217.
11. Talukdar S, Purandare N, Coulter-Smith S, Geary M. Is it Time to Rejuvenate the Forceps? J Obstet Gynaecol India. 2013 Aug;63(4):218-22. doi: 10.1007/s13224-013-0465-4. Epub 2013 Aug 13. PMID: 24431645; PMCID: PMC3763047.
12. Parízek A. Porodnické kleste--prekonaná porodnická technika? [Forceps delivery--an outdated obstetric technique?]. Ceska Gynekol. 2010 Oct;75(5):408-16. Czech. PMID: 21374916.
13. Carauleanu A, Tanasa IA, Nemescu D, Socolov D. Risk management of vaginal birth after cesarean section (Review). Exp Ther Med. 2021 Oct;22(4):1111. doi: 10.3892/etm.2021.10545. Epub 2021 Aug 3. PMID: 34504565; PMCID: PMC8383756.
14. Inhorn, Marcia C., and Daphna Birenbaum-Carmeli. "Assisted Reproductive Technologies and Culture Change." *Annual Review of Anthropology* 37 (2008): 177–96. http://www.jstor.org/stable/20622620.
15. IIT Madras study finds an increasing number of C section deliveries across India between 2016-2021 PIB Chennai