



Socioeconomic differentials in caesarean section rates in Nepal

As potentially life-saving interventions, the examination of the access to and uptake of caesarean section services in Nepal—particularly the socio-economic disparities therein—can be immensely useful in gauging the country’s progress against maternal and child health targets

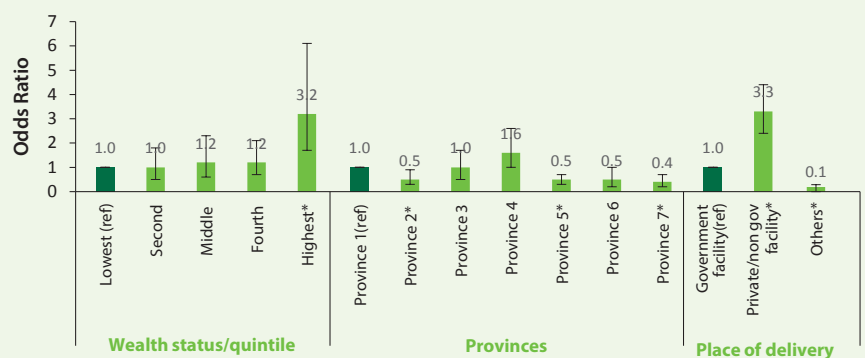
Complications during delivery can pose grave threats to the survival of both mother and child, and caesarean sections (CS) have come to comprise one of the most common surgeries performed in modern obstetrics to manage such complications. Indeed, a great many maternal and neonatal deaths and complications of labor could be reduced through improved access to CS^{1,3}.

Good health is among the fundamental rights that the constitution of Nepal guarantees its citizens. In line with that broad vision, the Nepal Health Sector Strategy (NHSS) 2015-2020 has envisioned ways to roll out universal health coverage in the country so as to ensure all Nepalis have access to the kind of healthcare they need at any given time, accompanied by the necessary financial protection. And the availability and accessibility to Basic and Comprehensive Emergency Obstetric and Neonatal Care (B/CEONC^a)—which includes CS services—constitutes the key priorities of the NHSS’ Implementation Plan.

It is important to note, however, that unless medically justified, CS as an obstetrical intervention can be risky. Although the international health community has long considered 10-15 percent to be the ideal rate for CS at the population level⁴ the World Health Organization (WHO) emphasizes that medical indication should be present for the procedure to be performed, and does not recommend a target figure for countries to achieve.

In any case, it is clear that given its potential to save lives, access to and uptake of CS services can be immensely useful in gauging progress against maternal and child health targets. And so, by unpacking the available evidence related to CS deliveries in Nepal—and examining the socio-economic disparities therein—this policy brief seeks to recommend a number of relevant actions for planning and provision of improved, equitable CS services.

Figure 1: Association between CS delivery and selected socio-economic characteristics of women



Note: *p<0.05, 1.0=reference category; Error bars present 95% confidence intervals

The numbers reveal

- CS deliveries were twice as prevalent in urban areas as compared to rural areas (Table 1).
- CS deliveries comprised one in four (24 percent) births in women with higher education as compared to one in 20 (5 percent) in women with no education.
- The CS rate was considerably lower in the mountain region.
- Nearly 13 percent of women with four or more antenatal care (ANC) visits undergo CS, which is three times higher than in women with no or less than four ANC visits.
- The CS rate was higher in *Newar* compared to other caste groups.
- Compared to women in the lowest (poorest) wealth quintile, more women in the highest (richest) wealth quintile (28 percent) opted to undergo CS.
- CS deliveries accounted for only 2 percent of total deliveries in Province 6, as compared to 17 percent each in Provinces 3 and 4.
- The CS rate was higher for deliveries in private facilities (35 percent) than in public institutions.
- Results from multivariable analysis shows that women in the highest wealth quintile; women in Provinces 2, 5 and 7 (compared to Province 1); and women delivering in private health facilities (versus public) were significantly more likely to deliver via CS (Figure 1).

Using Nepal Demographic and Health Survey 2016 data, multivariable logistic regression analysis was performed to explore the socio-economic factors associated with ‘CS delivery’ as an outcome. All potential factors (Table 1), including mothers’ age were included in the analysis.

a. Emergency obstetric and newborn care is the timely care given to women and newborns experiencing complications during delivery.

Table 1: % of deliveries using C-section in the past five years

	%	N
Women's education*		
No education	4.5	1,733
Primary	5.6	1,019
Secondary	9.4	1,617
Higher	24.4	691
Place of residence*		
Urban	11.7	2,730
Rural	5.9	2,330
Ecological zone*		
Mountain	2.6	361
Hill	11.2	1,911
Terai	8.4	2,789
Wealth status/quintile*		
Lowest	2.4	1,082
Second	4.2	1,072
Middle	6.8	1,121
Fourth	9.4	1,036
Highest	28.2	748
Provinces*		
Province 1	12.7	819
Province 2	5.0	1,367
Province 3	17.4	813
Province 4	16.7	388
Province 5	6.4	899
Province 6	2.2	338
Province 7	3.1	437
Antenatal care visit*		
None	4.1	236
1-3	4.4	988
4+	12.8	2,773
Place of delivery*		
Government facility	12.1	2,183
Private/non-gov facility	34.8	548
Others	0.6	232
Caste group*		
<i>Dalit</i>	5.4	695
<i>Janajati</i>	8.1	1,395
Other <i>terai</i> caste	7.1	1,021
Muslim	5	358
<i>Newar</i>	26.8	178
<i>Brahmin/Chhetri</i>	11.3	1,396
Total	9.0	5,060

*chi square $p < 0.05$

RECOMMENDATIONS

- Province 1, 3 and 4—which both have CS rates over 10 percent—need detailed review and analysis to identify drivers of CS. At the population level, CS rates higher than 10 percent are not necessarily associated with better perinatal outcomes⁴, and have even been linked to increased risk of fetal and neonatal mortality and neonatal morbidity, compared to spontaneous vaginal delivery.
- The low CS rate in Province 2 and mountain region could be interpreted as a result of poor access to CS services. However, in order to truly understand the drivers of CS, it is essential to monitor and compare CS rates in the same setting over time, and between different settings. The WHO recommends Robson's Classification as a tool in this regard, one that should be introduced in all hospitals offering CEONC services.
- Literature shows a dependent relationship between ANC checkups and CS—indicating that the number of ANC visits, motives/influence of doctors and care providers, and type of institution can affect choice of delivery method. A closer look is thus warranted into the counseling provided during subsequent ANC visits, particularly in private hospitals, to ensure that recommendations to opt for CS are not being driven by higher reimbursement rates of the procedure, as compared to normal delivery through the *Aama* Programme or the Social Health Insurance scheme. A critical review of beneficiaries of these latter programmes should then be undertaken in light of the findings.
- Higher CS rates among the wealthier, more educated, and urban women could be related to higher paying capacity, empowerment and ability to make decision as compared to poorer, uneducated women from rural areas. Although a life saving measure when medically justified, inequitably low CS rates in socio-economically disadvantaged sub-groups is concerning. To lower such deprivation among women irrespective of their socio-economic background, targeted interventions and policies tailored to inequity patterns are essential.
- Maternal deaths must be further analyzed to identify potential association with CS deliveries.

The contents of this brief do not necessarily reflect the official views of the Government of Nepal, Ministry of Health and Population and the UK aid.

REFERENCES

- Ministry of Health and Population. (2015). Nepal Health Sector Strategy (2015-2020). Kathmandu: Ministry of Health and Population.
- Ministry of Health, Nepal; New ERA; and ICF. (2017). Nepal Demographic and Health Survey 2016. Kathmandu, Nepal: Ministry of Health, Nepal.
- Subedi, S. (2012). Rising rate of Cesarean Section- A Year Review. J Nobel Med Coll, 1(2), 72-6.
- World Health Organization Human Reproduction Programme. (2015). WHO statement on caesarean section rates. Reproductive Health Matters, 23(45), 149-150.