

THE INFLUENCE OF FEMALE LITERACY ON THE SEX RATIO IN INDIAN STATES

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ABSTRACT

Background: Son preference has resulted in a lopsided sex ratio in India. There is also an interregional variation in the sex ratios among the states.

Aims & Objectives: This study is conducted to evaluate the influence of female literacy on sex ratios through three decades from 1981 to 2011.

Materials and Methods: Data from the past four censuses were analyzed to determine the decadal change in female literacy and sex ratios in 24 states and the results were utilized to determine the impact of improving female literacy on the sex ratio in the states.

Results: Female literacy in India improved from 29.85% in 1981 to 65.45 in 2011. In the same period the sex ratio improved from 934 to 943. The change in sex ratio and female literacy rates in individual states however is not uniform and there is significant regional variation.

Conclusion: Female literacy has a positive bearing on the sex ratio and states which have a higher literacy rate show faster movement towards gender parity. Therefore higher the female literacy rate in a state more is the improvement in sex ratio for every percent further rise in female literacy.

Key Words: Sex Ratio; Female Literacy; Indian Census

Introduction

Female Literacy is probably the most enabling tool and weapon in the arsenal of democracy. Literacy emboldens half the populace to successfully demand their rights and achieve gender parity. In the recent past, tumultuous events have propelled women's rights into the spotlight and center stage. However the practice of son preference and consequently female feticide and infanticide persist. This has resulted in skewed sex ratio's, Sex ratio denotes the number of females per 1000 male population.^[1] The high masculinity ratio in India is due to the traditional practice of female infanticide and the current practices of female feticide, in addition higher survival ratios of male children due to the benefits of improvement in health care benefitting male children more also contributes to the imbalance in the sex ratio.^[2] Between 1950 and 2010 a total of 58.29 million women went missing, of which 28 percent were due to selective sex abortion and 72 percent due to post-natal excess mortality.^[3] Female literacy is believed to act as a deterrent and a dissuader of such practices. An analysis of the National Family Health Survey 1992-1993 revealed that women's education is associated with weaker son preference.^[4] Change in Sex Ratio is a more accurate indicator and reliable guide of socio-economic progress than Sex Ratio at a particular point in time.^[5] Therefore by analysing the data on female literacy and sex ratios in individual states

from the past 4 censuses, our study intends to not only study the influence of female literacy on the sex ratio but also its influence on the change in sex ratio over the past three decades.

Materials and Methods

Data on the female literacy rates of twenty four states were collected from the census reports of 1981, 1991^[6] 2001 and 2011^[7]. Three small states were carved out from three large states in 2000. These three large states- Uttar Pradesh, Madhya Pradesh and Bihar are among the most populous states in India and bifurcation of these states might marginally affect the results in our study, but the sheer size of these states made inclusion of their data imperative. Data from two states- Assam and Jammu & Kashmir were not included in this study because the census was not conducted in Assam in 1981 and Jammu & Kashmir in 1991. Data on the sex ratios of the states was similarly included from the 1981, 1991, 2001^[8] and 2011^[9] censuses. Statistics for India as a whole were also included in the study to serve as a benchmark and as a point of reference. The change in both female literacy and sex ratios between successive censuses was calculated and the change in sex ratio for every percentage rise in female literacy was determined from the division of the change in sex ratio by the change in female literacy between 2 successive censuses.

Results

Table 1 provides the data on the sex ratios in individual states from the four censuses between 1981 and 2011. The sex ratio in India has improved from 934 in 1981 to 943 in 2011.

Table-1: Sex Ratio in Indian states 1981-2011

States	Sex Ratio				Change in Sex Ratio		
	1981 (a)	1991 (b)	2001 (c)	2011 (d)	81-91 (b-a)	91-01 (c-b)	01-11 (d-c)
Andhra Pradesh	975	972	978	993	-03	06	15
Arunachal Pradesh	862	859	901	938	-03	42	37
Bihar	948	907	921	918	-41	14	-03
Delhi	808	827	821	868	19	-06	47
Goa	975	967	960	973	-08	-07	13
Gujarat	942	934	921	919	-08	-13	-02
Haryana	870	865	861	879	-05	-04	18
Himachal Pradesh	973	976	970	972	03	-06	02
Karnataka	963	960	964	973	-03	04	09
Kerala	1032	1036	1058	1084	04	22	26
Madhya Pradesh	921	912	920	931	-09	08	11
Maharashtra	937	934	922	929	-03	-12	07
Manipur	971	958	978	992	-13	20	14
Meghalaya	954	955	975	989	01	20	14
Mizoram	919	921	938	976	02	17	38
Nagaland	863	886	909	931	23	23	22
Orissa	981	971	972	979	-10	01	07
Punjab	879	882	874	895	03	-08	21
Rajasthan	919	910	922	928	-09	12	06
Sikkim	835	878	875	890	43	-03	15
Tamil Nadu	977	974	986	996	-03	12	10
Tripura	946	945	950	960	-01	05	10
Uttar Pradesh	882	876	898	912	-06	22	14
West Bengal	911	917	934	950	06	17	16
India	934	927	933	943	-07	06	10

Table-2: Female Literacy in Indian states 1981-2011

States	Female literacy Rate (%)				Change in %		
	1981 (a)	1991 (b)	2001 (c)	2011 (d)	81-91 (b-a)	91-01 (c-b)	01-11 (d-c)
Andhra Pradesh	24.1	32.7	50.4	59.7	08.6	17.7	09.3
Arunachal Pradesh	14.0	29.7	43.5	59.5	15.7	13.8	16.0
Bihar	16.5	22.9	33.1	53.3	6.4	10.2	20.2
Delhi	62.6	67.0	74.7	80.9	4.4	07.7	06.2
Goa	55.1	67.1	75.4	81.8	12.0	08.3	06.4
Gujarat	38.4	48.6	57.8	70.7	10.2	09.2	12.9
Haryana	26.9	40.5	55.7	66.7	13.6	15.2	11.0
Himachal Pradesh	37.7	52.1	67.4	76.0	14.4	15.3	08.6
Karnataka	33.1	44.3	56.9	68.1	11.2	12.6	11.2
Kerala	75.6	86.2	87.7	91.9	10.6	01.5	04.2
Madhya Pradesh	19.0	28.8	50.3	60.0	09.8	21.5	09.7
Maharashtra	41.0	52.3	67.0	75.4	11.3	14.7	08.4
Manipur	34.6	47.6	60.1	73.1	12.9	12.5	13.0
Meghalaya	37.2	44.8	59.6	73.7	07.6	14.8	14.1
Mizoram	68.6	78.6	86.7	89.0	10.0	08.1	02.3
Nagaland	40.4	54.7	61.5	76.6	14.3	06.8	15.1
Orissa	25.1	34.7	50.5	64.3	09.6	15.8	13.8
Punjab	39.7	50.4	63.4	71.3	10.7	13.0	07.9
Rajasthan	14.0	20.4	43.9	52.6	06.4	23.5	08.7
Sikkim	27.4	46.7	60.4	76.4	19.3	13.7	16.0
Tamil Nadu	40.4	51.3	64.4	73.8	10.9	13.1	09.4
Tripura	38.0	49.6	64.9	83.1	11.6	15.3	18.2
Uttar Pradesh	17.2	25.3	42.2	59.2	08.1	16.9	17.0
West Bengal	36.0	46.5	59.6	71.1	10.5	13.0	11.5
India	77.0	74.0	54.0	47.0	3.0	20.0	7.0

Table-3: Change in sex ratio for percent rise in female literacy 1981-2011

States	Change in Sex Ratio		
	1981-1991	1991-2001	2001-2011
Andhra Pradesh	-0.4	0.34	1.61
Arunachal Pradesh	-0.2	3.04	2.31
Bihar	-6.4	1.37	-0.15
Delhi	4.32	-0.78	7.58
Goa	-0.7	-0.84	2.03
Gujarat	-0.8	-1.41	-0.15
Haryana	-0.4	-0.26	1.64
Himachal Pradesh	0.21	-0.39	0.23
Karnataka	-0.3	0.32	0.8
Kerala	0.38	14.67	6.2
Madhya Pradesh	-0.9	0.38	1.13
Maharashtra	-0.3	-0.81	0.83
Manipur	-1	1.6	1.08
Meghalaya	0.13	1.35	0.99
Mizoram	0.2	2.1	16.52
Nagaland	1.61	3.39	1.46
Orissa	-1	0.06	0.51
Punjab	0.29	-0.61	2.66
Rajasthan	-1.4	0.51	0.69
Sikkim	2.22	-0.23	0.94
Tamil Nadu	-0.3	0.91	1.06
Tripura	-0.1	0.32	0.55
Uttar Pradesh	-0.7	1.3	0.82
West Bengal	0.57	1.31	1.39
India	-0.73	0.44	1.43

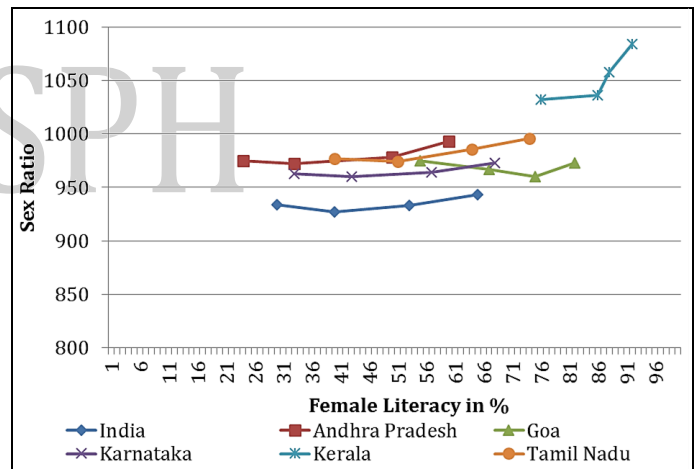


Figure-1: Female Literacy vs Sex Ratio- South Indian states

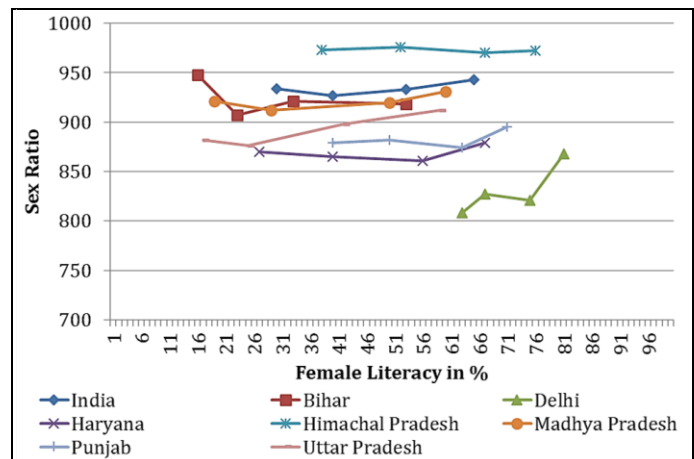


Figure-2: Female Literacy vs Sex Ratio-North Indian states

Kerala had a sex ratio of 1032 and Delhi had the worst gender imbalance with a sex ratio of 808 in 1981. In the 2011 census Kerala had a sex ratio of 1084, Delhi continued to be the worst performer again, with a sex ratio of 868. In 1991, 15 states showed a decline in the sex ratio from 1981. In 2001, 8 states showed a decline in the sex ratio from the previous census and in 2011 only 2 states, Bihar and Gujarat showed a decline in their sex ratios.

Table 2 reveals the female literacy rate from the past 4 censuses, Female Literacy in India has improved from 29.85% in 1981 to 65.4% in 2011. Arunachal Pradesh and Rajasthan, both had a literacy rate of 14% in 1981, which was the lowest among the states. In 2011 Rajasthan was again the least female literate state with a female literacy rate of 52.6%. Kerala had a female literacy rate of 75.6% in 1981 and 91.9% in 2011, which was the best female literacy rate in both the censuses.

Table 3 shows the change in sex ratio for every 1% rise in the female literacy rate. Delhi (4.32) showed the greatest improvement in the sex ratio for every percent rise in female literacy in the decade between 1981 and 1991. In the next decade Kerala (14.67) showed the maximum improvement and for the 2001 to 2011 decade Mizoram (16.52) was the best performer. States with higher literacy rate with the exception of Delhi had more balanced gender ratios. States that had higher literacy rates showed more rapid gains in sex ratio for every percent rise in female literacy. States which showed dramatic gains on female literacy rate had similar beneficial effects on their sex ratios.

There was a significant difference in the sex ratios and female literacy rates of the Southern and Northern states. This is illustrated in Figure 1 and 2, Figure 1 shows the relationship between sex ratio and female literacy in the Southern states. Figure 2 shows the same relationship in the Northern states. Kerala has the best female literacy rate and the same state was the only state in the country where women outnumbered men. Rajasthan, the state which had the least percentage of female literates had a sex ratio of 928. Tamil Nadu's female literacy rate was in the mid-seventies and its sex ratio was 996. The female literacy rate in South India is higher than most states in Northern India and this gets reflected in the sex ratios too.

Discussion

Kofi Annan, the former secretary general of the United

Nations famously said 'Literacy is a bridge from misery to hope'. In the case of female literacy it is both bridge and a beacon. In the past few years the fight for women's rights have been suddenly pushed into the forefront and there is increasing awareness about societal issues confronting women but one concern that needs to be increasingly addressed is the issue of 'missing women'. Females who were not 'born' and in some cases allowed to die, because of a deep seated gender bias. A study published in *Demography* revealed that son preference in India had two significant effects first; smaller families have a higher proportion of sons than larger families. Second, economically and socially disadvantaged families in Northern India have a higher proportion of sons.^[10] Parents whose first child is male will stop having children faster than parents whose first child is female, and also on average parents of a first born son will have fewer children.^[11] Son targeting fertility behaviour results in girls having a larger number of siblings, and girls being born at relatively earlier parities within families.^[12] The Sex Ratio at Birth (SRB), defined as the number of boys born to every 100 girls for second births with one preceding girl the ratio in India is 132 and for third births with two previous daughters it was 139, whereas sex ratios are normal when the previous child was a boy.^[13] The Sex Ratio for the second order births when the first born was a girl fell from 906 per 1000 boys in 1990 to 836 in 2005 but there was no significant decline in sex ratios for second order births if the firstborn was a boy.^[14] Parity progress driven by the desire for sons accounted for 7% of births and at any given parity the last born child of women who had stopped child bearing was more likely to be a son than a daughter.^[15] Son preference has other consequences too, including on the birth and fertility rate. A study conducted in Uttar Pradesh, India's most populous state observed that sex preference, particularly son preference played a vital role in the contraceptive practices among women and this in turn had a major role in determining the total fertility rate of women in the state.^[16] Son preference was not limited by geographical boundaries and often has roots in ethnicity, Indian immigrants in the west, with high levels of literacy and a high income profile are sometimes unfortunately moored in some traditional biases, this is reflected in various studies on the Indian diaspora. In the United States, data on the children of Asian origin demonstrated male biased ratios.^[17] A similar study in Canada revealed that multiparous women born in India were significantly more likely than multiparous women born in Canada to have a male infant.^[18] This indicates that while literacy

can be a deterrent to gender bias, conservative moorings can sometimes overwhelm these benefits of literacy. The highly masculine sex ratio in India was analyzed using population projections based on population dynamics and the findings showed that a sex ratio at birth of 106 males per 100 females and differences in mortality at young ages persisting over a long period result in the skewed sex ratio.^[19] Excess female mortality or the lowness of the relative survival advantage of women is the single most important determinant of “missing women” in India.^[20] Some experts attribute India’s improved sex ratio now to the longer life expectancy in women, age specific data is needed to prove this postulation, but generally life spans have increased for both genders. By 2050, India’s elderly population is estimated to be 316 million.^[21]

Technology has a huge role in increasing the life expectancy and it has had a significant impact on health and the screening and prevention of illnesses. Modern science influences life on a daily basis and it is an invaluable tool in the war against disease and squalor. But sometimes these very tools can be misused and defeat the very purpose for which they were developed. A review of the evidence on the sex ratio among children below 6 years revealed that technological developments permitting sex-selective abortions have seriously aggravated the imbalances in the states.^[22] States with a higher number of registered prenatal diagnostic facilities per 1,00,000 women have a lower child sex ratio than states where these facilities are less available.^[23] China, which until recently followed a strict single child policy has dismal rates in sex ratio. Forty to fifty percent of the increase in sex imbalance at birth in China can be attributed to availability of ultrasound examinations.^[24] Antenatal detection of gender and consequent feticides have reduced the number of ‘unwanted’ girls, this has resulted in unintended corollary effects. A study on malnutrition in India revealed that there was a reduction in girl’s malnutrition in areas of increasing incidence of prenatal sex detection.^[25]

Interregional differences in sex ratio were also observed in our study, states with a higher female literacy generally had better sex ratios, Southern states have a superior female literacy rate when compared to their counterparts in the North, and in our study the state with the best literacy rate had the best female to male ratio. States which had a higher female literacy rate outperformed the states with a lower literacy rate on sex ratio parameters. The increase in the number of states

showing positive movement on the sex ratio front with successive censuses, especially in states that have significant gains in female literacy shows that female literacy has a major positive influence on sex ratios. Data from the 1998-1999 National Family Health Survey demonstrates that women in South Indian states have relatively higher levels of literacy, labor force participation, smaller family size and lower levels of son preference.^[26] Greater female literacy results in more involvement in decision making and higher percentage of women employed. Lower female labor participation was an important determinant of anti -female child bias.^[27] All though states in the North generally have low sex ratios, some states like Himachal Pradesh have bucked the trend and have made considerable improvements in their sex ratios. An editorial in the American Journal of Public Health lauded the efforts of Himachal Pradesh in reducing the Sex Ratio from 884 per 1000 males in 1901 to 976 in 1991. The editorial attributed Himachal Pradesh’s success to increase in female literacy, greater participation of females in the labor force and significant improvement in health care.^[28] Data from 117 countries was studied to test the Guttentag-Secord theory on sex ratio and women’s status and roles. The theory implies that a high sex ratio is positively associated with the proportion of women who marry and the fertility ratio and negatively associated with women’s age at marriage, female literacy and labor force participation. The analysis revealed little support for this theory but most of these relationships emerged when the level of socio-economic development was statistically controlled.^[29] Delhi’s low sex ratios may be due to a higher percentage of the immigrant population being male. One of the consequences of regional variation in sex ratios is greater national integration, grooms in Haryana finding brides in Kerala is a happy collateral effect, with the passage of time such consequences will be more pronounced and noticeable. This intermingling will result in a diminishing of conservative gender biases. Greater media access and exposure to entertainment mediums such as television and popular films will help in the spread of liberal thoughts and in surmounting conservative dogma. A three year study on the influence of cable TV on women’s status revealed that the introduction of cable Television was associated with increased women’s autonomy and decline in domestic abuse, fertility and son preference.^[30]

An imbalance in the sex ratio results in less marriageable opportunities for men. This results in a greater accumulation of youth who do not have the emotional

anchor of a spouse or a child. Men who are unemployed or uneducated are more likely to be the ones who are not cocooned by matrimony and it is this segment of the population that is vulnerable to societal and peer pressure to indulge in antisocial and nefarious activities. Interpol data from 70 countries was analyzed and the study revealed that societies with an imbalanced sex ratio had higher rates of violent crime such as homicide, rapes and assaults.^[31] The overwhelming majority of violent crime is committed by young, unmarried men of low socioeconomic status.^[32] The homicide rates in 56 countries were examined and it was discovered that the homicide rate could be predicted by a linear equation combining measures of economic inequality, negative per capita income growth and negative sex ratio of men to women.^[33]

Various measures to improve the sex ratio have been designed and implemented with varying degrees of success. These have ranged from incentives for the girl child such as subsidized education, health care and cash hand-outs for marriages and punitive measures against ante natal sex determination. In the late 1990s it was estimated that more than 1,00,000 sex selective abortions of female fetuses were done in India, particularly in Gujarat, Haryana and Punjab. Enforcing of recent government regulations might have some effect but can be more successful if combined with societal changes.^[34] Stricter enforcement of laws coupled with stronger regulations may be beneficial. In South Korea strong laws forbidding fetal sex determination had resulted in a dramatic improvement in the sex ratio in the year the law was enforced, punitive measures included suspension of license of the guilty physician. The sex ratio in that year improved from 117 to 113.^[35] Therefore rather than just implementation of laws, more robust laws along with greater awareness and inculcating a more liberal ethos with female literacy as the lynch pin, could be the ideal template for a successful strategy to achieve gender parity.

Conclusion

In conclusion while it is known that female literacy has an inverse relationship with sex ratio, what this study adds to the discourse is that the change in sex ratio for percentage rise in female literacy is more for high literate states and that the positive change in sex ratio gains momentum with rise in female literacy. Therefore states with a higher ranking on female literacy will advance towards gender balance at a faster pace. Gender parity

has collateral effects on labor force participation, overall crime rates and faster socioeconomic progress. This revelation should motivate states to enhance and reinforce their efforts at improving female literacy.

References

- Joshi A, Tiwari N. Sex ratio in India – embarrassing to be honest. *Curr Sci India* 2011;101:1006-8.
- Singh JP. Socio-cultural Aspects of the High Masculinity Ratio in India. *J Asian Afr Stud* 2010;45:628-44.
- Chaudhari S. Female Infant Mortality Disadvantage in India: A Regional Analysis. *Rev Radic Polit Econ* 2012;44:321-6.
- Pande RP, Astone NM. Explaining son preference in rural India: the independent role of structural versus individual factors. *Popul Res Policy Rev* 2007;26:1-29.
- Jayaraj D, Subramanian S. The wellbeing implications of a change in the sex-ratio of a population. *Soc Choice Welfare* 2009;33:129-50.
- Percentage of literates in states. Table 10. Information Repository of education in India. Ministry of Human Resources and Development. Government of India. Available from: <http://www.teindia.nic.in/mhrd/50yrsedu/r/6H/HI/6HHI0701.htm>.
- Rankings of State and Union Territories by literacy rate and sex. Provisional Population Data 2011, Census of India, Office of Registrar General & Census Commissioner, India. In: Statement 23(2). State of Literacy.p.111.
- Databook for the use of the Deputy Chairman, Planning Commission of India. Office of the Registrar General and Census Commissioner, India. May 2011 p.123.
- Office of the Registrar General and Census Commissioner, India. Available from <http://www.census2011.co.in/sexratio.php>.
- Clark S. Son preference and sex composition of children: Evidence from India. *Demography* 2000;37:95-108.
- Rosenblum D. The effect of fertility decisions on excess female mortality in India. *J Popul Econ* 2013;26:147-180.
- Basu D, de Jong R. Son targeting fertility behaviour: some consequences and determinants. *Demography* 2010;47:521-36.
- Jha P, Kumar R, Vasa P, Dhingra N, Thiruchelvam D, Moineddin R. Low male-to-female sex ratio of children born in India: national survey of 1.1 million households. *Lancet* 2006; 367:211-8.
- Jha P, Kesler MA, Kumar R, Ram F, Ram U, Aleksandrowicz L et al. Trends in selective abortions of girls in India: analysis of nationally representative birth histories from 1990 to 2005 and census data from 1991 to 2011. *Lancet* 2011; 377:1921-8.
- Chaudhuri S. The Desire for Sons and Excess Fertility: A Household-Level Analysis of Parity Progression in India. *Int Perspect Sex Reprod Health* 2012; 38:178-86.
- Singh HK, Singh RD, Singh GP, Kumar A. Influence of sex composition on demand of child in Uttar Pradesh. *Ind J Prev Soc Med* 2010;41:57-66.
- Almond D, Edlund L. Son-biased sex ratios in the 2000 United States Census. *Proc Natl Acad Sci U S A* 2008;105:5681-2
- Joel G. Ray JG, Henry DA, Urquia ML. Sex ratios among Canadian liveborn infants of mothers from different countries. *Can Med Assoc J* 2012;184:492-6.
- Griffiths P, Mathews Z, Hinde A. Understanding the sex ratio in India: A simulation approach. *Demography* 2000;37:477-88.
- Jayaraj D. Exploring the importance of excess female mortality and discrimination in "Natality" in explaining the "Lowness" of the sex ratio in India. *Dev Econ* 2009;47:177-201.
- James KS. India's Demographic Change: Opportunities and Challenges. *Science* 2011;333: 576-80.
- Bhaskar V, Gupta B. India's missing girls: biology, customs, and economic development. *Oxford Review of Economic Policy* 2007;23:221-38.
- Madan K, Breuning MH. Impact of prenatal technologies on the sex ratio in India: an overview. *Genet Med* 2014;16(6):425-32.
- Chen Y, Li H, Meng L. Prenatal Sex Selection and Missing Girls in China: Evidence from the Diffusion of Diagnostic Ultrasound. *J*

- Human Resources 2013;48:36-70.
25. Hu L, Schlosser A. Trends in Prenatal Sex Selection and Girls' Nutritional Status in India. *CEifo Econ Stud* 2012;58: 348-72.
 26. Bose S, Trent K. Socio-demographic determinants of abortion in India: A North-South comparison. *J Biosoc Sci* 2006;38:261-282.
 27. Agnihotri S, Jones RP, Parikh A. Missing women in Indian districts: a quantitative analysis. *Struct Change Econ Dynam* 2002;13:285-314.
 28. Richmond J. Excess Female Mortality in India: The Case of Himachal Pradesh. *Am J Public Health* 2000;90:1369-71.
 29. South SJ, Trent K. Sex ratios and women's roles: A cross-national analysis. *Am J Sociol* 1988;93:1096-1115.
 30. Jensen R, Oster E. The Power of TV: Cable Television and Women's Status in India. *The Q J Econ* 2009;124:1057-94.
 31. Barber N. The Sex Ratio as a Predictor of Cross-National Variation in Violent Crime. *Cross-Cult Res* 2000;34:264-82.
 32. Messner SF, Sampson RJ. The sex ratio, family disruption and rates of violent crime: the paradox of demographic structure. *Soc Forces* 1991;69:693-713.
 33. Lim F, Bond MH, Bond MK. Linking Societal and Psychological Factors to Homicide Rates across Nations. *J Cross-Cult Psychol* 2005;36:515-36.
 34. Arnold F, Kishor S, Roy TK. Sex-Selective Abortions in India. *Popul Dev Rev* 2002;28:759-85.
 35. Hesketh T, Li L, Xing ZW. The consequences of son preference and sex-selective abortion in China and other Asian countries. *Can Med Assoc J* 2011;183:1374-7.

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