



TRENDS OF CESAREAN DELIVERIES IN TERTIARY CARE HOSPITAL IN SHIMLA DISTRICT OF HIMACHAL PRADESH

Paediatrics

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ABSTRACT

Background: The rate of cesarean births in India is steadily rising. It has already crossed the World Health Organization (WHO) threshold of 15 percent. The present study aimed to study the trends of cesarean birth in the Shimla district of Himachal Pradesh, India.

Methods: A retrospective review of records of Kamla Nehru Hospital, Shimla covering the period January 2016 to December 2020 was conducted. The total number of deliveries and cesarean deliveries conducted were retrieved.

Results: A total of 34,799 deliveries were conducted in Kamla Nehru Hospital, Shimla from 2016 to 2020. There was a continuous increase in the number of deliveries conducted in Kamla Nehru Hospital, Shimla from 2016 to 2020. A total of 6476 deliveries were conducted in 2016, 6539 in 2017, 6926 in 2018, 7339 in 2019, and 7519 in 2020. Among the total deliveries, 9848 were done through cesarean section. On average, 28.30% of deliveries were conducted through cesarean section. There was a constant increase in cesarean deliveries in Kamla Nehru Hospital, Shimla from 2016 to 2020. A total of 1820 (28.1%) deliveries conducted through cesarean section in 2016, 1947 (29.78%) in 2017, 1964 (28.36%) in 2018, 1978 (26.95%) in 2019 and 2139 (28.45%) in 2020.

Conclusions: The study concluded that over 5 years there has been a rise in institutional deliveries in Himachal Pradesh. Trend analysis for the cesarean section has also shown an increasing trend.

KEYWORDS

Trends, cesarean section, deliveries, Kamla Nehru Hospital, Shimla

INTRODUCTION

In the past several years, a pattern of a rapid rise in cesarean delivery rates has been observed across the globe, and this increase has varied across the countries. In the Asian region, cesarean delivery rates have been observed in many countries, including India. Such a substantial rise in cesarean deliveries has become a significant public health concern.^{1,2}

The World Health Organization (WHO) strongly recommended that c-sections should not exceed 10% to 15% of the total deliveries conducted in any country across the globe. In years 2018-19, twenty percent of the total institutional deliveries were conducted through C-section in India, against the 18.7% in the previous years.^{3,4}

The cesarean delivery rate has been increased in the country in a majority of the twenty-two states according to the NFHS-5 survey in 2019-20. There has also been an increase in the number of institutional deliveries in this period and its fall-out could be the increase in Cesarean delivery rates. When medically indicated, cesarean delivery can effectively prevent both maternal and perinatal mortality as well as morbidity.^{5,6}

Although cesarean delivery can be a life-saving procedure, it should be performed only when it is medically indicated because complications that have adverse consequences for the mortality and morbidity of both the mother and the newborn are well reported in the past literature. Some of the poor health consequences in infants born through C-section include diabetes type 1, childhood obesity, impaired cognitive development, various respiratory disorders, acute lymphoblastic leukemia (ALL), increased risk of many neurodevelopmental disorders, and higher chances of autism in children. Cesarean delivery has been reported to be linked with an approximately four-fold rise in the risk of maternal mortality. In addition to this, unnecessary C-sections may be correlated with higher health care costs.^{7,8}

Even though cesarean delivery is an essential part of Comprehensive Obstetric and Newborn care for decreasing maternal and neonatal mortality & morbidity, there is a paucity of data regarding cesarean section rates in Shimla. Against this backdrop, this study was conducted to review the trends of Cesarean deliveries at Kamla Nehru Hospital associated with Indira Gandhi Medical College and Hospital from the year 2016 to 2020.

Objectives Of The Study

To study the trends of the Cesarean section at Kamla Nehru Hospital associated with Indira Gandhi Medical College and Hospital from the year 2016 to 2020.

Research Methodology

We conducted a retrospective descriptive review of all institutional deliveries conducted at Kamla Nehru Hospital between January 2016 to December 2020. Ethical clearance was obtained from concerned authorities of Kamla Nehru Hospital. The record was obtained from case records, compiled and entered in MS Excel, and analyzed using appropriate statistical tools in software Epi info V7 by applying appropriate statistical tests in terms of frequencies and percentage.

RESULTS

A retrospective review of Kamla Nehru Hospital records was conducted for a period of 5 years from January 2016 to December 2020. During the study period, all pregnant women who delivered at Kamla Nehru Hospital, Shimla, Himachal Pradesh were included in this study.

Table-1: Trend Of Deliveries Conducted In Kamla Nehru Hospital, Shimla

	2016	2017	2018	2019	2020	Total
Total Deliveries	6476	6539	6926	7339	7519	34799
Cesarean section	1820	1947	1964	1978	2139	9848
Percentage of CS	28.10	29.78	28.36	26.95	28.45	28.30

A total of 34799 deliveries were conducted in Kamla Nehru Hospital, Shimla from 2016 to 2020. Among the total deliveries, 9848 were through cesarean section. On average, 28.30% of deliveries conducted in Kamla Nehru hospital were done through cesarean section. (Table-1)



Figure-1: Trend Of Deliveries Conducted In Kamla Nehru Hospital, Shimla

Upon further review, it was found that there was a continuous increase in deliveries conducted at Kamla Nehru Hospital, Shimla from 2016 to 2020. A total of 6476 deliveries were conducted in 2016, 6539 in 2017, 6926 in 2018, 7339 in 2019 and 7519 in 2020. (Figure-1)

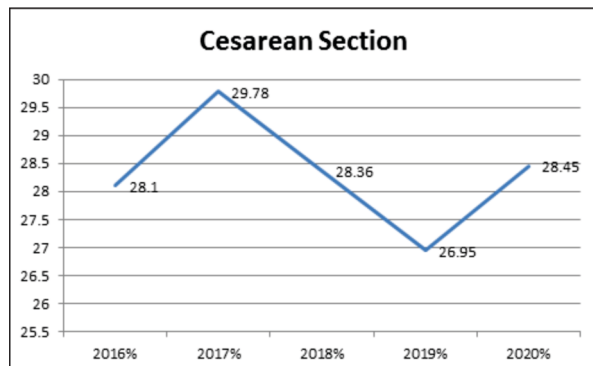


Figure-2: Trend of Cesarean Deliveries conducted in Kamla Nehru Hospital, Shimla

The present study found that there was a continuous increase in cesarean deliveries conducted in Kamla Nehru Hospital, Shimla from 2016 to 2020. A total of 1820 (28.1%) deliveries were conducted through cesarean section in 2016, 1947(29.78) in 2017, 1964(28.36) in 2018, 1978(26.95) in 2019, and 2139(28.45) in 2020. (Figure-2)

DISCUSSION

A C-section is a surgical procedure that is carried out to ensure the safety of mother and baby when vaginal delivery is not feasible (emergency CS) or when the treating physician considers that the danger to the mother and her child would be more with normal vaginal delivery (planned CS). The proportion of C-sections to the total births is considered one of the important indicators of emergency obstetric care (WHO, 2009). A figure below 5% implies that a major proportion of females do not have access to surgical obstetric care; on the other hand, a rate of more than 15% indicates utilization of the C-section for other than life-saving reasons (WHO, 1985; 1993).^{9,10}

In this concern, the rapid rise of CS rates throughout the globe has become a serious public health concern because many studies have found that the excessive rate of C-sections does not necessarily contribute to improved maternal health and gestation outcome. For example, based on a database from twenty-six countries, they found that there was no significant differences exist in maternal mortality or serious morbidity between the planned C-section and planned vaginal birth for breech presentation.¹¹

Table-2: Trend Of Deliveries Conducted In Shimla And Himachal Pradesh As Per NFHS

Variables	Shimla		Himachal	
	NFHS-5	NFHS4	NFHS5	NFHS4
Institutional births (%)	92.2	77.3	88.2	76.4
Births delivered by cesarean section (%)	12.9	16.4	21	16.7
Births in a public health facility that were delivered by cesarean section (%)	13.9	18.1	17.4	16.4

The present study found that there was a continuous rise in deliveries conducted in Kamla Nehru Hospital (KNH), Shimla from 2016 to 2020. A total 6476 deliveries conducted in 2016, 6539 in 2017, 6926 in 2018, 7339 in 2019 & 7519 in 2020. Likewise, in Himachal Pradesh, 88.2% of deliveries were institutionalized as per NFHS survey -5 in 2019-20, as against 76.4% in NFHS-4 in 2015-16. In district Shimla too, it rose from 77.3 to 92.2 percent.¹²

The present study demonstrated the continuous increasing trend of C-section rates in Kamla Nehru Hospital (KNH), Shimla from 2016 to 2020. A total of 1820 (28.1%) deliveries conducted through C-section in 2016, 1947(29.78%) in 2017, 1964(28.36%) in 2018, 1978(26.95%) in 2019 & 2139 (28.45%) in 2020. Similarly, in Himachal Pradesh, 21% of deliveries were through C-section as per NFHS Survey-5 in 2019-20, as against 16.7% in NFHS-4 in 2015-16. But in district Shimla, it was reduced from 1.6% to 12.9%.¹²

The present analysis indicated that the rate of C-section and institutional delivery both were rising trends. Institutional delivery assures improved maternal and child health care. In the institutional set up if complications arise during gestation or at parturition, the treating physicians resort to C-section for saving the lives of the mother and her child. Therefore, usually, there is a positive correlation between institutional delivery and the rate of C-section.¹¹

A report published in The Lancet in 2018 pointed out that the prevalence of maternal mortality and morbidity is higher after C-section than after normal vaginal birth. Also, it is found to be associated with more risk of ectopic pregnancy, uterine rupture, abnormal placentation, stillbirth & pre-term birth. Various studies mentioned that children born through C-section have less bacterial exposure, which in turn alters their gut microbiome diversity and immunity. Children also tend to have a higher incidence of allergy, asthma, and obesity.¹³

A rise in the rates of C-sections is a burden on the health system too. Unnecessary C-sections also put stress on the family and may complicate maternal & child health. Therefore, the decision to conduct a C-section must be taken carefully and should not be profit-oriented. Utilization of ANC, good doctor-patient communication, physician's commitment to reduce the rate of C-section, government's intention to develop improved health care infrastructure & strict vigil on the private health care setups may help to reduce the increased and rising rate of cesarean delivery.^{11,14}

CONCLUSION

The present study exhibits that over five years there is an increase in institutional deliveries which is heartening and encouraging. The study also found that there was a rise in the rate of c-sections. It appears that this institution (KNH) is in the early stages of a pattern of increasing cesarean deliveries. The policymakers must address the rising trends of avoidable cesarean deliveries.

Recommendation

There is an urgent requirement to monitor the deliveries conducted in hospitals. The government should inform practitioners and females of the unnecessary risks of non-medically indicated C-sections. Further research is also needed to understand the factors underlying the substantial rise in c-sections among private health setups in India.

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