

Frequently Asked Questions (FAQs)

“Trends in selective abortions of girls in India: analysis of nationally representative birth histories from 1990-2005 and census data from 1991-2011”

Disclaimers:

This study is concerned with estimating the number of selective abortions of girls, and *not* with their causes or long term consequences on society.

The aim is to provide information only, not recommendations to governments, organizations or individuals.¹

Q. What is this study about?

A: This study is about the selective abortion of girls in India. The 2011 Indian census revealed about 7.1 million fewer girls than boys aged 0-6 years; a notable increase in the gap of 6.0 million fewer girls recorded in the 2001 census, and the gap of 4.2 million fewer girls recorded in the 1991 census. The child sex ratio of girls per 1000 boys at ages 0-6 years has fallen over the last two decades. Additionally, it has also been established that the sex ratio for the second birth, when the firstborn is a girl, is much lower than if the firstborn is a boy.

This study analyses the trends in conditional sex ratios between 1990 and 2005, and estimates the absolute number of selective abortions of girls in India over the last three decades.

Q. How did the study analyse trends in conditional sex ratios?

A. This study examined birth histories among 0.25 million (2.5 lakh) births from 1990 to 2005 using the National Family Health Survey (NHFS). The survey is a random sample of the whole of India, so the results reflect what is happening overall in the country. The method used was simple: examine the number of girls or boys who are second or third births, and the extent to which the gender of these births varies according to the gender of any firstborn child. In most high income countries, observed sex ratios at birth are 950 to 975 girls per 1000 boys, and this varies little by birth order or by the gender of previous births.

Q. How did this study estimate the number of selective female abortions in India?

A: The absolute totals of missing girls were estimated from the seven years of children at ages 0-6 years in the 1991, 2001 and 2011 censuses (corresponding to children born in 1984-1990, 1994-2000, and 2004-2010, respectively). For each of these groups, we calculated the expected number of girls using a sex ratio at birth of 950 to 975 girls per 1000 boys, and compared to the number of girls actually enumerated in the censuses. The estimate of excess girl deaths was based on annual infant mortality rates for girls and boys at ages 0-1 years from the United Nations, and adjusted for the extra girl deaths at ages 0-6 years that would be expected had more girls been born under conditions of no selective abortion.

Q. Who carried out the study, and who were the funders?

¹ Note on Indian and Western numbers:

1 lakh = 100 thousand, 10 lakh = 1 million, 1 crore = 10 million

A: The study was carried out by a team of researchers from partner institutions – Centre for Global Health Research (CGHR, Li Ka Shing Knowledge Institute, and Dalla Lana School of Public Health, University of Toronto, Canada), Post Graduate Institute of Medical Research and Education, Chandigarh, India, and International Institute for Population Sciences, Mumbai, India.

The study was funded by the US National Institutes of Health, International Development Research Centre, Canadian Institutes of Health Research, and the Li Ka Shing Knowledge Institute. The funders had no say in the design of the study or in interpreting the results and writing the paper.

Q. Which data were used in this study, and how were they collected?

A: The study used data from two sources; census of India 1991, 2001 and 2011, and three rounds of the National Family Health Survey (NFHS).

The Indian census is a complete enumeration of all living persons in the country, regardless of nationality, and was conducted over a three week period in February of 1991, 2001 and 2011. The census enumerates the date of birth for each person, usually by interviewing the head of the household. Enumerators have strict field instructions and make special efforts to enumerate girls and boys equally, and to minimise age misclassification.

The NFHS is a large-scale, nationally representative survey of rural and urban Indian households. Female interviewers obtained a complete birth history from every woman surveyed in each NFHS, including the date of birth, gender, birth order, and mortality for all of her children, as well as her religion and education level. About 90 000 to 125 000 women aged 15-49 years were interviewed in each of the three rounds of the NFHS. For the present study, a total of 265 516 birth histories were analysed, with a total of 78 449 firstborns, 70 321 second order births, and 48 243 third order births recorded.

Q. What are the key findings of this study?

A: The key findings of the study are:

- The “conditional” sex ratio for second order births when the firstborn was a girl fell from 906 girls per 1000 boys in 1990, to 836 in 2005; an annual decline of 0.5%.
- By contrast, no declines were noted in the sex ratio for second order births if the firstborn was a male, or for firstborns.
- Declines in the sex ratio for second order births when the firstborn was a girl were much greater in mothers with 10 or more years of education than in mothers with no education.
- The sex ratio for second order births when the firstborn was a girl fell sharply among the 20% of the richest Indian households, in contrast to the poorest 20%.
- Declines in the sex ratio over time, for second order births when the firstborn was a girl, were slightly greater in urban than in rural areas, and did not differ between Hindu and Muslim households.
- Between 2001 and 2011, 72% (405) of India’s 563 districts (for which data were available) showed any declines in the child sex ratio, and 49% (278) had declines

greater than the national average decline of 1.4%. Only 28% (158) of districts showed no change or increases in the child sex ratio.

- In the same period, the number of districts with a natural sex ratio (950-975 girls per 1000 boys) decreased by half, while the number showing a considerable gap between boys and girls (sex ratio less than 915 girls per 1000 boys) grew to represent 40% of all current districts.
- The estimated number of selective abortions of girls rose from 0 - 2.0 million in the 1980s, to 1.2 - 4.1 million in the 1990s, and to 3.1 - 6.0 in the 2000s.
- Selective abortions of girls totalled about 4.2 to 12.1 million from 1980-2010, with a greater rate of increase in the 1990s than in the 2000s.
- Each 1% decline in child sex ratio at ages 0-6 years implied 1.2 to 3.6 million more selective abortions of girls.
- Most of India's population now lives in states where selective abortion of girls is common.

Q. How do the estimates of selective abortions of girls in this study compare with previous numbers?

A: The current estimates are more conservative than those from birth histories in the Sample Registration System (SRS; a large, continuous, nationally representative demographic survey of over 1 million homes). Specifically, SRS-based estimates of annual selective abortions of girls were 0.59-0.74 million in 1997 and 0.48-0.67 million during 2001-2003. However, our calculation of 4-12 million selective abortions of girls from 1980-2010 is consistent with earlier estimates.

Q. Are the estimates of this study more reliable than previous estimates?

A: Yes. To calculate absolute totals of missing girls, this study used actual enumerated children in the censuses. The census omission rates are small, and do not vary greatly by gender, which might have otherwise resulted in spurious sex ratios. To analyse trends in conditional sex ratios, we used data from the National Family Health Survey (NFHS). This sample is also large, based on 265 516 birth histories over the 3 rounds of the survey, and provides trends over 15 years, which minimizes uncertainty from yearly variations.

Q. Why does this study not estimate selective abortion of male foetuses in India?

A: India is traditionally a male dominated society, which is increasingly intensified by the further selective abortion of girls. Due to the strong son preference, it is very unlikely that families would not want a son, or selectively abort male foetuses.

Q. What are some limitations of this study?

A: The limitations of this study are:

- The sex ratios derived from the National Family Health Survey (NFHS) are based on birth histories, which vary considerably from year to year. This is in part due to random variation from only a few hundred or thousand births, as well as possible

systematic under-counting of girls and problems recalling past birth histories during the household interviews.

- We used child mortality rates to calculate the contribution of selective abortions of girls to the measured gender imbalance at ages 0-6 in the censuses. Therefore, the accuracy of the child mortality rates impacts our analysis.
- The expected sex ratio range at birth of 950 to 975 girls per 1000 boys is based on observations in Europe and North America, and might not apply to Asian populations for unknown biological reasons. However, such sex ratios at birth were documented in some Indian states as recently as 1991.
- Our birth data were only until 2005. However a district-based household survey from 2005-2007 found similar conditional sex ratios for births following a firstborn female. Thus, selective abortion remains common among the most recent cohorts of children captured in the 2011 census.

Q. The study uses provisional data from the 2011 census. Will final data alter the estimates of selective abortions of girls?

A: No. The results of 2001 census indicated that the provisional and final totals differed by only 0.17%. We do not expect a substantial change compared to final 2011 census data.

Q. Does this study provide estimates at the district level?

A: The study provides estimates of selective abortions of girls for India as a whole, and does not give detailed data by states or districts. Nonetheless, we demonstrate that by 2011, the child sex ratio has fallen sharply (that is, below 915 girls per 1000 boys) in 232 districts (41% of all districts providing data). Further, 49% (278) of the districts had declines greater than the national average decline of 1.4%. Only 28% (158) of districts showed no change or increases in the child sex ratio.

Q. Is selective abortion legal in India?

A: Abortions have been legal in India since 1971. Selective, gender-based abortions have been illegal since 1994.

Q. What regulations have been introduced in India to prevent selective abortions?

A: The Indian government implemented a Pre-Natal Diagnostic Techniques (PNDT) Act in 1996 to prevent the misuse of techniques for the purpose of prenatal sex determination leading to selective abortion of girls. It is unlikely that this Act has been effective nationally, as few health providers have been charged or convicted. This is not surprising given that most primary care occurs with unregulated private providers.

However, the 2011 census noted that child sex ratios at ages 0-6 years had increased somewhat in the states of Haryana and Punjab, and had stabilised in Gujarat. It might be that the PNDT Act, plus the recent public attention to the selective abortion of girls, has slightly reduced the practice in some settings.

Additional materials are available at www.cghr.org/girls
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