Lives at Risk: Declining Child Sex Ratios in India[1]

I. Introduction

In a seminal article in 1990, Amartya Sen suggested that worldwide, particularly in Asia, millions of women were missing from the population totals of many countries. He also noted the alarming fact that the sex ratio for female children in China, India and South Korea is actually deteriorating while the overall sex ratio for females in those countries has marginally improved. Sen argued that the number of women missing in any population could be estimated by calculating the numbers of extra women who would have survived in that society. This would have been so if it had the same ratio of women to men as in other regions of the world where both sexes receive similar care. Given the low ratio of 0.94 women to men in South Asia, West Asia and China indicating a deficit of 6 percent, he surmised that since in countries where women and men receive similar care the ratio is about 1.05, the real deficit is about 11percent of their women. These numbers tell, ”quietly a terrible story of inequality and neglect leading to excess mortality of women" (Sen, 1990). In India, the widening gap in the ratio of girls to boys is clearly brought to light in the Census of 2001, confirming a trend that has been in place since 1901. This is most pronounced in the youngest age group, 0-6, thus indicating the scale of injustice as well as the long-term social and economic consequences implied.

Ansley Coale (1991) also drew attention to unusually high sex ratios at birth and high female mortality rates relative to males, especially in the early years of life and for daughters with elder sisters. To give a rough approximation of the numerical impact of excessive female mortality, he also estimated the ratio of males to females in selected populations that would exist in the absence of discriminatory treatment of females, and thus the total number of ’missing’ females. For the populations of China, India, Pakistan, Bangladesh, Nepal, West Asia, and Egypt, he calculated the total number of missing females to

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be about 60 million, a figure lower than Sen's 100 million missing women. Nevertheless, Coale concluded that they confirm 'the enormity of the social problem brought to wider public attention by Sen'. Subsequent studies have provided evidence that it is excessive female mortality before birth, at birth, in infancy and in childhood, which mainly account for the imbalance in sex ratios and the absence of a large number of female children in Asia. Given this, it is perhaps more apt a problem of missing girls than missing females. Thus, the most serious contemporary concern is the elevated female death rates due to gender discrimination, which offsets the natural lower mortality of females. Coale has argued that the high masculinity ratio in many Asian countries is traceable to this single cause. Moreover, the high female death rates occur mainly in the first five years of life. In a recent study, Croll (2002) raises the controversial question of why millions of girls do not appear to be surviving to adulthood in contemporary Asia. Thus, there is an urgent need to focus attention on daughter-discrimination, family planning, girlhood, children differentiated by their gendered value, their birth order and sibling configuration particularly in South Asia.

The high masculine sex ratios of the Indian population had been a matter of concern for many decades. Considerable attention have been paid to different dimensions of female deficits in India and persisting regional variations (Sen 1990; Agnihotri 2000; Dasgupta and Bhat 1995; Miller 1981 and 1989), since the numerical imbalances between the male and female sexes were pointed out in the seventies (Visaria 1971; Natarajan 1972). The results of 2001 Census have set off a further debate on the issue and have narrowed down the focus to the changes in the juvenile or child sex ratio[2]. Changes in the sex ratio of children, aged 0-6 years, are better indicators of status of girl child in south Asian environment known to be more hostile to females in their early ages. It also reflects the sum total of intra-household gender relations[3].

The present paper concentrates on the child sex ratio rather than sex ratio of total population and focuses on selected states of India. The sex ratio imbalances are more severe in the north western region, which stretching from Uttaranchal in the north runs up to Maharastra in the west across Himachal Pradesh, Punjab, Chandigarh, Haryana, Delhi, Rajasthan

[2]The Census of India measures the sex ratio as number of females per 1000 males as opposed to the standard international norm of number of males per 1000 females. Defining the sex ratio by covering children in age group 0-6 may seem arbitrary but the Census uses it for the purposes of literacy status, categorising (from 1991 onwards) the entire population into two groups, those aged 0-6 years and those 7 years and above.

[3]The child sex ratios are less likely to be affected by migration, which, if sizeable, can significantly alter the sex composition in numerical terms.

and Gujarat. Confined to the selected states from north and southern parts of India, it seeks to describe the situation at much lower level than have been attempted till now in the context of overall changes in regional patterns and trends as revealed in the 2001 Census. It aims to expand the literature on sex ratio on to more disaggregated level, at the tehsils/taluks[4], and offers empirical evidence of discrimination at the grassroots, as mirrored by the shifts in sex ratio. The paper further discusses the three factors responsible for the decline in the child sex ratio, namely sex-selective abortion, infanticide and neglect /discrimination of girl child in Indian context.

The paper is presented in seven sections, with introduction in the first section. The second section briefly describes the conceptual framework. The third section deals with a review of relevant literature and emerging issues. A detailed discussion on changing sex ratios at state, district and tehsil levels were presented in section four. The fifth section examines the dimensions of sex selective abortions. The next section (VI) deals with the problems of infanticide. The last section (VII) highlights the patterns in child sex ratios and their implications.

Conceptual Framework

Human population exhibits definitive characteristics in terms of its sex composition. In most parts of the globe less females are born, yet females, as compared to their male counterparts, typically survive longer to exceed the males numerically at any given point of time. However, this demographic attribute eludes India where males decisively out-number the females and women constitute less than half of the total population. Sex ratio is a direct indicator of women's status and welfare. The sex ratio changes are usually analysed in a framework that underlies (relatively) greater deprivation and discrimination of females, as opposed to males, in the south Asian cultural set-up. The major determinants, of numerical imbalances, revolve around factors such as under enumeration of women, fertility, mortality and migration. Under-enumeration of females, relative to their male counter parts, typically encountered in south Asia due to lower status of women, also makes census sex composition more masculine. Though such enumeration bias is relatively greater at certain ages such as early childhood and widowhood, rather being artificial than real, it does not depict the grim reality and warrants

[4] Tehsil/taluk is the major revenue, administrative and planning unit after the district, and most of the development programmes are routed and implemented at this level. The tehsils/taluks comprise both rural and urban areas.

interventions that can generate better awareness about the need for accurate age reporting as well as recording.

While the 2001 Indian census shows that the overall male-female sex ratio has marginally improved from 927 women per 1000 men to 933 per 1000 during the last decade the number of girls to boys in the youngest age group fell from 945/1000 to 927/1000. The regional disparities also appear to have increased; the northern states generally exhibit a worsening trend in male-female sex ratio as compared to the southern states. The Census evidence suggests a clear cultural preference for male children, particularly among north Indians. The sharpest decline for the age group 0-6 years is observed in the northern states, particularly in Haryana (820/1000) and in Punjab (793/1000). The census lists ' sex-selective female abortions', 'female infanticide', and ''female neglect' – typically through giving girls less food and medical care than boys- as "important reason commonly put forward" for this shocking anomaly. The new figures point to the use of new technologies to determine the gender composition. Furthermore, as social norms are changing toward smaller families, the availability of and access to new technologies provide an easy way for parents to achieve such goals. Amartya Sen has called it a 'technological revolution of a reactionary kind'.

Fertility trends and son preference in contemporary Asia

Fertility decline in East and South Asia has been relatively rapid at both higher and lower levels of economic development while son preference has continued with rising economic development, declining fertility, smaller families and improved status of women. Disparate and diverse as the countries in these regions are there is a demographic, developmental and gendered coherence which combines rapid progress and fertility decline, rising and sometimes rapid economic change and a common culture of gender, all of which have contributed to continuing or more pronounced son preference.

One of the most remarkable changes in this century has been the shift from high to low fertility in Asia. Indeed, this has been described as 'the greatest single demographic change in the second half of the century' (Caldwell 1993, p. 300). While the timing, onset, pace and magnitude of this decline varies between countries, in most of Asia there have been two similar and striking changes in fertility behaviour which began in the 1960s. They are a substantial decline in post-marital fertility rates and a marked rise in the mean female age of first marriage. Fertility declined rapidly between 1960 and 1990 in East Asia but more modestly in South Asia. In the 1990s, India has experienced a new fertility decline at the national level. However, there is also evidence that there is growing disparity between the north and the south, with the southern states having been more successful in controlling population growth. In a vast country like India with considerable demographic diversity and heterogeneity and varying levels of socio-economic development among states, the levels and phases of fertility decline vary significantly from one state to another[5] (Sekher et, al 2001).

A substantial decline in fertility presupposes a desire for fewer children and the means to limit the family size. Both these conditions can be achieved with increasing social and economic development. The coincidence of fertility decline and rapid economic growth in many regions of East Asia and pockets of South Asia lend support to a primary correlation between general levels of social and economic development and fertility decline. However, this does not account for the magnitude of fertility decline in poorer regions of Asia, particularly in the populous and predominantly rural populations of South Asia. This decline has drawn attention to the importance of political interventions, in the form of family planning programs in reducing fertility.

If it is assumed that such programmes have been a major determinant to fertility decline in some Asian countries, several studies also suggest that cultural factors have played an important role in determining fertility trends. (Basu, 1992) As suggested by Jeffery and Jeffery (1997), "What is economically rational can be culturally very specific"(p 79). While attention has been drawn to the importance of cultural factors in studying demographic behaviour, few studies have examined in detail the relations between cultural and economic aspects. One important cultural (and economic) feature is the value attached to sons[6]. Many social scientists have argued that with increasing welfare and economic development the importance of factors such as son preference would decline. However, some recent studies have shown that son preference has, in fact, increased alongside lower fertility and rising economic and social welfare. For example, Basu's study from northern India (1992) shows an increased sex differential in mortality, not only with rises in socio-economic status, but also with better

[5] There exist considerable variations in the status of women, patterns of nuptiality and fertility behaviour, particularly between the southern and northern states of India.

[6] The son preference is more marked in the northern states and can be observed in a North-South difference in the sex ratio in child mortality, which is much more to the disadvantage of girls in the North. Preliminary results of our field studies clearly substantiate this difference.

education for women. "Although her capacity to increase the chances of survival of her children seems to increase with education, the typical Utter Pradesh woman's ability to treat her male and female offspring equally actually decreases" (pp. 196-97)[7]. Hence, it is important to further analyse the nexus of economic, social and cultural factors that underlie daughter discrimination, thus shifting the focus from son preference to daughter discrimination.

Gender preferences and daughter discrimination

We believe it is more important to study the consequences of son preference for the physical survival, growth and well being of girls/daughters. There is an urgent need to highlight the mirror image of son preference, namely, daughter-discrimination and emphasize how a strong preference for sons entails discrimination against daughters. In one of the few existing country-specific studies on this theme, Miller (1981) argued; "The problem is that son preference is so strong in some areas of India and amongst some classes that daughters must logically suffer in order that families' perceived and culturally mandated needs are fulfilled"(p 25). Logically, this would imply that preference for sons coexists with discrimination against daughters; the stronger the son preference, the more intense the daughter discrimination would be. We need to study how the desire for sons, whether strong or weak, is directly related to daughter discrimination and neglect. This, in its most extreme form, results in the death of daughters. In India, the practice of female infanticide has apparently continued even in recent years (UNICEF 1995: Chunkath and Athreya 1997; George, *et .al.* 1992).

Just as for son preference, it was assumed that female infanticide along with other threats to the survival, growth and development of daughters would also disappear with increasing economic and social welfare, lower and controlled fertility, improvement in income levels, nutritional levels, health care and female education. Overall physical well-being and education of both male and female children may have improved with increasing economic welfare and declining fertility. Yet recent studies of female infanticide, new biases in sex ratios at birth and infant and child mortality rates indicate that extreme forms of daughter discrimination resulting in death have persisted (Miller 1981: Coale and Bannister 1994).

[7] Also, in her study in rural Punjab, Das Gupta found that women's education was associated with a reduction in overall child mortality together with a stronger discrimination against higher birth order girls. (Das Gupta, 1987).

Anthropologists and demographers have argued that both infanticide and selective infant and child mortality are means by which parents traditionally attempted to determine or manage the sex composition of their families (Miller 1981; Hausfater and Hrdy 1984). Studies of sex-selective infanticide and infant and child mortality directly link these practices to gender determination and the reduction of unwanted female children. It is the gender composition that is increasingly identified as a key factor in determining the birth and survival of additional children, and which gives rise to high or otherwise avoidable excessive mortality rates of young female children. In the past gender composition was an important chance factor in the iterative process of family planning. Now, however, parents are able to exercise greater control over the gender composition of their families in addition to the number and spacing of their children through the use of modern technologies such as amniocentesis and ultra sound. We can hypothesise that the widespread use of advanced technologies has permitted the identification of the sex of the foetus and this, followed by sex-selective abortion, has given families a new means to determine gender composition of their families.

Now, rather than going through repeated pregnancies bearing daughters in an attempt to produce a male progeny, smaller family and reduced fertility seem to imply that unborn daughters are the first to be 'sacrificed'. Generally, in Asia both infanticide and fatal neglect of female children seem to have lately been supplemented by sex identification and sex-selective abortion to achieve the desired family size and gender composition (Sudha and Rajan 1999). Do these strategies imply that despite better opportunities for women's education, rising labour force participation and some independence daughters still cannot equal sons? Does this hold good whether familial resources are plentiful or scarce and environments developed or less developed? Do they also imply that the process of family planning and reproduction management in most Asian societies, particularly in India, is rooted in cultural assumptions about gender difference and hierarchy?

Ethnographic evidence suggests that boys and girls are expected to and, indeed, do exhibit different behaviors, undertake different physical and emotional tasks, and participate in and perform different practical and ritual activities within families and kinship groups. Cultural differences in the level of contact between a married daughter and her natal kin also lead to differences in the value attached to sons. Village and kin exogamy lead to the severance of ties with a married daughter (Raheja and Gold 1994). Parents, thus, become more dependent on a son and, consequently, son preference becomes stronger (Basu 1992).

Daughters are associated with a double loss. Firstly, a daughter leaves the natal family upon her marriage and the benefits from investments made in her upbringing accrue to the new family, thus constituting a loss for the natal family. This is further compounded by the burden of expenses of her marriage[8]. Sons, on the other hand, are considered assets worthy of short- and long-term investment. In India, the birth of a boy is thus a time for celebration while the birth of a girl - especially a second or subsequent daughter - is often viewed as a crisis (Bumiller, 1991). We would argue that besides the economic basis for son preference (which?) there are also reasons that are deeply rooted in cultural assumptions about gender identity and relations although there are few studies examining such linkages. Great ritual importance is linked to matrimony and there is thus a ritual merit in having a daughter to give away in marriage. This means that a first daughter is accepted positively, although with an anticipation of the burden of future marriage costs[9]. The parental choice to rear sons rather than daughters appears to be rooted in notions of gender difference and complementarity which derive from both ancient texts and current re-assertions within commercialism, consumerism and culturalism which characterize much of Asia today. We hypothesize that such assertions of gender difference, divisions and complementarity that are also hierarchical and which emphasize gendered divisions of labour surely contribute to the cognitive conception that daughters cannot substitute for sons.

The Indian Case

India is a country of striking demographic diversity. It exhibits a relatively high but declining fertility and uneven economic development with marked regional disparities by social group, age group and levels of prosperity (Agnihotri, 1995; Dyson & Moore, 1983). The Northern and Southern states exhibit considerable

[8] In India, for instance, an additional burden of considerable weight for the bride's family is the payment of dowry to the groom's family. In these days of globalization, growing consumerism and commercialism, dowry payment is more a rule than an exception; the amount of dowry paid, it would be more accurate to demanded by the groom's family, in kind and cash has taken huge proportions. Another cultural norm affecting the value of females in northern India is the continuing unidirectional flow of resources from a woman's parental household to her in-laws. This flow of resources may go on throughout the woman's life and constitutes a considerable drain on the resources of her parents and male siblings.

[9] In her study in Punjab, Das Gupta found that the sex differential in child mortality was much higher for second and subsequent daughters. This subset of girls experiences 53% higher mortality than other children. (Das Gupta 1987:82)

differences. While the north has lower levels of literacy and relatively higher level of agricultural development, the south generally exhibits higher literacy levels and better health facilities. The southern states have lower levels of infant, child and female mortality rates and lower fertility rates. The northern states, on the other hand, has considerably higher rates of infant, child and female mortality and fertility (Jeffery and Jeffery 1997; Guilmoto and Rajan 2001).

Several factors have contributed to a fertility decline in India. Among them are widespread availability of contraceptive techniques, an overall decline in infant mortality rate and a marked rise in the mean female age at marriage, particularly in the south (Hatti and Ohlsson 1984 and 1985; Srinivasan 1995). A matter of great concern, however, is the continuing tradition of son preference and the general preponderance of males over females in the population. India has one of the highest rates of masculinity in the world. In fact, the census reports throughout the 20th century have recorded a steady decline in the proportions of female population in India.

Many studies have drawn attention to excess mortality among females. Basu (1992) who has studied these trends has argued that the existence of a continuously widening gap between male and female mortality is an expression of the increasing popularity of amniocentesis procedure to detect and subsequently abort the female foetus. Given the premise that girls are biologically as hardy as boys, the higher death rates suggest a preoccupation with the existence and survival of boys. In 1981 Miller argued that excess female mortality in many regions in the north and among certain categories of daughters was so great that 'the females can be deemed to be *endangered'*. Age group 0-10 and especially 0-5 appear to be the most vulnerable groups with the most imbalanced sex ratios, highest mortality differentials and most pronounced female disadvantage resulting in excessive female mortality. Gender based discrimination in resource allocation seems sufficiently adverse to female children to cancel out their normal advantage in survival rates. Of the practices that result in excess female mortality, infanticide and neglect are most important, although increasingly they are supplemented by sex-selective abortion.

II. Sex Ratio of India

India is one of the few countries in the world where males outnumber females. The sex ratio of Indian population in the century has shown a secular-declining trend except some marginal increases in the censuses of 1951, 1981 and 2001. The net deficit of females, which was 3.2 million in 1901 has now widened to over 35 million in 2001. The sex ratio in 2001 was 933, six points higher than the sex ratio of 927 recorded in 1991. It was Visaria's pioneering study of "sex ratios of the population of India" (1971), which convincingly established the fact that the low female-male ratio (FMR) is mainly due to the sex differentials in mortality. He argued that the contributions of migration, under enumeration of females and sex ratios at birth are having only a marginal influence. Miller in her study "The Endangered Sex" (1981) emphasized the socio-cultural discrimination against female children as the main reason for female mortality. Miller called this as "extended infanticide" where life-sustaining inputs like food, nutrition, health care were denied to girl child. There is a great deal of evidence of girls being given less food and health care than boys, especially in north India. Girls are breast fed for shorter periods, they are taken to fewer medical consultations, and often very late, or not at all, to hospitals (Dreze and Sen 1995).

Changes in sex ratio largely reflect the underlying socio-economic and cultural patterns of a society in different ways. It is an important social indicator to measure the prevailing equity between males and females in a society at a given point of time. There have been discussions concerning the issue of female deficit ever since the first census of British India in 1872. In fact, one scholar considers the female deficit of about 5 million and speculates the reasons behind this, based on the findings of 1881 census (Saraswathi, 1888). Table 1 presents the sex ratio of India from 1871 to 2001. The sex ratio rose from 954 in 1881 to 963 in 1901 and there was decline during the next four censuses. In the beginning, it was considered that under enumeration of females was the main reason for the unfavourable sex ratio for women. However, in later years, the vital statistics showed that in India, males outnumber females at birth.

Table 1: Sex Ratios from 1871 to 2001.

Census	Territory as existing at the 2001 census	Territory as existing at the 1941 census before partition
2001	933	-
1991	927	-
1981	945	-
1971	932	-
1961	941	-
1951	946	-
1941	945	935
1931	950	940
1921	955	945
1911	-	954
1901	-	963
1891	-	958
1881	-	954
1871/72	-	940*

**Based on the actual population enumerated at the census. The census was confined to the Old British Provinces and the former Princely State of Mysore*

Sources: Natarajan (1972), Census of India (2001).

As per the census figures of 1921 to 1951 across different geographical zones, the sex ratio is very low particularly in North- west India. In 1921, the sex ratio at all India level was 956, but in the North-west zone it was 853, though there was some marginal improvement in the subsequent censuses. (Table-2)

Table 2: Sex Ratio of different regions (Zones) of India from 1921 to 1951.

	Sex Ratio			
Zone	**1921**	**1931**	**1941**	**1951**
North India	909	904	907	910
East India	986	967	951	945
South India	1011	1010	1001	999
West India	941	941	941	938
Central India	972	968	966	973
North-West India	853	863	871	883
India	**956**	**951**	**946**	**947**

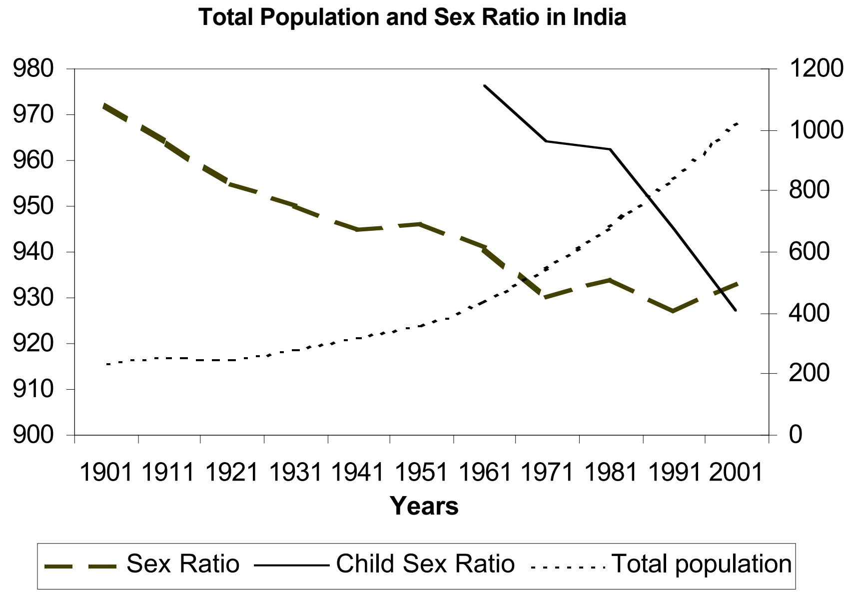
Source: Natarajan (1972).

The sex ratios and child sex ratios for India and major states for the years 1991 and 2001 are presented in Table 3. Though there is a marginal increase in the general sex ratio, it continues to be significantly adverse to women. The sex ratio of 933 has to be seen from two perspectives. On the positive side, this sex ratio shows a marginal improvement of six points from the sex ratio of 1991. However, as a long-term trend over the past 100 years, the sex ratio has shown alarming decline. There is significant reduction in child sex ratio (0-6 years) from 945 to 927 at the national level during 1991 to 2001. The decline is not only in 2001 but it is disturbingly high and continuous since 1961[10] (see graph 1). But the state level figures provide a more disturbing picture in the decline of juvenile sex ratio. There is hardly any state, which has child sex ratio of thousand or more. There were nineteen States/ Union territories recording child sex ratio in the range 959-999 at the 1991 Census and this number is now reduced to eight.

The child sex ratio has registered fourteen points decline in the rural areas at the national level while this decline is thirty-two points in the urban areas. The most disturbing aspect is the decline in the rural areas of twenty-six States and Union territories at the 2001 Census. This decline has been very steep (eighty-two points) in Punjab followed by Chandigarh, Haryana and Uttaranchal, all in the northern region (Table 3). Kerala is the only state recorded a favorable sex ratio for females. In fact, from 1036 in 1991 it went up to 1058 in 2001. However, similar improvement is not reported with regard to child sex ratio. Although there was a marginal increase in general sex ratio at the national level in 1981 and 2001, the child sex ratio continued to decline over the last five decades (976 in 1961 to 927 in 2001).

[10] This was the first census to distinguish between child sex ratio and overall sex ratio.

Graph 1



Source: Census of India, various years.

In other words, the decline in child sex ratio in the urban areas of the country is more than two times the decline seen in the rural areas. The sex ratios by social groups are presented in Table 4. As per 1991 census the sex ratio among Hindus is 925 and for Muslims, it is 930. A marked difference in the sex ratios of Scheduled Castes and Scheduled Tribes is noticeable. At the national level the sex ratio among Scheduled Caste is 922 whereas for tribal population it is little better (972).

Table: 3

Sex ratio and Child sex ratio for India and major states with Decline or increase of Child Sex ratio -1991 and 2001

Sl. No.	State	1991		2001		Change in CSR 1991-2001	No. of districts where CSR has declined between 1991 and 2001			
		Sex Ratio	**CSR**	**Sex Ratio**	**CSR**		By 20 points	By 20-39 points	By 40 or more points	Total
	India	**927**	**945**	**933**	**927**	**-18**	**236**	**123**	**97**	**456(79)**
1	Andhra Pradesh	972	975	978	964	-11	19	3	-	22(95.7)
2	Assam	923	975	932	964	-11	11	4	3	18(78.3)
3	Bihar	907	953	921	938	-15	14	12		31(83.8)

									3	
4	Chattisgarh	985	984	990	975	-9	9	2	-	11(68.8)
5	Gujarat	934	928	921	878	-50	7	5	12	24(100)
6	Haryana	865	879	861	820	-59	1	2	16	19(100)
7	Jharkhand	922	979	941	966	-13	13-	-	3	16(88.9)
8	Karnataka	960	960	964	949	-11	15	5	1	21(77.8)
9	Kerala	1036	958	1058	963	5	5-	-	-	5(35.7)
10	Madhya Pradesh	912	941	920	929	-12	22	10	-	32(71.1)
11	Maharashtra	934	946	922	917	-29	16	9	9	34(97.1)
12	Orissa	971	967	972	950	-17	16	10	2	28(93.3)
13	Punjab	882	875	874	793	-82	-	-	17	17(100)
14	Rajasthan	910	916	922	909	-7	13	6	1	20(62.5)
15	Tamil Nadu	974	948	986	939	-9	20	4	-	24(80)
16	Uttar Pradesh	876	927	898	916	-11	25	15	7	47(67.1)
17	West Bengal	917	967	934	963	-4	11	1	1	13(72.2)

Note: Only states with a population in excess of 20 million as per 2001 census included
Source: Census of India, 1991 and 2001.

Table: 4

Sex ratios by Social Groups -1991

State	All groups	Hindus	Muslims	Urban	Rural	Scheduled Castes	Scheduled Tribes
Andhra Pradesh	972	973	958	959	977	969	960
Arunachal Pradesh	859	708	531	728	880	627	998
Assam	923	915	938	838	934	919	967
Bihar	911	904	938	844	921	914	971
Goa	967	923	866	930	993	967	889
Gujarat	934	932	947	907	949	925	967
Haryana	865	862	872	868	864	860	-
Himachal Pradesh	976	980	840	831	990	967	981
Karnataka	960	960	952	930	973	962	961
Kerala	1036	1041	1048	1034	1037	1029	996
Madhya Pradesh	931	931	924	893	943	915	985
Maharashtra	934	935	903	875	972	944	968
Manipur	958	961	958	975	951	973	959
Meghalaya	955	800	869	910	966	821	997
Mizoram	921	374	100	932	912	157	982
Nagaland	886	552	605	749	917	-	946
Orissa	971	970	938	866	988	975	1002

Punjab	882	867	824	868	888	873	-
Rajasthan	910	908	921	879	919	899	930
Sikkim	878	874	407	750	892	939	914
Tamil Nadu	974	971	999	960	981	978	960
Tripura	945	944	949	958	942	949	965
Uttar Pradesh	879	875	897	860	884	877	914
West Bengal	917	914	923	858	940	931	964
Union territory	-	-	-	-	-	-	-
Andamans and Nicobar Is.	818	797	843	769	837	-	947
Chandigarh	790	769	670	810	632	810	-
Dadra and Nagar Haveli	952	957	831	817	965	925	1022
Daman and Diu	969	963	1022	1024	922	1067	931
Delhi	827	823	798	830	807	834	-
Lakshadweep	943	435	988	930	959	-	994
Pondicherry	979	963	1092	985	970	983	-
India	**927**	**925**	**930**	**894**	**939**	**922**	**972**

Note: 2001 census figures for social groups are not yet released.
Source: Census of India, 1991.

The decline in the child sex ratio in thirty-two states/union territories in their urban areas and in twenty-nine states and union territories in the rural areas speaks about the pathetic status and low desirability of girl child in Indian society. This decline has been coupled with more than fifty points decline in five states/ union territories in their rural areas, and in eight states and union territories in the urban areas including Punjab, Haryana, Himachal Pradesh, Gujarat, Delhi and Chandigarh (Table 5).

Table 5: Distribution of States/Union Territories by broad ranges of decrease in the child sex ratio in rural and urban areas 1991-2001

Range in child sex ratio	1991 - 2001	
	Rural	Urban
No decrease	5	2
1 to 9	6	5
10 to 19	10	7
20 to 29	3	7
30 to 39	4	3
40 to 49	1	2

50 and above	5	8
Total	34	34

Note: Excludes Jammu and Kashmir where census was not held in 1991.
Source: Census of India 2001.

Child Sex-ratio at District Level

The district level data on child sex ratio provides further insight into the pattern that exists at this level within a state/union territory. Table 6 lists the ten districts recording the highest and the lowest child sex ratio in their rural areas. The highest child sex ratio of 1040 has been recorded in South district of Sikkim followed by the tribal district of Bastar in Chhatisgarh (1020).

On the other hand the lowest child sex ratio is seen in case of rural areas of Fatehgarh district of Punjab (747) followed by Salem in Tamil Nadu (763). Six districts of Punjab and three districts of Haryana figure in bottom ten category of child sex ratio in rural areas, thereby implying that the decline in these states is not confined to urban areas only. These states are comparatively more developed economically with a strong agricultural and industrial base.

Table 6: Top ten and bottom ten districts by child sex ratio in age group 0-6 in rural areas – India: 2001

TOP TEN DISTRICTS	Child sex ratio	BOTTOM TEN DISTRICTS	Child sex ratio
1. South (Sikkim)	1,040	Sonipat (Haryana)	788
2. Bastar (Chattisgarh)	1,020	Rupnagar (Punjab)	787
3. Pulwama (Jammu & Kashmir)	1,019	Mansa (Punjab)	780
4. Mokukchung (Nagaland)	1,019	Sangrur (Punjab)	779
5. Upper Siang (Arunachal Pradesh)	1,018	Kapurthala (Punjab)	773
6. Dantewada (Chhatisgarh)	1,017	Ambala (Haryana)	772
7. Kupwara (Jammu & Kashmir)	1,014	Kurukshetra (Haryana)	772
8. Lakshadweep	1,010	Patiala (Punjab)	764

(Lakshadweep)			
9. Anantnag (Jammu & Kashmir)	1,008	Salem (Tamil Nadu)	763
10. Senapati (Manipur)	1,007	Fatehgarh Sahib (Punjab)	747

Source: Census of India 2001.

Though the decline in child sex ratio is more significant in urban areas, it has undoubtedly spread to rural areas of north- western states. The decline of child sex ratio is so widespread that out of 28 states and 7 union territories, only 4 states are free from this socially harmful phenomenon. For Haryana it declined from 879 to 820 and in the case of Punjab the decline was from 875 to 793. Another state which has recorded a drastic decline in child sex ratio during the last decade is Gujarat (from 928 to 878). Further analysis at the district level (See Table 3) indicates that there exist regional variations within each state. In Punjab, all the 17 districts recorded a decline of more than 40 points. However in Gujarat the decline over 40 points is confined to only half of the districts (12 out of 24).

Child Sex-ratio at Tehsil level

Further analysis at the tehsil/taluk level where the figures are available now indicates the existing disparities within states. A lower disaggregation of figures offers a valuable and complementary picture. They illustrate how the differences in sex ratios between the selected states is not only in actual ratio level, but that the very low ratios of the north-west come from the fact that the problem is much more widespread across tehsils/taluks.

Table 7. Distribution of tehsils according to child sex ratio in selected Indian states, 2001

State	Total Tehsils	<750	751-775	776-800	801-825	826-850	851-875	876-900	901-925	926-50	951-75	976-1000	1001-25	1026-50	1051-75	1075-1100	>1100
Haryana	67	1.5	3.0	26.9	31.3	17.9	9.0	7.5	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Punjab	72	4.2	23.6	36.1	25.0	8.3	1.4	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Himachal Pradesh	103**	1.0	0.0	1.0	7.8	11.7	12.6	8.7	1.9	17.5	0.0	9.7	6.8	1.9	0.0	0.0	0.0
Uttranchal	49	0.0	0.0	0.0	0.0	6.1	4.1	10.2	26.5	28.6	16.3	8.2	0.0	0.0	0.0	0.0	0.0

Karnataka	175	0.0	0.0	0.0	0.0	0.0	0.0	1.7	7.4	40.6	40.6	5.7	1.7	0.6	0.0	0.6	1.1
Tamil Nadu	203	1.0	0.0	1.5	0.5	1.0	2.0	4.4	10.8	25.6	39.9	12.3	0.5	0.0	0.5	0.0	0.0

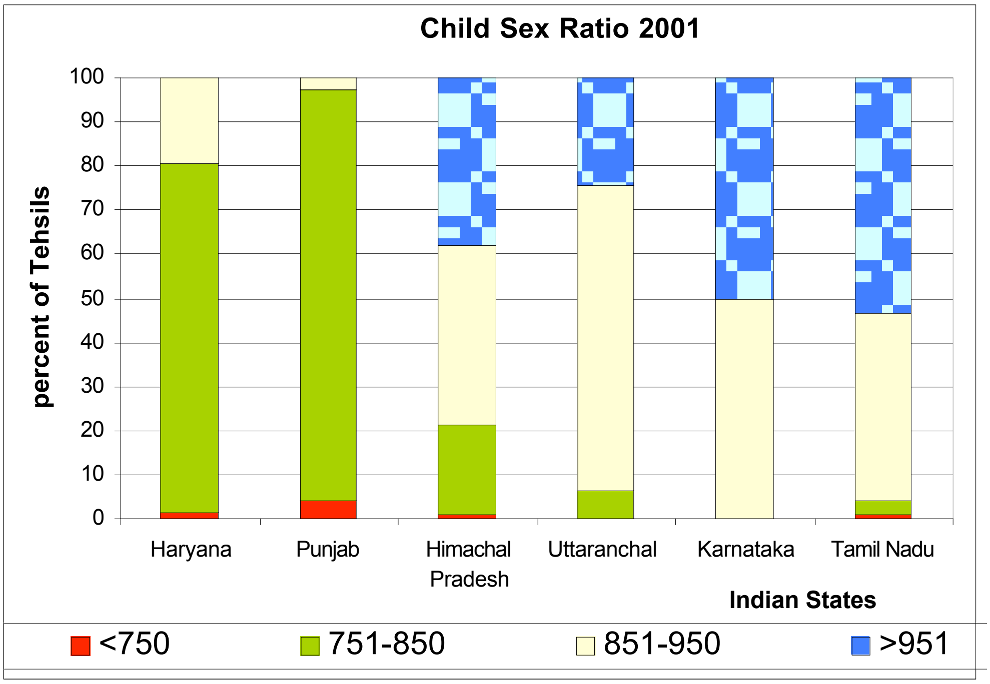
** Tehsil/taluk is the administrative unit below the district*

*** Out of 75 Tehsils and 34 Sub tehsils in Himachal pradesh, data were not available for 5 tehsils and 1 sub-tehsil belongs to Kinnaur District*

Source: Provisional Population Totals, Paper 2 of 2001, Census of India, Haryana, Himachal Pradesh, Punjab, Uttaranchal, Karnataka and Tamil Nadu.

It is clear that Punjab has no tehsils with a sex ratio over 900. The scenario is only slightly better in Haryana. Both states have their main cluster below 825/1000. In Himachal Pradesh, on the other hand, the tehsils exhibit remarkable disparities, from very poor levels to well above the national average. Moving south, a majority of taluks in Karnataka and Tamilnadu exhibit ratios in the range 926-975, close to the national average. South India has historically shown better sex ratio than the north, but, on the other hand, also have pockets of exceptionally skewed ratio. Graph 2 illustrates this and it also highlights how the tehsil/taluk level sex ratios of Himachal Pradesh vary in the same way the ratios for Tamil Nadu do, in a much more "heterogeneous" way than the figures for Haryana and even more so for Punjab which both have a "homogeneous" pattern of figures. This indicates how the problem seems to be both more widespread and more matured in Punjab and Haryana in the sense that it is more spread across geographical areas and social groups.

Graph: 2



Sex Ratio at Birth

The two rounds of National Family Health Surveys (1992-93 and 1998-99) provide information at the state level regarding the sex ratio at birth (SRB). According to this, the SRB increased from 1.06 to 1.08 between 1978-92 and 1984-98 in India as a whole. This is slightly higher than the naturally occurring SRB of about 1.05. In southern states, the SRB is close to 1.05, an indication that the sex selective abortion is rarely practised. However, the SRB was 1.14 in Haryana and 1.20 in Punjab during 1984-98, a clear indication of large scale sex selective abortion (Retherford and Roy 2003). It was also found that sex selective abortion is stronger among the following sub groups - Urban women, women with middle school complete or higher education, and women living in households with a high standard of living.

Table 8. Changes in sex ratio at birth for India and selected states

Year	India		Haryana		Himachal Pradesh		Punjab		Tamil Nadu		Karnataka	
Birth order	1978-92	1984-98	1978-92	1984-98	1972-98	1984-98	1972-98	1984-98	1972-98	1984-98	1972-98	1984-98

All births	106	108	110	114	107	108	114	120	102	105	105	105
1	105	107	109	110	115	105	109	101	100	105	109	104
2	107	108	100	114	100	107	111	123	99	105	101	109
3	107	108	114	129	108	117	117	136	110	101	101	102
4 plus	106	108	116	108	106	107	122	134	104	105	107	104

Source: Retherford and Roy, 2003.

The changes in sex ratios at birth show how discrimination against girls has increased and become more selective as it has become stronger against higher birth order girls (Table 9). It is particularly evident for Haryana, Himachal Pradesh, Karnataka and to some extent Tamil Nadu for which the earlier time periods recorded higher ratios (less adverse to females) for the first birth order child than the second. In the second time period the ratios were lower for the second birth than for the first. The implicit indication is that this increase is caused by a decline in fertility and a shift toward smaller families, which has given less room to daughters in the family.

Sex Selective Abortion

In India, the medical termination of pregnancy (MTP) act was enacted in 1971 as a health measure to protect women. The revised MTP Act of 1975 allows medical termination of pregnancy (abortion) for any of the reasons such as -

a) The pregnant woman has a serious medical disease or condition that would endanger her life if the pregnancy were to continue;
b) Continuation of pregnancy would entail a substantial risk of physical and mental handicap to the newborn child;
c) The pregnancy resulted from rape;
d) The socioeconomic circumstances of the mother would endanger the health of the newborn child; and
e) The pregnancy occurred because of failure of a contraceptive method.

The last reason legalizes abortion on demand, in effect. Despite legalization of abortion, more illegal abortions are being performed in India than legal ones. While government statistics estimate legal abortions at about 0.6 million annually, illegal abortions are estimated to be 8 to 11 times as high as legal abortions (Chhabra, 1996).

Birth histories collected during India's National Family Health Surveys (first in 1992-93 and then in 1998-99) show an unusually large proportion of male births in some population groups, which suggest that female fetuses are being aborted. Sex selective abortion is a two-step process involving determination of the sex of the fetus followed by abortion if the fetus is not the desired sex. Three methods are commonly used in India to determine the sex of a foetus; amniocentesis, chorionic villus sampling, and ultrasound. During the last two decades, prenatal diagnosis technologies have proliferated rapidly in India, primarily used to avoid the birth of daughters, as there exists a strong preference for sons. Couples who have achieved their desired family size may not stop having children if they have not reached their desired number of sons. Soon after the introduction of the sex-determination tests, advertisements began to spread both in urban and rural areas by private practitioners motivated by high profit margin in providing abortion services; "Pay Rs 500 (US Dollar 10) now rather than Rs. 500,000 (US Dollar 10,000) later". These attractive advertisements were specifically addressing prospective parents to abort female fetuses in order to avoid future dowry expenses. Daughters are considered as a 'liability' for the family by these advertisements and in a way they exhort women to avail themselves of the services of the clinic to escape the future financial burdens arising from getting the daughter married. (Mazumdar, 1994).

Jeffery, Jeffery and Lyon (1984) observed that clinical services offering sex determination and abortion had spread in the villages in Uttar Pradesh by the early 1980s. A study conducted by Kulkarni (1986) revealed that 64 per cent of the 42 gynecologists interviewed were performing amniocentesis solely for sex determination purpose. Only in less than 10 per cent of the cases, it was for the detection of genetic defects. Srinivasan *et. al* (1995) observed that with the spread of ultrasound, sex-selective abortion is now observed in all segments of rural society in Bihar.

Misuse of sex determination tests has been a subject of media attention for many years. Health activists and women's organizations voiced their concern forcing the government to act. In 1994, Government of India banned the tests at national level, with the Pre-natal Diagnostic Techniques (PNDT) (Regulation and Prevention of Misuse) Act. As per this new legislation, only government- registered clinics and laboratories may employ prenatal diagnostic procedures that could be used to assess the sex of the fetus. The new Act also specifies that no prenatal diagnostic procedures may be used unless there is a heightened possibility that the fetus suffers from a harmful condition or genetic disease. It also states, "no person conducting prenatal diagnostic procedures shall communicate to the pregnant women concerned or her relatives the sex of the fetus by words, signs, or in any other manner".

This Act was again amended in the light of the newer techniques of pre-conception tests and the amended rule has come into effect from February, 2003. Now the Act is renamed as the Pre-conception and Pre-natal Diagnostic Techniques (Prohibition of Sex-selection) Act, 1994 (See Annexure 1).

Even after all these restrictions and campaign against this practice, the business of sex determination thrived in all parts of the country. "This perverse use of technology is encouraged and boosted by money-minded practitioners who are out to make Indian women "male producing machines" (Patel, 1989). Some of them even went to the extent of arguing that the parents have the right to ensure the "quality of their offspring", indirectly meaning the presence of male children. In 1993, a BBC documentary highlighted the way in which greedy doctors misused the technology by offering "services" at the customer's doorstep by driving around with a portable ultrasound machine in their car. Ultrasound is considered by many couples to be a good investment in order to save many times that sum in future dowry payments if the fetus is a female (Sudha and Rajan 1999). The prenatal diagnosis technologies were misused which intensified the oppression of women particularly in cultural settings such as in India where women already have a low status (Gupta 2000).

Female foetuses are liable to victimisation on the basis of their sex alone even before they are born. Only far reaching social changes that aim at increasing female autonomy, female economic power and the value of the girl child are likely to make a significant impact on the demand for sex-selective abortion. Interestingly, there is no reliable statistics available on sex selective abortion at the state or national level in India. An indirect estimate using the data from two rounds of National Family Health Survey indicates more than 100,000 sex-selective abortions in India every year (Arnold, Kishore and Roy 2002). The evidence of substantial sex-selective abortion in states such as Punjab, Haryana, Delhi and Maharashtra is consistent with the high rates of use of ultrasound and amniocentesis (Retherford and Roy 2003).

Using the data from the National Family Health Survey of India (1998-99), Arnold, Kishore and Roy (2002) provide evidence on the widespread use of ultrasound for sex-selective abortions in India, and for particular states. NFHS-2 is a nationally representative sample survey of more than 90,000 ever-married women aged 15-49. Firstly, an evaluation of sex ratios at birth provides the extent of sex-selective abortions because in general (without any sort of intervention) the sex-ratios at birth are usually between 103 and 106 males per 100 females in most societies (United Nations, 1998). If the sex ratios at birth are above 106, it is implied that pre-birth interventions are further reducing the chances of a female birth. As per NFHS-2, the sex ratio at birth in India was 106.9. It was 105.1 five years before as per NFHS-1. Interestingly, the sex ratio at birth varies between 107 to 121 in different states of India (see Table 9); this clearly illustrates the reality that in many parts of India, the female births are avoided successfully by using (or misusing) the modern technology. Women with no sons are more likely to undergo these tests than other women (Table-10). There is a difference in the pattern of adoption of these technologies between northern and southern states of India (Tables 10).

Table: 9.

Sex ratios at birth for children born in the five years preceding the survey, India, NFHS-1 and NFHS-2.

State	1992-93 NFHS-1	1998-99 NFHS-2
Andhra Pradesh	100.2	103.2
Arunachal Pradesh	115.5	117.5
Assam	96.8	114.5
Bihar	96.8	106.7
Delhi	**108.0**	**120.8**
Goa	105.9	115.5
Gujarat	**101.9**	**107.1**
Haryana	**113.5**	**117.8**
Himachal Pradesh	112.3	112.6
Jammu and Kashmir	112.7	108.3
Karnataka	105.4	104.6
Kerala	99.0	107.7
Madhya Pradesh	108.1	104.5
Maharashtra	106.1	110.6
Manipur	90.6	103.0
Meghalaya	109.0	113.8
Mizoram	104.6	108.1
Nagaland	105.7	106.5
Orissa	110.9	106.0
Punjab	**114.1**	**116.2**
Rajasthan	110.8	108.8
Sikkim	U	110.1
Tamil Nadu	97.9	105.7
Tripura	103.5	103.4
Uttar Pradesh	105.4	103.6
West Bengal	103.8	108.8
Group A[1]	**107.7**	**111.6**
Group B[2]	100.8	104.7
India	**105.1**	**106.9**

Note: Estimates for all - India exclude Tripura.
U = Unavailable
[1] *Gujarat, Haryana, and Punjab*
[2] *Andhra Pradesh, Karnataka, Kerala, and Tamil Nadu*
Source: Arnold , Kishore and Roy (2002).

Table: 10.

Percent of live births in the three years preceding the survey for which ultrasound, amniocentesis, or either was done as part of an antenatal checkup, by number and sex of living children at the time the woman got pregnant, Group A states Gujarat, Haryana and Punjab. Group B states Andhra Pradesh, Karnataka, Kerala and Tamil Nadu, NFHS-2, 1998-99.

Number and sex of living children	Ultrasound			Amniocentesis			Ultrasound or Amniocentesis		
	India	Group A*	Group B**	India	Group A*	Group B**	India	Group A*	Group B**
No children	**19.9**	**24.4**	**34.1**	**2.4**	**2.2**	**3.3**	**20.7**	**24.9**	**35.3**
One child	**14.5**	**18.2**	**29.0**	**1.7**	**1.0**	**3.7**	**15.3**	**18.3**	**29.0**
One son	13.8	18.7	25.8	1.6	0.9	3.2	14.5	19.0	27.8
No sons	15.3	17.6	28.1	1.9	1.1	4.2	16.1	17.6	30.4
Two children	8.4	12.8	16.0	1.0	0.2	1.8	9.0	13.0	17.4
Two sons	6.7	8.2	16.0	1.2	0.0	3.5	7.6	8.2	18.8
One son	7.0	8.2	14.7	0.7	0.3	1.5	7.4	8.5	15.6
No sons	12.4	23.1	18.1	1.3	0.4	1.0	13.1	23.1	19.1
Three children	**5.5**	**10.5**	**14.4**	**1.3**	**0.0**	**3.3**	**6.2**	**10.5**	**16.6**
Three sons	2.7	(0.0)	(8.7)	1.0	(0.0)	(6.5)	3.7	(0.0)	(15.3)
Two sons	4.1	10.2	18.4	0.2	0.0	0.0	4.3	10.2	18.4
One son	4.7	10.2	11.6	1.2	0.0	5.3	5.3	10.2	14.1
No son	12.3	16.6	18.3	3.7	0.0	1.9	14.0	16.6	20.3
Four or more children	**2.8**	**6.9**	**8.7**	**0.5**	**1.4**	**1.4**	**3.0**	**6.9**	**9.6**
All sons	1.7	(5.8)	(8.1)	0.2	(0.0)	(0.0)	1.8	(5.8)	(8.1)
Sons > daughters	2.3	0.0	12.2	0.1	0.0	1.3	2.4	0.0	13.5
Sons = daughters	2.6	5.2	5.0	0.3	0.0	0.0	2.8	5.2	5.0
Sons < daughters	3.0	8.2	6.5	0.8	2.5	0.9	3.4	8.2	7.4
All daughters	3.9	11.0	(12.7)	0.8	1.6	(4.8)	4.1	11.0	(14.5)
Total	**12.1**	**17.0**	**26.1**	**1.5**	**1.2**	**3.1**	**12.7**	**17.2**	**27.7**

Note: Table excludes Tripura
**Group A includes Gujarat, Haryana and Punjab*
***Group B includes Andhra Pradesh, Karnataka, Kerala and Tamil Nadu*
( ) Based on 25-49 unweigthed Cases
Source: Arnold , Kishore and Roy (2002).

Using the NFHS data again, it was observed that at the national level, the sex ratio at birth for mothers who had either ultrasound or amniocentesis was 934 female births per 1000 male births (Table 11). This lower sex ratios for births to mothers who had either of these tests can be attributed to sex-selective abortions. NFHS survey demonstrated that ultrasound and amniocentesis are often used for sex determination and sex selective abortions of female fetuses have been rampant in many states of India, particularly in Punjab, Haryana and Gujarat. Though ultrasound and amniocentesis tests on pregnant women are legal in India, the divulgence of the sex of the child to the parents is illegal since 1996. However, the legislation has been a miserable failure in preventing the couples seeking sex determination and the medical practitioners performing them. Enforcement of legal procedures alone will not reduce these incidences unless there are significant changes in the attitudes and social life.

Table: 11.

Sex ratios at birth for children born in the three years preceding the survey whose mothers received ultrasound, amniocentesis, or neither as part of an antenatal checkup, NFHS-2, 1998-99

State	Ultrasound	Amniocentesis	Ultrasound or amniocentesis	Neither
Gujarat	123.1	*	122.0	101.9
Haryana	183.8	*	186.3	117.0
Punjab	116.7	*	118.1	104.6
Group A[1]	128.7	169.7	128.4	106.0
Group B[2]	100.3	91.3	100.6	103.1
India	112.4	120.3	112.3	107.1

Note: Estimates for all-India exclude Tripura.
[1]*Gujarat, Haryana, and Punjab*
[2]*Andhra Pradesh, Karnataka, Kerala, and Tamil Nadu*
** Not shown; based on fewer than 25 un-weighted cases.*
Source: Arnold , Kishore and Roy (2002).

III. Infanticide

It is well documented that infanticide in India was prevalent among certain communities during the nineteenth and early part of the twentieth century. The castes that practised female infanticide in the 19^{th} century included the Rajputs, Jats, Ahirs, Gujjars and Khutris. The British first discovered the practice of female infanticide in 1789. The British Resident at Baroda, in March 1808, reported that annually 20,000 girls were killed mercilessly in Jadeja Rajput households. The reasons cited for this practice was avoidance of financial stress and humiliation (Sen, 2003). It was found that there were no daughters in a village in eastern Uttar Pradesh (Panigrahi, 1972). In the household of the Rana of Porbander there had been no grown up daughters for more than 100 years. It was also reported that in the whole of Kathiawad there were only 63 female children alive aged between 1-15 years, amidst Jadeja Rajputs. The 1872 census of Kaira district has shown that the peasant caste of Lewa Patidars had only 39 to 53 girls to 100 boys. The low proportion of females in this community was confirmed in successive census returns of 1891, 1901 and 1911.

It was a practice among the Rajkumar Rajputs of Jaunpur to destroy their daughters by not allowing mother's to nurture the child. The common reason cited for this inhuman practice was the difficulty to find a suitable groom for their daughters before the age of puberty and the disgrace that was attached to the failure of the family in this respect.

The British census superintendents were concerned with the low sex ratio and female infanticide in certain parts of the country and among some castes, clans and tribes. The British government passed an Act in 1870 banning the horrible practice of female infanticide in the United Province of Agra and Oudh, which was later extended to Punjab Province and Rajputana Agency. The Census Commissioner of India for the 1911 census documents; “Hypergamy, or the rule that a girl must be given in marriage to a man of higher rank, makes it very difficult and very expensive to obtain a suitable husband, while the admission of inferiority which is implied in giving a girl in marriage is a blow to a man's pride. Apart from this, a Rajput husband often tyrannises his father-in-law. Female infanticide was resorted to in order to avoid these troubles which the marriage of a daughter involved". 1911 census also states that certain communities suspected of practicing female infanticide were placed under police surveillance.

The 1921 census classified castes in major regions of north India into two groups: those that practiced female infanticide and hence showed fewer females and those that did not and hence showed a higher proportion of females. The Census Commissioner of Gwalior (1921) wrote "It is very striking that Tonwarghar (presently known as Morena district), the habitat of Tonwar Thakurs, should show as in 1901 and 1911 the lowest proportion of females to males. Tonwar Thakurs, of all castes and races, show the smallest ratio of 526 females in the whole state". Though the existence of female infanticide in Gwalior was not openly stated in the census report of 1931, it would be illogical to attribute the lowest sex ratio to the hereditary incapacity of people to produce female children. The sex ratio among the Kachhwaha Rajputs was 712, it was 745 among Kayasthas and 776 among Brahmins in

1931. While historically reviewing the prevalence of female infanticide, Premi and Raju (1998) identify two reasons. Firstly the incidences of hurting Rajput pride because of their daughters led to a collective decision to destroy all their daughters as soon as they were born. Secondly, the prevailing custom of a woman having to spend the night in a Muslim household after her marriage, brought shame to Rajputs.

Though infanticide had been practised in various parts of the world, we have very little dependable primary data on this subject. Female infanticide was quite common in pre-communist China, though it has now been replaced by foeticide. Other than census reports, many studies also confirm the prevalence of this practise as early as 1800 in many parts of India (Panigrahi, 1976, Viswanath, 1973 and Clark, 1983). It is quite evident that female infanticide was not universally practiced in India and even in those areas where it was reported, not all communities were involved in it (Miller, 1997). Though it was not very common, the female infanticide was prevalent in South India also. Thurston (1975) refers to this practice being prevalent among the Kallar community in the 19^{th} century. Since the dowry was not that virulent in the south, fewer castes felt it necessary to get rid of their daughters. However, this practice was reported from other communities also from various parts of Tamil Nadu during the last two decades, which received wide attention of media and researchers (George et al, 1992; Chunkath and Athreya, 1997).

A Study in Bihar (Shrivastava, 1998) states that this barbaric crime is generally carried out by *dais* Traditional Birth Attendants (TBAs) in rural areas and by *compoundars* and nurses with the knowledge of doctors in urban areas. Another study by Premi and Raju(1998) found that certain caste groups in selected pockets of Madhya Pradesh still resort to female infanticide. The factors responsible are high cost of dowry due to the prevailing custom of hypergamy and upholding of Rajput pride.

In Tamil Nadu, it was observed that the most commonly used methods for killing infants include "poisoning by the latex of the calotropis plant, organophosphate poisoning (pesticide), sedative overdose, strangulation, neglect (starving the baby to death, which does not leave any forensic evidence), feeding the child paddy grain soaked in milk or juice extracted from tobacco leaves. Asphyxiation by swaddling the baby in a wet cloth is also practised" (Samuel and Hebbare, 1998).

In South India, certain districts of Tamil Nadu are known for this inhuman practice even now. Though there is no drastic decline in child sex ratio of Tamil Nadu between 1991-2001 (as reported in states like Haryana, Punjab and Gujarat), districts like Salem (826), Dharmapuri

(878), Theni (893) and Namakkal (896) recorded lowest figures. There are certain taluks in these districts which reported shocking anomalies in Juvenile sex ratios (Omallur (589), Etappadi (714), Pennagarm (776) and Mettur (790).

A large-scale survey conducted by the Tamil Nadu State Health Department provides the extent of female infanticide in some districts. The survey covered 10,37,630 households with a total population of 44,97,086 in 1996. According to this source, the proportion of female infanticide to female infant death is 15.4 at the state level. However, in districts of Dharmapuri and Madurai, it is as high as 59 and 54 per cent (Table 12). The available PHC records also confirm the incidence of female infanticide in certain pockets (Chunkath and Athreya, 1997). Infant deaths due to "social cause" were high in districts of Dharmapuri, Salem and Madurai (Table 17). The 2001 census reconfirms the rampant practise of female infanticide in parts of Tamil Nadu, a practise still in existence despite overall socio-economic development. Though there are efforts by the government and voluntary agencies to change the attitude of men and women in these areas (see Box -1), this practice is slowly spreading to neighbouring taluks and to other communities. The Tamil Nadu Government introduced a cradle- baby scheme in 1992. Under this scheme, cradles were placed at Primary Health Centers, Hospitals, Orphanages and Children's Homes. Mothers who did not want baby girls were asked to drop their babies in the cradles.

Table: 12

Total Infant Deaths, Female Infanticide Deaths and 'Female Infanticide Rates', Sample Survey for 1995

District	Total Infant Deaths			Female Infanticide Rate
	Male	Female	Female Infanticide Deaths	Female Infanticide as per cent of Female Infant Deaths
Dharmapuri	182	308	183	59.4
Madurai	149	208	112	53.8
Salem	146	174	58	33.3
Tiruvannamalai	-	-	-	-
Sambuvarayar	89	99	9	9.1
Dindigul	128	135	28	20.7
Villuppuram Ramasamy	118	134	1	0.7
North Arcot Ambedkar	99	111	-	-
Perambalur Thiruvalluvar	108	110	1	0.9
South Arcot Vallalar	129	135	1	0.7

Pudukottai	114	109	-	-
Periyar	101	88	-	-
Coimbatore	74	665	-	-
Chidambaranar	84	80	-	-
Kanyakumari	33	27	-	-
Karur Dheeran Chinnamalai	96	91	9	9.9
Nilgiris	45	38	-	-
Thanjavur	94	76	-	-
Tiruchirapalli	136	120	1	0.8
Kamarajar	111	91	-	-
Chengai MGR	96	81	-	-
Nagai Quaid-e-Milleth	102	77	-	-
Tirunelveli Kattabomman	130	95	-	-
Pasumpon Muthuramalinga Thevar	86	63	-	-
Ramanathapuram	135	98	-	-
Tamil Nadu	**2585**	**2613**	**403**	**15.4**

Source: Govt. of Tamil Nadu (1996) Directorate of Public Health (DPH) Survey, Madras as cited by Chunkath and Athreya (1997).

In Tamil Nadu, the naturally higher infant mortality rate among boys[11] is reversed to be higher for girls and in some districts, such as Dharmapuri district, it is as much as 69% higher for girls than for boys. In that same district as many as 59.4% of the female infant deaths were cases of infanticide (Table 12). It is also highly noteworthy to point out how the districts of Dharmapuri, Madurai, Salem and Dindigul differ from the other districts of Tamil Nadu. Their extremely high female infant death rates drag down the whole states infant death rates to a level where it is reversed.

Table: 13 Sex Ratio 1941-2001, Juvenile Population: All India, Tamil Nadu State and Districts

Territory	**1941 (0-4 yrs)**	**1951 (0-4 Yrs)**	**1961 (0-4 yrs)**	**1971 (0-4 yrs)**	**1981 (0-4 yrs)**	**1991 (0-6 yrs)**	**2001 (0-6 yrs)**
Dharmapuri	-	-	-	993	955	905	878
Madurai	1011	978	988	981	970	918	927
Theni							911*
Salem	1010	1016	990	966	900	849	826
Namakkal							896*
Tiruvannamalai Sambuvarayar	-	-	-	-	-	964	952
Dindigul	-	-	-	-	-	934	929
North Arcot Ambedkar (Vellur)	1013	995	998	988	999	962	937
South Arcot(Cuddalore)	1007	1015	1017	981	973	970	938

[11]Males exceed females in numbers at the time of birth and it is believed that somewhere around 943-952 female births take place per 1000 males, which is later offset by a naturally higher level of mortality for males. (Census of India, *Provisional Population Tables*, Paper 1-of 2001).

Viluppuram							969*
Pudukottai	-	-	-	-	999	976	965
Pariyar (Erode)	-	-	-	-	964	929	936
Coimbatore	1006	979	987	978	969	966	951
Chidambaranar (Thoothekkudi)	-	-	-	-	-	964	953
Kanyakumari	-	-	966	978	997	970	967
Nilgiris	921		998	985	987	968	990
Thanjavur	1017	1008	997	984	987	965	950
Thiruvarur							974*
Nagapattium							960*
Tiruchirapalli	1035	1017	1005	994	969	955	949
Karur							923*
Perambalur							945*
Ariyalur							950*
Kamarajar (Virudhunagar	-	-	-	-	-	946	962
Chengai	999	999	1015	986	996	970	-
Thiruvellur							954
Kanchipuram							961
Nagai Quaid-e-Mileht	-	-	-	-	-	971	-
Tirunelveli-Kattabomman	990	1042	986	995	973	955	952
Pasumpon Muthuramalinga Thevar (Shivaganga)	-	-	-	-	-	958	946
Ramanathapuram	1042	1015	995	998	969	960	964
Madras	942	928	976	969	987	962	968
Tamil Nadu	1010	999	995	984	974	948	939
INDIA			**976**	**964**	**962**	**945**	**927**

Note: District names as of 1991 have been used in this table.
**New Districts*
Source: Census of India, various volumes.

In the districts where infanticide is practiced it is also visible from the records how the sex ratios of those districts have declined over the decades, indicating that the cause of declining sex ratios to a large degree is infanticide (Table 13).

Table: 14.

Infant Deaths and Infanticide as per PHC Records, Districts of Tamil Nadu, 1995

District	Infant Deaths			Infant Deaths due to " Social Cause"		
	Male	Female	Total	Male	Female	Total
Dharmapuri	1183	2375	3558	57	1199	1256
Madurai	965	1570	2535	8	571	579
Salem	1400	2419	3819	58	1033	1118
Tiruvannamalai Sambuvarayar	594	692	1286	0	2	2
Dindigul	684	789	1473	3	129	132
Villupuram Ramasamy	924	895	1819	1	11	12
North Arcot Ambedkar	957	1087	2044	1	177	178
Perambalur-Thiruvalluvar	391	374	765	2	1	3
South Arcot Vellalar	623	578	1201	0	1	1
Pudukottai	458	430	888	2	3	5
Pariyar	694	655	1349	0	69	69
Coimbatore	647	545	1192	0	0	0
Chidambaranar	491	393	884	0	0	0
Kanyakumari	154	152	306	0	0	0
Karur	240	225	465	1	13	14
Nilgiris	173	172	345	0	0	0
Thanjavur	531	453	984	0	0	0
Tiruchirapalli	588	549	1137	1	11	12
Kamarajar	542	429	971	1	5	6
Chengai	980	834	1814	0	1	1
Nagai Quaid-e-Mileht	772	651	1423	0	0	0
Tirunelveli-Kattabomman	900	775	1675	0	0	0
Pasumpon Muthuramalinga Thevar	310	247	557	0	0	0
Ramanathapuram	545	452	997	0	0	0
TAMIL NADU	**15746**	**17741**	**33487**	**162**	**3226**	**3388**
(excluding Madras district)						

Source: PHC Records, as cited by Chunkath and Athreya (1997).

Box: 1 Change of Heart

- Mani* had spent more than Rs. 50,000 to marry off the first of his two daughters by his first wife, Saroja. His second wife, Selvi whom he married after Saroja died, gave birth to a girl, after having borne a son. Mani put pressure on Selvi to get rid of the newborn, but she was not so easily persuaded. Despite pressure from her husband and in-laws, she held out with support from her mother. Thanks to her determination, the baby born on 30 April survived the night.

  The following day, the block team of the *Nam Nalam Ariya Kalaipayanam* came to the particular panchayat, where Selvi and Mani lived. Around 11 a.m., the couple watched the troupe perform in front of their house. They were moved by the songs and skits opposing female infanticide and highlighting the positive role of daughters in taking care of aged parents. Latter in the day, the panchayat president told Pandian, the block team manager, and Munian, the area literacy coordinator that, after seeing the *Kalaipayanam* performance, Selvi had decided to keep her girl baby despite pressure mounted by her in-laws. Her husband, Mani, was no longer opposing her decision to keep the child. The campaign thus played a crucial role in the lives of this couple, who were landless agricultural labourers.

- Manickam has two daughters and a son by his first wife who died a few years ago. His elder daughter, Kuppu, was married by paying a dowry of Rs. 30,000 and four sovereigns of gold. He also has a four-year-old daughter, Latha, by his second wife, Palaniammal. When Latha's mother gave birth to another daughter at her natal home in a nearby village, Manickam made a sinister plan. He took Latha on his bicycle from his village to Palaniammal's maternal home, where she and the newborn were staying. He gave Latha a bottle of the pesticide, Folidol, and instructed her to inform her mother that the newborn should be given the "medicine" in the bottle. Fortunately for the newborn, Palaniammal was unwilling to oblige Manickam. Around this time, Palaniammal's father and sister saw the *Kalaipayanam*. They came home convinced that the baby must be allowed to live. They assured Palaniammal of their support and this strengthened her resolve. She kept the baby even though she was uncertain of whether Manickam would take her and the baby back. She raised the issue with the health campaign leadership. The panchayat's intervention was then sought, and Manickam has since agreed to take Palaniammal and the baby girl.

IV. Discrimination and Neglect

The underlying workings of female discrimination are undoubtedly highly complex. However, a number of broad factors have been identified which together create a situation where sons are preferred and daughters suffer discimination and neglect.

The patterns of inheritance are typically patrilineal in India with property passing from father to son. (Miller, 1981, Das Gupta, 1987, Das Gupta et al, forthcoming, Kabeer, 1996, Croll, 2000)[12] Upon marriage the bride leaves her natal home to live with the family of her husband. In this exogamous lineage system women are left out. They become dispensable essentially because they count for very little as individuals. (Das Gupta et al, forthcoming) There is a double loss of a daughter leaving the family together with the fact that the benefits from investments made in a daughter's upbringing will accrue to the new family. In other words, even though a woman's status might improve, it does not change the nature of the social order as it does not directly correlate to a change in her position within it. While valuing adult women's contributions to the household, the system generates strong disincentives to raising daughters.

A common explanation for the existence of son preference and daughter discrimination is that sons can provide old age support. In India, the majority of the old live with married children who to an overwhelming degree are sons. In the Indian context, characterised by high levels of uncertainty, where no institutional alternative to the family as a source of social insurance has emerged, parental decisions are likely to be powerfully motivated by their concerns about their own security in old age. (Kabeer, 2000) The existence of such an understanding and commitment between parents and children, commonly called an inter-generational contract (Croll, 2000, Kabeer, 2000, 1996, Greenhalgh, 1985, Collard, 2000), is one of the factors which appears to have remained unchanged through the overall social and economic changes. Sons are also important because they alone may perform the funeral rituals of the parents. (Mutharayappa et al, 1997) Another factor leading to strong disincentives and discrimination against daughters is the existence of the dowry system, which, together with marriage costs is a major drain on household resources. (Menski, 1998) Since there is a great ritual importance in having a daughter to

[12] There are exceptions to this with both matrilineal and bilateral inheritance (Agarwal, 1994).

give away in marriage ("Kanyadana"), a first daughter is accepted positively but with an anticipation of the burden of future marriage costs. The discrimination against girl children is thus, not general but selective with higher discrimination of higher birth order daughters. (Das Gupta, 1987) Coupled with exogamy, increasing expenses on daughters become a net drain on household resources. Thus, women have limited or no possibilities to contribute to their parents' welfare. This creates an apparent dichotomy between the value of a girl to her parents and that of a woman to her in-laws.

It has also become more costly to raise children as education has become more important. (Caldwell et al, 1982, Croll, 2000) The desire for smaller families has in turn reduced the number of children available for parent care in old age. Parents feel more vulnerable due to greater educational, social and geographical mobility of the younger generation as it threatens the future flow of resources to the older generation. This suggests how socio-economic changes may have strained the conditions for an inter-generational contract, making the disincentives against raising daughters even stronger.

Within the family there appear to be two main factors causing daughters to be the first to be sacrificed; a gender dimension and a generational dimension. (Croll, 2000, Greenhalgh, 1985) The inter-generational contract works to counter shifting dependency situations between generations as a way of insuring against vulnerability. In so doing, it also creates an hierarchical structure of the family based on resource flows. In other words, there is a gender hierarchy as well as a generational hierarchy and in both of them daughters come last[13]. An expression of this is how a woman's bargaining position within the household increases with the birth of a son. (Kandiyoti, 1985, Dyson & Moore, 1983, Agarwal, 1994, 1997, Kabeer, 1996)

V. Implications

The declines in overall sex ratio in general and child sex ratio in particular are not without consequences. The fact that distortions in sex ratio, unless it is of a substantial magnitude, or is very pervasive and continuous for a fairly lengthy period, usually takes long to appear significantly in the social landscape and arrest attention. The implications of sustained decline also have long gestation periods for manifestation to

[13] Preliminary results from conducted Focus Group Discussions in Karnataka indicate how girls are not discriminated against consciously. While the awareness of how social structures are adverse to girls and women is high, the awareness of how to change appears to be low.

come to the fore. Before delineating the effects of sex ratio declines in the selected states, one may keep in mind that many of these, covering social, economic, cultural, demographic and ethical domains are speculative, with little empirical as well as research support.

One of the many immediate consequences of sex ratio imbalances is the ‘marriage squeeze’ characterised by inability of men in marriageable age to find suitable partners. Marriage is universal in India and men typically marry younger women with age gap normally not exceeding five years. If the already secularly declining child sex ratio plummets further, there is a probability that each successive cohort will contain lesser and lesser women relative to men. As (in and out) migration do not substantially alter the cohort sex composition, it is likely that more men compete for comparatively lesser number of women in the marriage market. However, it is simplistic to assume that the demographic factor alone influence the ability to find women. In Indian set up, social, cultural and economic factors also determine matrimonial alliances decisively. For instance, religious and caste affiliations, parental preferences, kinship norms, village exogamy, individual status in terms of physical appearance, educational qualifications, earning capabilities, etc, also robustly determine the choices of boys and girls, besides *dowry* transactions, if any. For men seeking to marry, there are several ways to overcome the shortages in brides-to-be, with the assumption that even low, yet there is substantial unevenness in sex ratio among different social and economic subgroups in the region. These include diluting the caste endogamy in marriages and expanding the choices to girls from other castes, restricting the geographical exogamy further, postponing the marriage longer by marrying late, looking for brides who may be younger than usual or even older, etc. In any case these options are still rife with consequences that are not desirable. There are reports that scarcity of women in an environment of poverty and lack of development has led to re-emergence of “bride price”, the system of paying money to obtain a wife, and sharing of wives in some communities in Rajasthan, who are in the lower echelons of the society in terms of caste hierarchies and economic position (India Today, September 1, 2001). If this continues in a wider scale, it is the rich and powerful who are better poised for matrimony than others. Some envisage, that difficulties and inability in finding a female partner would lead to social tensions, particularly manifested in crime against women. The age at marriage, when involuntarily pushed upward as a result of inability in finding a match will result in longer spousal gaps.

The increasing and widespread incidence of " Boy-Girl tests" in urban centres will have serious consequences. In Mumbai and Delhi, the child sex ratio is far below the national average and the girl population has dropped in 23 cities[14]. One argument put forth by the medical professionals engaged in sex determination is " if family planning is desirable, why not sex planning?". Even there are many who consider the sex selective abortion is a way out for many women living under a dominant patriarchal set up with cultural sanctions. The economic logic behind this argument is "sex selection at conception will reduce the supply of women, they will become more valuable, and female children will be better cared for and will live longer. We have here a good instrument for balancing the supply of and demand for women, and for equating their price all over India (since caste, regional, religious, and other barriers prevent the movement of women). So in course of time one should expect dowries to fall in the North…"(Kumar 1983). However, countering this logic, Jeffery and Jeffery (1984) states that scarcity of women is symptomatic of their low value and in the states where sex ratios are lowest (like Punjab) there is no evidence so far that social mechanisms are developing to raise the value of women[15].

Annexure:

The Pre-conception and Pre-natal Diagnostic Techniques (Prohibition of Sex Selection) Act, 1994

In order to check female foeticide, the Pre-natal Diagnostic Techniques (Regulation and Prevention of Misuse) Act, 1994 was

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10 Between 1991 and 2001, the sex ratio for the 0-6 group in many urban centres declined considerably. It declined in Pune (from 943 to 906), in Amritsar (861 to 783), in Kurukshetra (868 to 770), in Vadodara (934 to 873), Rajkot (914 to 844), Ambala (888 to 784) and in Ahmedabad (914 to 814). Other bigger urban areas like, Delhi, Bombay and Bangalore also exhibit a decline in the sex ratio for the 0-6 group. The affluent and prosperous pockets in these urban areas show the steepest decline, indicating that higher levels of wealth and welfare do not automatically mean a positive change in the status of women. Delhi alone has more than 700 ultrasound units that are registered and many more that are not. (India Today, November 19 2003)

15 A 2002 study by the Institute of Development and Communication in Chandigarh reveals that 92% of educated, high-income group of women who went in for sex determination tests were aware that it was illegal
while 77% of those who opted for female foeticide knew it was a crime. 43% of the sampled families perceived the male child as a prospective earner, 58% as protector and 55% considered the girls as a definite burden. (India Today, November 10 2003<)

enacted and came into operation from 1st January, 1996 (referred to as the PNDT Act). However, during the course of implementation of the said Act, certain inadequacies and practical difficulties in the administration of the Act came to the notice of the government. At the same time techniques have been developed to select the sex of the child before conception, which may also contribute to the declining sex ratio. Taking into consideration these developments, the PNDT Act has been amended. The amended Act came into force with effect from 14th February, 2003. The Act is now read as: The Pre-conception and Pre-natal Diagnostic Techniques (Prohibition of Sex Selection) Act, 1994.

The main purpose has been to ban the use of sex-selection techniques before or after conception as well as the misuse of pre-natal diagnostic techniques for sex-selective abortions and to regulate such techniques.

The Salient features of the Act are:

- Sex determination of urban child is not permissible under Pre-conception and Pre-natal Diagnostic Techniques Act, 1994.
- Utilisation of ultra-sonography, amniocentesis to determine and communicate the sex of an unborn is punishable under the law since January 1996.
- Any person conducting ultrasonography on a pregnant woman shall give a declaration on each report on ultrasonography that she/he has neither detected nor disclosed the sex of foetus of the pregnant woman to anybody.
- No person, including a specialist or a team of specialists in the field of infertility, shall conduct or aid in conducting sex selection in any tissue, embryo, conceptus, fluid or gametes derived from either or both of them.
- All clinics conducting ultrasound scans must be registered and must display prominently a notice in English or in the local language that sex determination of foetus is prohibited under the law.
- Use of Prenatal Diagnostic Techniques are allowed only on medical grounds for detecting abnormalities, disorders and congenital anomaly etc. and for determining sex of the foetus.
- No persons conducting pre-natal diagnostic procedure under the law shall communicate to pregnant woman concerned or her relatives the sex of the foetus by words or signs or any other method.

- ♦ Pre-natal Diagnostic Techniques can be conducted only by genetic clinics, genetic laboratories, and genetic counseling centres which have been registered under the PNDT Act.
- ♦ Clinics involved in sex determination tests or advertisements by a doctor or a clinic for conducting the sex determination test of unborn baby are equally liable for punishment under the PNDT Act.
- ♦ Doctors and radiologists conducting or soliciting patients for sex determination tests can be imprisoned up to five years and fined up to Rs. 50,000.

Cognizable, non-bailable and non-compoundable are the offences under the PNDT Act. Cognizable is offence, for which police may arrest without a warrant. Under non-bailable offence, bail may be granted only by competent court. Non-compoundable offence is an offence in which, no settlement between the parties is possible to drop the criminal proceedings.

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