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**A COMPARATIVE STUDY OF CESAREAN SECTION PREVALENCE  
IN INDIA AND ITS ASSOCIATION WITH MATERNAL  
AND NEWBORN’S HEALTH OUTCOMES**

***Introduction***

Cesarean section (C-section) plays a vital role in modern obstetrics, facilitating safe delivery in various medically necessary scenarios. However, a concerning trend has emerged regarding their increasing utilization globally, raising questions about potential over-utilization and its impact on maternal and child health. C-section in the Indian population may lead to various complications, including infection at the incision site or in the uterus, delayed recovery, adverse reactions to anesthesia, blood loss and hemorrhage, and potential risks in subsequent pregnancies such as uterine rupture and placental abnormalities. Babies born via C-section might face a slightly increased risk of respiratory issues, and there could be challenges with delayed initiation of breastfeeding. It’s essential to note that the decision to perform a C-section is often based on medical reasons and is considered safe in many cases, but like any surgical procedure, it comes with potential risks. This comparative study focuses on India, analyzing trends in C-section prevalence within the country and drawing comparisons with vaginal birth. Data is for all women aged 15–49 who had a birth in the five years preceding the survey [1, 2].

***Goals***

To analyze data of National Family Health Survey in India (NFHS 4, NFHS 5) [1, 2] and make the trend of C-section prevalence in India, to compare C-section vs vaginal delivery complications, to analyze specific factors driving C-section overuse in India.

***Material and method of research***

Employing a rigorous comparative analytical research methodology, this study utilizes data from credible and reliable sources, including peer-reviewed research articles, reports from the WHO [3], BMC [4, 5], Pregnancy and Childbirth and the National Family Health Survey NFHS 4 (2015–16), NFHS 5 (2019–21) of India [1, 2].

***The result of the research and discussion***

Recent data from the NFHS reveals a significant and concerning rise in C-section deliveries in India by 3.8%, exceeding the WHO’s recommended threshold of 20% [3]. C-section delivery rate raised from 17.2% (NFHS 4 (2015–16) to 21.0% (NFHS 5 (2019–21)). The observed rise in C-section prevalence in India, exceeding the WHO recommendation [3, 4], raises significant public health concerns regarding potential over-utilization and its impact on maternal and child health outcomes. The leading causes of maternal death in India are obstetric hemorrhage (47%), pregnancy-related infection (12%) and hypertensive disorders of pregnancy (10%) [2, 3]. These causes are more prevalent in poorer states, highlighting the need for improved maternal healthcare services in these regions [4]. Research reveals substantial regional and socioeconomic variations within India, with higher C-section rates observed in southern states compared to the north and in private healthcare facilities compared to public facilities [6]. Potential contributing factors in India might include: limited access to skilled birth attendants and adequate healthcare

resources, particularly in rural areas; socio-economic factors and potential patient or family preferences for C-sections due to perceived safety concerns or convenience; financial incentives within the healthcare system that might encourage unnecessary C-sections.

Table 1 – Indicators NFHS 4 (2015–16), NFHS 5 (2019–21)

Indicators	NFHS 4	NFHS 5	Change
Antenatal care visits (4 or more)	36.5%	47.8%	Increase (11.3%)
Institutional deliveries	78.9%	89.1%	Increase (10.2%)

Table 2 – Mortality Rate and Complications in Vaginal Birth vs. C-Section (Indian Population)

Factors	Vaginal birth	C-section
MMR estimated	18–22 deaths per 100,000 births	32–39 deaths per 100,000 births
Complications (Mothers)		
Hemorrhage	low	high
Infection	low	high
DIC	low	high
Uterine Rupture (in subsequent pregnancies)	N/A	present
Pelvic floor issues	less	more
Recovery duration	less	more
Complications (Newborns)		
Respiratory Issues	Less common	Slightly more common
Difficulty Breastfeeding	Less common	May be initially more challenging

### **Conclusion**

This study identified a concerning rise in the prevalence of C-section in India, exceeding the WHO recommended threshold. The analysis revealed a significant increase in C-section deliveries, rising from 17.2% in NFHS 4 (2015–16) to 21.0% in NFHS 5 (2019–21). While research suggests similar C-section rates (around 20–27%) in India and some developed nations, further investigation is crucial to understand the underlying factors driving this utilization within the specific context of the Indian healthcare system. This necessitates delving deeper into the disparities between India and other countries to identify potential areas for improvement. Additionally, the study highlighted substantial geographical and socioeconomic disparities in C-section utilization, indicating a need for focused efforts towards achieving equitable access to quality maternal healthcare services across the country. Further research is crucial to gain a deeper understanding of the specific factors driving C-section overuse in India and develop effective strategies to optimal birth practices for both mothers and babies. It is imperative to ensure that C-sections are only utilized when medically necessary, prioritizing the well-being of both mothers and newborns.

### **LITERATURE**

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