

Within country inequalities in caesarean section rates: observational study of 72 low and middle income countries

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Abstract

Objective To provide an update on economic related inequalities in caesarean section rates within countries.

Design Secondary analysis of demographic and health surveys and multiple indicator cluster surveys.

Setting 72 low and middle income countries with a survey conducted between 2010 and 2014 for analysis of the latest situation of inequality, and 28 countries with a survey also conducted between 2000 and 2004 for analysis of the change in inequality over time.

Participants Women aged 15-49 years with a live birth during the two or three years preceding the survey.

Main outcome measures Data on caesarean section were disaggregated by asset based household wealth status and presented separately for five subgroups, ranging from the poorest to the richest fifth. Absolute and relative inequalities were measured using difference and ratio measures. The pace of change in the poorest and richest fifths was compared using a measure of excess change.

Results National caesarean section rates ranged from 0.6% in South Sudan to 58.9% in the Dominican Republic. Within countries, caesarean section rates were lowest in the poorest fifth (median 3.7%) and highest in the richest fifth (median 18.4%). 18 out of 72 study countries reported a difference of 20 percentage points or higher between the richest and poorest fifth. The highest caesarean section rates and greatest levels of absolute inequality were observed in countries from the region of the Americas, whereas countries from the African region had low levels of caesarean use and comparatively lower levels of absolute inequality, although relative inequality was quite high in some countries. 26 out of 28 countries reported increases in caesarean section rates over time. Rates tended to increase faster in the richest fifth (median 0.9 percentage points per year) compared with the poorest

fifth (median 0.2 percentage points per year), indicating an increase in inequality over time in most of these countries.

Conclusions Substantial within country economic inequalities in caesarean deliveries remain. These inequalities might be due to a combination of inadequate access to emergency obstetric care among the poorest subgroups and high levels of caesarean use without medical indication in the richest subgroups, especially in middle income countries. Country specific strategies should address these inequalities to improve maternal and newborn health.

Reviewer: 4 - Patient and Public Reviewer

Comments:

It's an interesting paper. The main conclusions appear to be that education, wealth and living standards are connected to an increase in the number of c-sections. This is not an unexpected result as in most of the countries access to good health care is probably limited to those who can afford it unless a similar free health care system is in place. It's a difficult area to do research in as it would be hard to define the number of medically necessary c-sections vs those based on maternal request. The research results are important as it may help countries establish guidance on how to implement C section deliveries for those in need rather than those that are selective. This may plausibly lead to a decrease in maternal death rates.

I'm a little concerned that the approach chosen by the researchers to access household wealth in each of the countries may be difficult to interpret as some items may be more readily available in some countries more than others. This could bias the results. I also wonder if the data maybe out of date as the analysed surveys finished three years ago in 2014.

I think that patients could have been involved in the analysis and dissemination of the results and this may have made the paper easier to understand and simplified the use of language within the text.

I don't think that the data based on a rural or city based setting is very useful as this is probably due to limited access to local hospitals and the reliance on local midwives or family care. There is a lack of discussion about how patients actually receive care in this type of setting and how far they would need to travel to receive hospital care. It's also possible that the dates of the pregnancy and estimated due date are not known precisely in this environment.

I think that it will still be very difficult for the countries involved in the study to

implement any changes in their medical care based on the results of the study as I suspect the C section rates are linked to access to hospital care, wealth and where the person is living.

Additional Questions:

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