

India's child sex ratio: worsening imbalance

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The evidence

The 2011 census has once again brought into focus the deficit of girls in India. While the census of 2001 had revealed that the child sex ratio, computed as the number of girls per 1,000 boys in the segment aged 0-6 years, had fallen to 927; in 2011 it has come down further to 914 (1). A low sex ratio among children can be due to one or both of two factors. First, the sex ratio at birth may be lower (that is, dominated by males) than normal. Second, female mortality may be higher than male mortality during infancy and early childhood. Sex-selective under-enumeration can also create an imbalance in the enumerated population; however, with improvement in the quality of age-sex reporting in recent census enumerations, this issue has become less important (2).

Demographic analysis allows an assessment of the relative influences of imbalance in sex ratio at birth and of excess female child mortality on the child sex ratio. Utilising information on sex-specific mortality during early childhood, it can be shown that the sex ratio of 914 for ages 0-6 in 2011 implies a sex ratio at birth of 919 during the seven-year period preceding the census, that is, roughly during the period 2004-10. Thus, if the normal ratio at birth is assumed to be 952 (equivalent to 105 males per 100 females as seen in many populations), the Indian sex ratio at birth in recent years has been lower by 33 points. Excess female mortality during early childhood further reduces the child sex ratio by five points to 914, so that the total deficit from the normal level of 952 at birth is 38 points. Of course, sex ratio at birth in many populations does vary around the value of 952, but 919 is certainly outside the normal range. Clearly, the principal factor behind the child sex ratio being so adverse to females in India is the low sex ratio at birth; high early childhood mortality of girls aggravates the imbalance further. Such a low sex ratio at birth implies that in India about 400,000 sex-selective abortions have taken place annually in recent years (author's estimate), ie 3.6% of all female foetuses have been aborted in the country; other estimates are also around this value (3).

That the sex ratio at birth has become quite adverse to females was known even before the 2001 census; and the practice of sex-selective abortions (of female foetuses) was recognised as the direct cause of this. India's Sample Registration System (SRS) has been releasing data on the sex ratio at birth in India as a whole and in large states as three-year averages regularly. In fact, the SRS estimates of the sex ratio at birth are even lower than the census results indicate. Trends since 2001 show that

the ratio had fallen to an unprecedented low of 880 in 2003-05, recovering somewhat after that (4); it was reported to be 906 in 2007-09 (5). Overall, the ratio had been around 900 over the entire decade, below the level of 919 indicated by the 2011 census. Some under-registration of female children in the SRS may be responsible for the ratios being slightly lower than the census-based estimates. The 2011 census results, thus, do not come as any surprise. However, in the media, among policymakers, and in civil society, the census draws much greater attention than the SRS does, and the results of the 2011 census have brought the issue of the sex ratio imbalance back into public debate.

A deficit in the female population has long been observed in Indian censuses (6). In the past, under-enumeration of women and excess female mortality were the principal causes, along with some evidence of female infanticide. On the other hand, the present deficit is chiefly due to sex-selective abortions. There has long been a strong preference for sons in India. This is now being actualised using the technology of sonographic scans to detect the sex of a foetus and abort female foetuses. Moreover, there seems to be a strong *avoidance of daughters*, especially after one daughter. Detailed analyses of survey data have revealed that the sex ratio at the second birth for couples who already have a daughter is much lower than for those whose first child is a son (3).

The regional pattern

The national average, bad as it is, masks acute imbalances in some states. The northern and western regions of India are characterised by low sex ratios, whereas the eastern and southern regions show near normal ratios. Punjab and Haryana have long had very low sex ratios, followed by states in the northern and western regions—Delhi, Himachal Pradesh, Rajasthan, Gujarat and Maharashtra. The 2011 census shows that the low ratio persists in this region. There has been some improvement in Punjab and Haryana in the last few years, yet these states continue to have sex ratios below 850, the lowest in the country. Moreover, the small improvement in these two states is undone by deterioration in many other states, notably in Jammu and Kashmir which has now joined the group of low sex ratio states, and in Maharashtra and Rajasthan. In all of these, low sex ratio at birth is the major contributor to the imbalance in the child sex ratio. In Punjab and Haryana, sex-selective abortions amount to over 10% of female births and the figures in these two states were even higher, until recently. While the broad regional pattern is recognised, it must be

noted here that some pockets deviate from it. For instance, Tamil Nadu, in general, shows a fairly normal sex ratio, but some parts of the state have long had a poor sex ratio

The intensity of sex-selective abortions appears to be greater in the more prosperous areas. Punjab, Haryana, and Delhi are relatively high income states. In Maharashtra, too, the sex ratio has been poor in the rich sugarcane belt in the western region (7). Does prosperity then accentuate the preference for sons and the avoidance of daughters? Or does it facilitate putting this preference into effect (8, 9)? Prosperous regions are more likely to have scan centres than poor regions, since private service providers would prefer to open them in areas where the population has the capacity to pay. There is evidence that in some large states the density of scan centres is indeed greater in the relatively prosperous areas (for example, in western Maharashtra) than poorer ones (10). However, the link between the density of scan centres and the child sex ratio or sex ratio at birth is not very strong. Southern Uttar Pradesh has poor availability of scan facilities, but also poor sex ratios. On the other hand, prosperous portions of the southern and eastern states have relatively balanced sex ratios.

The regional divide brings into debate the role of cultural factors. The north-south divide has long been recognised in India; with greater female autonomy in the south than in the north. But in the case of sex ratio, the divide seems to be more that of 'north and west' vis-à-vis 'south and east'. A preference for sons is plausibly influenced by cultural factors and records of the first half of the 20th century did exhibit strong signs of such a preference in the north-western parts of India (6). Female infanticide was also practised in some parts of the country in the past. But that was before the advent of the modern technology of pre-natal sex detection. A simple and seemingly legitimate way has now been adopted by many to achieve the desired sex composition, or more precisely, to avoid an undesired combination such as two daughters.

What is disturbing is that the practice of sex selection seems to have become contagious, as seen by the deterioration in the ratio in many states that had hitherto near-normal ratios. Furthermore, in Maharashtra and Rajasthan, while the imbalance was earlier seen in some sub-regions, now more areas adjoining the old ones show such an imbalance. To some extent, this has occurred in Uttar Pradesh, Madhya Pradesh and Tamil Nadu as well. The small gains in curbing sex selection made in Punjab and Haryana have been negated by the rise in sex selection in other areas, adjoining, as well as new.

It is necessary to note that sex selection of a similar or even higher order has also been seen in some other countries of Asia (11). South Korea experienced this quite early but has successfully overcome the problem. China, Vietnam, and some countries in the Caucasus region have exhibited sex ratio imbalances (12) and though some improvement has been seen, especially in China (13), the ratio continues to remain quite unfavourable to females. That this iniquity is prevalent in other populations is, of course, no solace for India.

What has been done and what is needed?

The implications of the continuing sex imbalance for marriage, family and society need no elaboration and have already been felt in some areas (14). The basic problem has been recognised in India and legal measures have been adopted to stop pre-natal sex detection and thus to prevent sex selection. The Pre-conception and Pre-natal Diagnostic Techniques Act was brought in, as early as 1994, to curb this practice. In spite of this, the 2001 census showed a poor sex ratio. The Act was amended (15) and strengthened in 2003 and yet the 2011 census now shows that the child sex ratio has worsened. Clearly, curbing the practice of sex selection requires much more than legal steps. It is true that during the last two decades there have been many campaigns against the practice of sex selection, by governments as well as non-government, political, and religious organisations, and civil society in general. The recent improvement seen in Punjab and Haryana is, at least partly, attributable to such campaigns in conjunction with the Act. But the change has been small. Besides, the accentuation of the practice of sex selection in adjoining areas and adoption in new areas implies that there is a long way to go. Both the social campaigns and the implementation of the Act have fallen seriously short of the requirement.

When there is broad social sanction for a practice, merely enacting laws is rarely adequate. It is known that child marriages continue to take place in many parts of the country on a large scale in spite of the Child Marriage Restraint Act. The reality is that there is a very strong son preference within the society. For long, the need of a son to continue the family line and perform rituals has been cited as a reason for this preference. Dowry and heavy expenditure on the marriages of daughters lead to avoidance of daughters. Besides, with some exceptions, living arrangements in India are virilocal and in their old age parents prefer to live, or expect to live, with sons, rather than with married daughters; and sons are looked upon as the primary providers of support in old age. In fact, there has traditionally been social disapproval of parents residing with married daughters. Gender bias in child rearing persists. The relatively higher child mortality among girls compared to boys shows that there is neglect of the girl child in healthcare. Removal of the gender bias would certainly eliminate the desire for sex selection as well as the neglect of girl children. This is not to say that the preference for sons justifies sex-selective abortions. In fact, the practice of sex selection is intrinsically gender-biased. This is a major challenge that India has to confront in the present decade.

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Polio programme: let us declare victory and move on

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Abstract

It was hoped that following polio eradication, immunisation could be stopped. However the synthesis of polio virus in 2002, made eradication impossible. It is argued that getting poor countries to expend their scarce resources on an impossible dream over the last 10 years was unethical.

Furthermore, while India has been polio-free for a year, there has been a huge increase in non-polio acute flaccid paralysis (NPAFP). In 2011, there were an extra 47,500 new cases of NPAFP. Clinically indistinguishable from polio paralysis but twice as deadly, the incidence of NPAFP was directly proportional to doses of oral polio received. Though this data was collected within the polio surveillance system, it was not investigated. The principle of primum-non-nocere was violated.

The authors suggest that the huge bill of US\$ 8 billion spent on the programme, is a small sum to pay if the world learns to be wary of such vertical programmes in the future.

"For of all sad words of tongue or pen, the saddest are these: 'It might have been!'"

John Greenleaf Whittier (1807-1892)

January 12, 2012, marked a significant milestone for India. It was the first anniversary of the last reported wild polio case from India. Keeping the country free of polio for a whole year was a feat that is a tribute to the Government of India and its 2.3 million vaccinators, who visited over 200 million households to ensure that the nearly 170 million children (under five years in age) were repeatedly immunised with oral polio vaccine

(OPV) (1). India's programme has largely been self financed. The country has thus far spent more than Rs 120 billion (US\$2.5 billion US\$ 1 = Rs 50) on polio eradication after the programme started here in 1994 (2). The \$2.5 billion spent by India must be seen against \$2 billion spent by the United States of America on world-wide polio eradication (3), the \$1.3 billion expended by Bill Gates (4), and the \$0.8 billion raised by the loudest voice for polio eradication - Rotary International - over the last 20 years (5).

The celebrations of January 12, 2012 would have been accompanied by a collective, massive sigh of relief because a new 'name and shame' policy has been adopted by the World Health Organisation (WHO), apparently without approval (6), to boost the eradication effort. In this vein, the acronym PAIN has been used, while referring to the polio-endemic countries of Pakistan, Afghanistan, India and Nigeria. While the exact origin of this oft-repeated acronym is unclear (7,8), India will be happy to be rid of the opprobrium.

Internationally, supporters of eradication desperately needed a victory in India to drum up enthusiasm, at a time when commitment to the programme had been flagging, and funding was rapidly drying up. With a \$410 million shortfall in the funds available, this gap threatens to undermine eradication efforts (9). While India chalked up a year of being polio free, four other countries, Angola, Chad, the Democratic Republic of Congo and Sudan, have had year-long outbreaks. Another 13 countries have had recent infections - eight in Africa, along with Nepal, Kazakhstan, Tajikistan, Turkmenistan and Russia (10). The ethics of spending so much on polio eradication has been challenged by Richard Horton, editor of *The Lancet* (11), and Arthur L