

# Rising Incidence Of Caesarean Section In Rural Area In Haryana India: A Retrospective Analysis

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## Abstract

**OBJECTIVE-** To analyze the data of CS (Caesarean Section) in a rural medical college, its trends and main indications.

**METHOD-** Delivery records of all births in a rural medical college during 6 years period from Jan 2007 to Dec 2012 were examined and data of CS was collected. The trends and indications for CS over the 6 years were analyzed. Statistical analysis was done using Chi square test.

**RESULTS-** Over 6 years, annual number of deliveries in rural college increased from 465 to 691. CS rates increased from 31.0% to 51.2%. This rise in CS rate when compared with rise in total deliveries was found to be statistically highly significant ( $p=0.0002$ ). Commonest indication for CS was post CS pregnancies (24.3%-41.4%).

**CONCLUSION-** This study revealed that rise in CS rate in rural areas is statistically highly significant with post cesarean pregnancy being the largest contributor.

## INTRODUCTION

Although the mean world total caesarean section is estimated around 15% as recommended, there are enormous regional differences, for instance 3.5% in Africa and 40.5% in Eastern Asia [1]. Caesarean section rates seem to vary by country, states within a country, type of facility (private versus public) and the level and type of caregiver [2]. In many countries there has been sharp increase in CS rate in last few years especially in rural areas. The caesarean section rate rose from 3% to 39% in China from 1988 to 2008. The prevalence of CS increased fastest among rural, poor and less educated women. For example, while the rate and relative risk of caesarean delivery more than tripled among urban women during the 20-year span, they increased by a factor of 15 among women living in rural areas. [3] Both increased demand and increased supply have been proposed as drivers. On the demand side, women may request a caesarean section because they fear the consequences of vaginal delivery [4, 5].

In contrast, others emphasize that the rise in demand for caesarean section is largely stimulated by health-care providers and results from perverse financial incentives that encourage costly procedures [4,6,7]. This procedure has become an important source of revenue for hospitals and health-care providers [6,7,8]. Studies from across the world have shown that the caesarean section rate may be

influenced by factors other than the ability to pay, including fear of litigation, convenience, perceived safety, fear of substandard care and the opportunity for sterilization.[9,10]Government

## MATERIAL AND METHODS

Retrospective analysis of all the delivery records of births during 6 years period from Jan 2007 to Dec 2012 was done and data of CS was collected. The trends and indications for CS over the 6 years were analyzed. Statistical analysis was done using Chi square test [11].

## RESULTS

Over the years, annual number of deliveries increased 48.6% from 465 (2007) to 691 (2012) as shown in Table1. In the corresponding period, CS delivery rates rose from 144 (31.0%) to 354 (51.23%). Table 1 shows number of total deliveries and CS and its percentage. This rise in CS delivery was found statistically highly significant ( $p=0.0002$ ).

**Table 1**

Number of total deliveries and CS (%)

Yrs	Total Delivery	CS (%)
2007	465	144(31.0%)
2008	345	131(38.0%)
2009	280	140(50%)
2010	285	113(39.7%)
2011	595	275(46.2%)
2012	691	354(51.2%)

Table 2 shows most common indications of CS, their frequency and percentage contribution to total CS in the rural medical college. Common indications for CS were Post CS pregnancy, non-progress of labor, fetal distress, breech presentation, ante partum hemorrhage, cephalopelvic disproportion and severe PIH.

**Table 2**

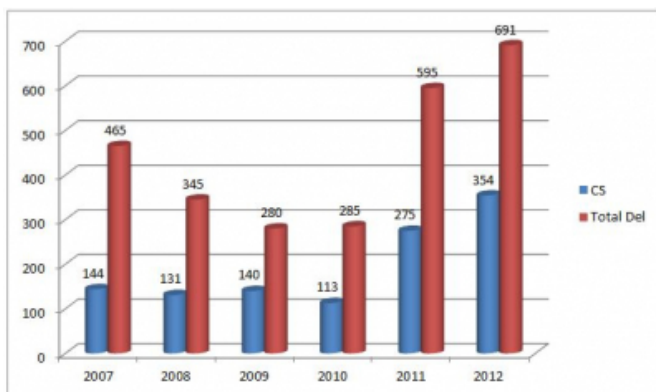
Commonest indications of CS and their frequency and percentage contribution

Yrs	Post CS	NPOL	Fetal Distress	Breech	APH	CPD	PIH	Others	Total CS
2007	35(24.3%)	27(18.7%)	24(16.7%)	20(13.9%)	10(6.9%)	8(5.6%)	11(7.6%)	9(6.3%)	144
2008	47(35.9%)	26(19.8%)	16(12.2%)	18(13.7%)	10(7.6%)	6(4.6%)	5(3.8%)	3(2.3%)	131
2009	50(35.7%)	27(19.3%)	13(9.3%)	16(11.4%)	9(6.4%)	9(6.4%)	8(5.7%)	8(5.7%)	140
2010	46(40.7%)	14(12.4%)	6(5.3%)	17(15.0%)	11(9.7%)	3(2.6%)	4(3.5%)	12(10.6%)	113
2011	114(41.4%)	41(14.9%)	27(9.8%)	22(8.0%)	29(10.5%)	11(4.0%)	10(3.6%)	21(7.6%)	275
2012	105(29.7%)	90(25.4%)	43(12.1%)	40(11.3%)	21(5.9%)	18(5.1%)	17(4.8%)	20(5.6%)	354

Chart 1 shows number of total deliveries and CS whereas Chart 2 shows percentage of CS as compared to total deliveries from 2007-2012 as shown in tables 1.

**Chart 1**

Number of total deliveries and CS



**Chart 2**

Percentage of CS from 2007-2012

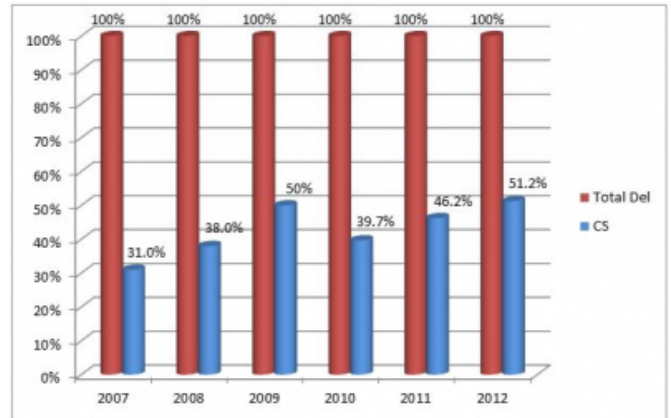
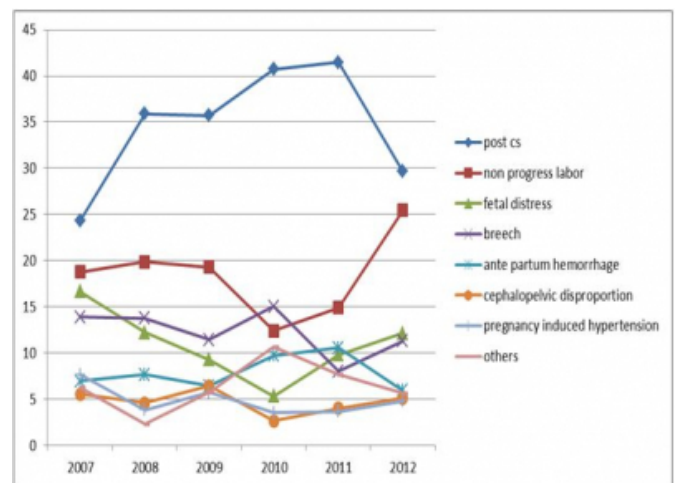


Chart 3 shows proportion of common indications of CS over the years as shown in Table 2.

**Chart 3**

Percentage contribution of common indications of CS from 2007-2012



**DISCUSSION**

Estimates of CS rates in India was 7.1 per cent in the year 1998 and there is 16.7% change in the rates annually in India [12] which is one of the highest in the world. A study in Madras showed an alarming caesarean section rate of 50 per cent [13].

In our study CS rate was 31.0%- 50.2%. It appears very high considering the 3.1% (rural) - 12.1% (urban) CS rate for Haryana [14]. In India, a large proportion of deliveries take place at home. So in large proportion of cases, though CS is required women cannot get it due to lack of essential facilities. The rural areas in most parts of India do not have facility for conducting even a normal delivery. The women having a delivery complication in the rural sector usually

turns up into the places where they are forced to go for normal delivery because of the absence of the CS facilities. Only 13.1% CHC in Haryana were posted with obstetrician and most of them are located in urban areas [15]. The delivery complications, which can be handled efficiently if known from the beginning, are many times over looked and when the situation becomes critical women are taken to the urban health posts for treatment, and many times it happens that the doctors have no other option except to go for caesarean section. This is a vital reason for which the caesarean section is more in some of institutional centres of India. In Haryana, complete Ante natal care is available only to 10.2% women in rural areas and safe delivery is available to only 48% [15]. The emergency obstetric care provided to the patients is not uniform over the geographical spread. It is different for urban and rural regions and it is even different for different states of India. In the states with high level of urbanisation and literacy and low maternal and fetal morbidity, CS rate is higher and variation between rural and urban area is much less e.g. Kerala (28.4% vs. 33.5%), Tamilnadu (19.8% vs. 26.0%).[14]

The commonest indication for CS in this series was post CS pregnancy (24.3%-41.4%) followed by non-progress of labour (12.4%-25.4%), fetal distress (5.3%-16.7%) and breech presentation (8%-15%). Other common indications were ante partum haemorrhage (5.9%-10.5%), cephalo pelvic disproportion (2.6%-6.4%) and pregnancy induced hypertension (3.5%-7.6%). Other studies have also shown these being the main indications of CS [16, 17, 18]. Maternal request was not found to be important factor in this study (0.0%-0.6%). However failure to give consent for trial of labour was one of the main factors for large number of CS in post CS group as seen in other studies also [17].

Incidence of post CS pregnancy contributing to CS is very high in this case as compared to other studies. However due to higher number of post CS pregnancies undergoing trial of labour there has been sharp decrease in CS proportion attributable to post CS pregnancies in 2012. Recent studies all over world have shown post CS pregnancy as the main factor in rise of CS. [16, 17]

Due to conscious effort by institution to reduce total number of CS, many cases of post CS pregnancies and other high risk pregnancies like PIH, twins, breech etc. were offered trial of labour leading to sharp increase in non-progress of labour cases attributing to total CS in 2012.

Though despite of conscious efforts by institution to reduce

the rate of CS, incidence is quite high as better transport facilities in the rural area have led to more and more complicated cases being referred to this institution as treatment of pregnant cases, deliveries and CS are totally free with low maternal and fetal morbidity and mortality.

### CONCLUSION

This study revealed that rise in CS rate in rural areas is statistically highly significant with post cesarean pregnancy being the largest contributor.

### References

1. Betran AP et al: Rates of caesarean section: analysis of global, regional and national estimates. *Paediatr Perinatal Epidemiol* 2007, 21:98-113.
2. Canadian Institute for Health Information: *Giving Birth in Canada: Providers of Maternity and Infant Care*. Ottawa, Canada: CIHI; 2004.
3. . Feng XL et al., Factors influencing rising caesarean section rates in China between 1988 and 2008, *Bulletin of the World Health Organization*, 2012, 90(1): 30–39
4. Hong X. Factors related to the high cesarean section rate and their effects on the “price transparency policy” in Beijing, China. *Tohoku J Exp Med* 2007; 212: 283-98
5. Zhang J, Liu Y, Meikle S, Zheng J, Sun W, Li Z. Caesarean delivery on maternal request in southeast China. *Obstet Gynecol* 2008; 111: 1077-82
6. Tang S, Li X, Wu Z. Rising cesarean delivery rate in primiparous women in urban China: evidence from three nationwide household health surveys. *Am J Obstet Gynecol* 2006; 195: 1527-32
7. Bogg L, Huang K, Long Q, Shen Y, Hemminki E. Dramatic increase of Cesarean deliveries in the midst of health reforms in rural China. *Soc Sci Med* 2010; 70: 1544-9
8. Long Q, Zhang Y, Raven J, Wu Z, Bogg L, Tang S, et al., et al. Giving birth at a health-care facility in rural China: is it affordable for the poor? *Bull World Health Organ* 2011; 89: 144-52
9. Harris A, Gao Y, Barclay L, Belton S, Yue ZW, Min H, et al., et al. Consequences of birth policies and practices in post-reform China. *Reprod Health Matters* 2007; 15: 114-24.
10. Mazzone A, Althabe F, Liu NH, Bonotti AM, Gibbons L, Sánchez AJ, et al., et al. Women’s preferences for caesarean section: a systematic review and meta-analysis of observational studies. *BJOG* 2011; 118: 391-9.
11. Preacher, K. J. (2001, April). Calculation for the chi-square test: An interactive calculation tool for chi-square tests of goodness of fit and independence [Computer software]
12. Stanton Cynthia K, Holtz Sara.A. 2006. “Levels and Trends in Caesarean Birth in the Developing World.” *Studies in Family Planning*; 37[1]: 41-48.
13. Sreevidya S, Sathiyasekaran BW. 2003. “High caesarean rates in Madras (India): a population-based cross sectional study.” *British Journal of Obstetrics and Gynaecology*. Feb; 110(2):106-11.
14. National Family Health Survey, 2005-2006, India
15. District Level Household and Facility Survey, 2007-2008, India
16. Stasieluk A et al, Is the epidemic of cesarean sections the result of more liberal indications, *Ginekol Pol*. 2012 Aug;83(8):604-8.
17. Barber Emma L et al, Indications contributing to the increasing caesarean delivery rate, *Obstetrics &*

Gynecology: July 2011, vol 118(1), 29-38

18. Toril Colas et al, Indications of caesarean deliveries in

Norway, Am J Obstet Gynecol 2003;188:864-70

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