Factors Affecting Sex-Selective Abortion In India

Birth histories collected during India’s first and second National Family Health Surveys (NFHS-1 and NFHS-2) show an unusually large proportion of male births in some population groups, which suggests that female fetuses are being aborted. Normally, about 105 boys are born for every 100 girls in a population, resulting in a sex ratio at birth of about 1.05. In India as a whole, the sex ratio at birth was 1.06 during 1978–92, the 15-year period covered by NFHS-1. It rose to 1.08 during 1984–98, the 15-year period covered by NFHS-2, but this is still not much higher than the biological norm.

There is, however, considerable variation in the sex ratio at birth among certain population groups. The sex ratio at birth is particularly high in certain western and northern states, in families that have daughters but no sons, and among women with a high level of education and media exposure. In a few states, the sex ratio at birth is unusually low in families that have sons but no daughters, indicating some selective abortion of boys. This issue of the NFHS Bulletin describes how geographic, socioeconomic, and demographic factors affect sex-selective abortion in India and goes on to assess some likely trends.

Sex-selective abortion: The current situation

In India as a whole, an estimated 5 to 6 million abortions occur annually. Abortion was legalized in 1971 with the Medical Termination of Pregnancy Act. As revised in 1975, the act allows medical termination of pregnancy (i.e., abortion) for any of the following reasons: (1) the pregnant woman has a serious disease or medical condition that would endanger her life if the pregnancy were to continue; (2) the fetus has substantial risk of physical or mental handicap; (3) the pregnancy resulted from rape; (4) the socioeconomic circumstances of the mother would endanger the health of the newborn child; or (5) the pregnancy occurred because of failure of a contraceptive method.

This last reason, in effect, legalizes abortion on demand—but only for married women. Among unmarried women, contraceptive failure is not grounds for abortion.

Sex-selective abortion is a two-step process involving determination of the sex of the fetus followed by abortion if the fetus is not of the desired sex. Methods for determining the sex of a fetus became available in India in the 1970s. Three such methods are commonly used: amniocentesis, chorionic villus sampling, and ultrasound.

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Soon after these tests were introduced, they were aggressively advertised and became widely available. In 1984, however, a broad-based coalition of women’s groups, civil-liberties groups, and health organizations established the Forum Against Sex Determination and Sex Pre-selection. This organization monitored the growing use of sex-determination tests for the purpose of sex-selective abortion and agitated to outlaw the use of the tests for this purpose. As a result of these and other efforts, the national government banned the practice in 1994 with the Prenatal Diagnostic Techniques Regulations and Prevention of Misuse Act.

This legislation specifies that: (1) only government-registered clinics or laboratories may employ prenatal diagnostic procedures that could be used to assess the sex of a fetus; (2) no prenatal diagnostic procedures may be used unless there is a heightened possibility that the fetus suffers from a harmful condition or genetic disease; and (3) “no person conducting prenatal diagnostic procedures shall communicate to the pregnant woman concerned or her relatives the sex of the fetus by words, signs, or in any other manner.” The law is easy to circumvent, however. Private laboratories and clinics are not monitored as closely as government facilities, and ultrasound is not monitored as closely as the other tests. And despite the restrictions, many doctors continue to communicate the sex of the fetus to parents who want to know. They do so verbally rather than in writing, and they often raise the cost of the test to compensate for the legal risk.

Who is practicing sex-selective abortion?

Much of the evidence on the spread of sex-selective abortion is anecdotal. There are no reliable statistics on the practice at either the state or national level. This analysis uses data from NFHS-1 and NFHS-2 on the sex ratio at birth as an indirect indicator of sex-selective abortion.

Several different factors may influence levels of sex-selective abortion, confounding the effect of any single variable. For this reason, the effects of specific variables are estimated using logistic regression to control for the effects of other variables. Births are the units of analysis.

The following predictor variables are included in the analysis: a composite variable indicating both child’s birth order and its mother’s number of living sons before its birth; mother’s education; mother’s media exposure; urban/rural residence; religion; caste/tribe; household standard of living; mother’s age at childbirth; and the five-year period in which the birth took place. Separate analyses were conducted for India as a whole and for 17 states grouped into four geographic regions—west, north, east, and south.

The characteristics associated most strongly with a high sex ratio at birth, after controlling for the other variables, are state and geographic region, child’s birth order and mother’s number of living sons, and two socioeconomic characteristics—mother’s education and mother’s media exposure. At the national level, none of the other characteristics included in the analysis has a significant effect independent of other variables.

State and region. In many states, especially in the south of India, the sex ratio at birth is close to 1.05, indicating that sex-selective abortion is rarely practiced. But in some states, mostly in the west and north, the ratios are very high, indicating a great deal of sex-selective abortion.

For 1984–98, NFHS-2 estimated sex ratios at birth at 1.14 in Haryana and 1.20 in Punjab. Compared with national statistics from other countries, Punjab has one of the highest sex ratios at birth in the world, indicating a very high level of sex-selective abortion.

Birth order and number of living sons. NFHS-2 results show clear evidence of abortion of girls among second and third births to women who already have daughters but no sons (Figure 1). National-level results from NFHS-1 do not show this pattern, indicating a trend toward greater use of sex-selective abortion during the six years between the surveys.

In states where evidence of sex-selective abortion is strong, NFHS-2 found

![Figure 1](image-url)  
**Figure 1** Predicted values of sex ratios for second- and third-order births by mother’s number of living sons before the birth: India, 1984–98 (NFHS-2)

*Note: Values of the sex ratio at birth are predicted by logistic regression. In the calculation, predictor variables other than the composite variable, birth order × number of living sons, are held constant at their mean values.*

*Source: Retherford and Roy 2003.*
particularly high sex ratios for births to women with daughters only. Among third-order births to women with two daughters but no sons, the sex ratio at birth is 1.72 in Punjab, 1.57 in Haryana, 1.56 in Delhi, and 1.28 in Maharashtra.

In three states, NFHS-2 also found evidence of sex-selective abortion of male fetuses. Among third-order births to women who already have two sons but no daughters, the sex ratio is 0.87 in Delhi and Maharashtra and 0.90 in Punjab.

Evidence of sex-selective abortion tends to be strongest in families that already have two children. This pattern no doubt reflects the fact that the total fertility rate for India is about three. Because a large proportion of women wish to stop childbearing after having three children, they are especially likely to have a strong gender preference for the third child.

Socioeconomic factors. During the period 1978–92 covered by NFHS-1, the sex ratio for second and higher-order births was high in urban areas but not in rural areas (Figure 2). During the period 1984–98 covered by NFHS-2, the sex ratio at birth was the same—at slightly above the biological norm—in both urban and rural areas. This trend indicates that the practice of sex-selective abortion is spreading from India’s cities and towns to rural areas.

Although the effect of urban residence on the sex ratio at birth went down between NFHS-1 and NFHS-2, the effect of mother’s education and mother’s exposure to mass media went up. NFHS-2 found sharp increases in predicted sex ratios for second and higher-order births among women who have completed at least middle school and women with high exposure to mass media (Figure 3). NFHS-1, by contrast, found no significant differences based on mother’s education or media exposure.

Women who are educated and exposed to mass media are probably more likely to use sex-selective abortion than other women because they have more information and access to sex determination and abortion facilities. They are also more likely to be in the habit of planning births.

In a group of western and northern states, the predicted sex ratio was also very high for second and higher-order births among women in families with a high standard of living—reaching 1.20 for the 15-year period before NFHS-2. These states are Haryana, Punjab, Gujrat, Delhi, Maharashtra, and Himachal Pradesh.

Son preference strong but declining

Analysis of women’s ideal sex ratio (the ratio of ideal number of sons to ideal number of daughters) indicates that son preference is declining in almost all states and socioeconomic groups. For India as a
The ideal sex ratio fell from 1.43 to 1.35 during the six years between NFHS-1 and NFHS-2. Nevertheless, ideal sex ratios are still much higher than the biological norm of 1.05. This difference implies that considerable potential exists for further increases in levels of sex-selective abortion in India.

Although women with high socioeconomic status are more likely than other women to practice sex-selective abortion, they are less likely than others to express a strong preference for sons. In other words, the propensity to use sex-selective abortion rises sharply with socioeconomic status, more than compensating for the lower levels of son preference expressed by high-status women.

This is especially true when status is measured in terms of mother’s education or media exposure. Inasmuch as sex-selective abortion is innovative behavior that diffuses from higher to lower socioeconomic groups, sex ratios at birth may increase further with development despite declining son preference.

This potential is greatest in states that currently have very strong son preference, as indicated by high ideal sex ratios, but low actual sex ratios at birth, indicating that not much sex-selective abortion is currently taking place. States that fit into this pattern are Uttar Pradesh, Rajasthan, and Bihar (Figure 4).

By contrast, in a few states where the prevalence of sex-selective abortion is already high and son preference is falling rapidly, it seems likely that the prevalence of sex-selective abortion will soon begin to fall, if it is not falling already. These states are Haryana, Punjab, Maharashtra, and Delhi.

Further reading