

## Rising Rate of Caesarean Section in Urban Nepal

Sulochana Dhakal Rai,<sup>1</sup> Pramod Raj Regmi,<sup>1</sup> Edwin van Teijlingen,<sup>1</sup> Juliet Wood,<sup>1</sup> Ganesh Dangal,<sup>2</sup> Keshar Bahadur Dhakal<sup>3</sup>

<sup>1</sup>Faculty of Health and Social Sciences, Bournemouth University, UK, <sup>2</sup>Kathmandu Model Hospital, National Academy of Medical Sciences (NAMS), Kathmandu, Nepal, <sup>3</sup>Karnali Province Hospital, Surkhet, Nepal.

### ABSTRACT

The rising rate of caesarean section in urban Nepal is alarming as the lack of access for women in rural areas to emergency obstetric care, putting lives at risk. The latter is referred to as 'Too little too late'. At the same time, the sharp rise in caesarean section rates in cities presents the other extreme: "Too much too soon". The overuse of caesarean section causes harm, unnecessary costs, and misuse of health resources. Availability of private hospitals and increasing hospital childbirth may contribute to the rising rate of caesarean section. This article highlights the rising rate of caesarean section in urban Nepal.

**Keywords:** Caesarean section; emergency obstetric care; Nepal.

### INTRODUCTION

Caesarean section (CS) is a life-saving surgical procedure for delivering a baby when complications arise. The World Health Organization recommends a CS rate of 10-15%.<sup>1</sup> *The Lancet* series warns about the global rising CS rate, from 12.1% in 2000 to 21.1% in 2015.<sup>2</sup> Unnecessary excessive use of CS can harm maternal and child health. Whilst inadequate access to CS in low-income countries with rates below 10% also leads to unnecessary morbidity and mortality.<sup>2</sup> CS can cause adverse effect in subsequent pregnancy such as placenta previa, stillbirth and miscarriage. CS can cause many short-term and long-term health effects on mother and child.

### NEPAL SCENARIO

The CS rate is rising in Nepal, whilst huge inequalities exist between urban and rural and private and public hospitals (Table 1). *The Lancet* series described increasing CS use as being driven by more women giving birth in health facilities as well as the increasing use of CS within facilities and the privatisation of health services.<sup>2</sup> As expected, the CS rate is significantly higher in urban areas than in rural Nepal. Overall CS rate in Nepal was 9% in 2016 (7.1% in rural as compared to 19% in urban).<sup>3</sup> The Government of Nepal has been promoting safe motherhood through initiatives such as offering free delivery care and transportation incentive schemes to women who give birth in hospital. Hence, institutional births have increased from 35% in 2011 to 57% in 2016.<sup>3</sup>

Table 1. CS rates in hospital-based studies in Nepal.<sup>4-10</sup>

Hospital <sup>1</sup>	CS rate
@*BP Koirala Health Science Teaching Hospital	28.6%
⊕* Tribhuvan University Teaching Hospital	25.4%
\$* Kritipur Hospital	50.9%
@* Patan hospital	41.9%
⊕+Okhaldunga Community Hospital	9.5%
\$* Kathmandu Medical College hospital	48.81%
⊕# Mid-Western Regional Hospital	18.9%

\*Urban, +Rural, # Semi-urban, ⊕ Government, @ semi-government, \$ Private hospital

The CS rate is substantially higher in private hospitals than in government hospitals. However, there are wide disparities in access to CS between urban and rural women in Nepal. The CS rate is significantly higher in urban hospitals than in rural. The dramatic rise in CS could be linked to increased institutionalised childbirth, increased educational status of women and easily available private health services in Nepal.<sup>2</sup> In some hospitals these rising rates could be due to 'unnecessary intervention' and medicalisation.

### TOO LITTLE TOO LATE (TLTL) versus TOO MUCH TOO SOON (TMTS)

TLTL refers to lack of resources, low standard of quality of services and unavailability or withholding of care until too late. TMTS describes the overuse of emergency obstetric care as well as unnecessary use of non-

**Correspondence:** Sulochana Dhakal Rai, Faculty of Health and Social Sciences, Bournemouth University, UK. Email: sdhakalraj@bournemouth.ac.uk.

evidence-based interventions and over-medicalisation. TMTS causes harm, misuses of resources and increases health cost. CS is a well-known indicator of obstetric care having both TLTL and TMTS with disparities between and within countries.

Massive inequality of access to CS between urban and rural Nepal indicates the coexistence of TLTL and TMTS. Double burden occurs with very low numbers of CSs in poor remote rural areas and very high in wealthier urban areas. Poor, lowly educated and vulnerable women who are in need have less or non- access to emergency obstetric care in rural areas. This is due to underdeveloped local health systems in remote areas with limited provision of safe and timely CS procedure to save lives of mother and foetus. Whereas, easily available private hospitals and education of women have been suggested as factors for rising of rates of CS in urban settings. Over-medicalisation of childbirth may cause not only severe maternal and foetal outcomes but also financial burden to low-income countries like Nepal.

The worrying rise of CS rates in urban Nepal needs to be addressed urgently. The first general step as set out in *The Lancet* series is to develop scientifically tested and locally tailored multifaceted strategies to reduce CS and increase physiological birth for healthy women and babies. Additional steps should include: (a) legislation to ensure that doctors and hospitals get the same fee for attending both CS and vaginal deliveries; (b) targeting men to actively support their partners and act as their supporter as well as advocates for normal birth; (c) have on-call senior obstetricians who teach more junior doctors in how to keep CS rates low; and (d) expand the small but growing midwifery profession in Nepal to ensure 24 hours midwifery coverage in any hospital as midwives are the experts in physiological childbirth. At the national level provide adequate access to skilled birth attendance, appropriate foetal surveillance and assisted births or emergency obstetric care in rural areas.

## CONCLUSIONS

The evidence outlined here demonstrates that there is a genuine need to explore why CS rate is high in urban areas and how to make rational use of CS delivery in order to benefit women and their infants. We aware that Nepal is often good at developing appropriate legislation and protocols, but poor at its implementation. If any of our recommendations are accepted Nepal needs to ensure that implementation is appropriately policed and that sanctions are in place for hospitals and doctors widely missing CS targets (for example).

## REFERENCES

1. World Health Organization. Appropriate technology for birth. *Lancet*. 1985;2:436-7. [\[PubMed\]](#)
2. Boerma T, Ronsmans C, Melesse DY, Barros AJ, Barros FC, Juan L, et al. Global epidemiology of use of and disparities in caesarean sections. *Lancet*. 2018;392(10155):1341-8. [\[ScienceDirect\]](#)
3. Ministry of Health and Population and New ERA ICF International. Nepal Demographic and Health Survey 2016. Kathmandu: Ministry of Health and Population, New ERA, and ICF International, Calverton, Maryland, 2017. [\[FullText\]](#)
4. Chhetri S, Singh U. Caesarean section: its rates and indications at a tertiary referral center in Eastern Nepal. *Health Renaissance*. 2011;9(3):179-83. [\[Link\]](#)
5. Amatya A, Paudel R, Poudyal A, Wagle R, Singh M, Thapa S. Examining stratified cesarean section rates using Robson classification system at Tribhuvan University Teaching Hospital. *J Nepal Health Res Counc*. 2013;11(25):255-8. [\[PubMed\]](#)
6. Pradhan P, Shrestha S, Rajbhandari P, Dangal G. Profile of Caesarean Section in Kirtipur Hospital. *Nepal J Obstet Gynaecol*. 2014;9(2):51-4. [\[Link\]](#)
7. Pradhan B, Sarda Duwal Shrestha LR, Sharma P, Bhandary S. Increasing Trend of Caesarean Section in Patan Hospital. *J Gen Pract Emergency Med Nepal*. 2015;3(6):1-5. [\[Link\]](#)
8. Samdal LJ, Steinsvik KR, Pun P, Dani P, Roald B, Stray-Pedersen B, et al. Indications for Cesarean Sections in Rural Nepal. *J Obstet Gynecol India*. 2016;66(1):284-8. [\[Link\]](#)
9. Prasad A, Bhandari G, Saha R. Profile of Caesarean Section at Kathmandu Medical College. *J Nepal Health Res Counc*. 2017;15(2):110-3. [\[Link\]](#)
10. Dhakal KB, Dhakal S, Bhandari S. Profile of Caesarean Section in Mid-Western Regional Hospital in Nepal. *J Nepal Health Res Counc*. 2018;16(1):84-8. [\[Link\]](#)