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Original Research Article

Trends of Imbalance in Child Sex Ratio of Gujarat, India

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ABSTRACT

Background: Like the sex composition of the total population, the sex composition by age groups is vital for studying the demographic trends of young population, its future patterns and particularly, the status of the girl child. At the Census 2011, sex ratio of the population in the age group 0-6 years has been registered as 914, in India, declining from 927 in 2001 and 945 in 1991. The decreasing sex ratio in this age group has a cascading effect on population over a period of time leading to diminishing sex ratio in the country.
Aims: To study scenario of female child and comparison of child sex ratio with previous year's data.
Design and Setting: This cross-sectional secondary data analysis study was conducted during November-December 2014.
Methods: Study included the data of Indian census 1901 to 2001 and provisional data of census 2011. Study had focused mainly on data of Gujarat and India. Study had systemically searched the data and relevant information from internet, internet and index journals.
Results: Gujarat recorded a 3 point increase in CSR from 883 girls to1000 boys in 2001 to 866 in 2011, still significantly lower than desirable levels. Highest increase in child sex ratio is seen in Mehsana (44), Gandhinagar (31) and Anand (28) districts. Highest decrease in child sex ratio is seen in Dahod (30), Surat (23) and Banaskantha (17) districts. Surat is now a hotspot registering a fall in CSR by 23 points reaching 836 girls per 1000 boys in 2011.
Conclusion: Study results show that if there is no change in current situation or more actions are not taken, child sex ratio will continuously decrease. Parents in a society should change their attitude towards certain norms that lead them to give better care to their sons than their daughters, and excess female mortality may be an unintended consequence

Keywords: Child sex ratio, Census, Gender Discrimination, sex ratio

INTRODUCTION

It is a travesty that a nation that aspires to be a world power has no social respect for its women. Various social, economic and demographic indicators provide evidence of a gender bias as well as deep-rooted prejudice and discrimination against women and girl children. A century old Indian demographic history records that in the matter of sheer numbers, the female ratio in total population had always remained unfavorable. In this regard, the 2011 census, reveals that a decline in the child sex ratio (CSR) for the age group 0-6 has crossed all limits and has remained alarmingly at its lowest. [1]

Discrimination is more evident in so called well educated and prosperous society. For example in some of the district of Haryana, Punjab sex ratio in 0-6 age group is even below 800 for every 1000 males so North- Western States of India i.e. Haryana, Punjab and Himachal Pradesh are called by some as 'Bermuda Triangle' i.e. the triangle where girls vanish. [2,3] The issue of the survival of the girl child is a critical one, and needs systematic effort in mobilizing the community. "Female deficit syndrome" is considered adverse because of social implication. A low sex ratio indicates strong male child preference and consequent gender inequalities.

While the overall sex ratio has improved to 940 as compared to 933 in 2001, the child (0-6 years) sex ratio, i.e. the number of girl children per 1,000 male children has shown an unabated decline since 1961. It has declined from 927 in 2001 to 914 in 2011. The latest figures are the lowest since 1947. This is of grave concern as the country is already grappling with gender discrimination and female foeticide /infanticide.

MATERIALS AND METHODS

This cross-sectional secondary data analysis study was conducted during January-March 2015 and included the data of Indian census 1901 to 2001 and provisional data of census 2011. Study had focused mainly on data of Gujarat and India.

Data Sources: Study had systemically searched the data and relevant information from internet and index journals. Study analyzed the data of National Family Health Survey (NFHS 1,2,3), District Level Health Survey (DLHS 1,2,3), Sample Registration System (SRS), Gujarat Government Publication, Census data of 1901 to 2011 (provisional data), 11th Five Year Plan of India, World Health Organization, Reports of Millennium Development Goals as primary data.

***Statistical Methods**:* After collection of data, it was analyzed by Excel Software. Bi-Variate analysis regarding to know the association between dependent and independent variable, correlation and linear regression model have applied accordingly

RESULTS

At national level:

The child sex ratio (CSR) in the country had started to decline since 1961; between 2001 and 2011 this has declined from 927 to 914. [Table-1] Wide variations are seen in ratios across different regions of the country. Overall, the CSR remains adverse in 21 states and Union Territories, the fall ranging from 1 to 88 points.[Table-2] Thirteen out of the 35 states and union territories have CSR lower than the national average of 914 girls per 1000 boys in 2011. The CSR ranged from a maximum of 971 in Mizoram to a minimum of 830 in Haryana. Jammu & Kashmir, Punjab, Haryana, Uttar Pradesh, Rajasthan, Uttarakhand, Gujarat and Maharashtra have recorded lower than 900 girls per 1,000 boys. The southern states of Kerala (959), Andhra Pradesh (943), Karnataka (943), and Tamil Nadu (946), have healthy sex ratios.

At Gujarat level

Gujarat recorded a 3 point increase in CSR from 883 girls to1000 boys in 2001 to 866 in 2011, still significantly lower than desirable levels. [Table-1] In 2001 only 11 districts registered a CSR above 900. In 2011 this number has decreased to 10 districts. Thirteen districts showed decrease in CSR ranging from 2 to 30 points. Notably, a majority of the tribal districts like Panch Mahals, Dahod, the Dangs and Valsad, bordering Madhya Pradesh and Maharashtra, experienced a decline in CSR from 2001 levels, with Dahod recording a fall of 30 points. Districts like Patan, Mehsana, Gandhinagar, Ahmedabad and Anand showed significant increases in CSR

ranging from 19 points to over 44 points although the levels remain below 900.

Table 1: Child Sex Ratio in India & Gujarat from 1961-2011 with decadal variation

Year	Child Sex Ratio, India	Decadal difference	Child Sex Ratio, Gujarat	Decadal difference
1961	976	--	956	--
1971	964	-12	948	-8
1981	962	-2	947	-1
1991	945	-17	928	-19
2001	927	-18	883	-45
2011	914	-13	886	+3

Table 2: Decadal change in Child Sex Ratio of Indian states

State	Child Sex Ratio, 2001	Child Sex Ratio, 2011	Decadal difference
Jammu & Kashmir	941	859	-82
Maharashtra	913	883	-30
Rajasthan	909	883	-26
Manipur	957	934	-23
Jharkhand	965	943	-22
Uttarakhand	908	886	-22
Nagaland	964	944	-20
Madhya Pradesh	932	912	-20
Sikkim	963	944	-19
Orissa	953	934	-19
Andhra Pradesh	961	943	-18
Goa	938	920	-18
Uttar Pradesh	916	899	-17
Tripura	966	953	-13
India	927	914	-13
Chhattisgarh	975	964	-11
West Bengal	960	950	-10
Bihar	942	933	-9
Assam	965	957	-8
Arunachal Pradesh	964	960	-4
Meghalaya	973	970	-3
Karnataka	946	943	-3
Kerala	960	959	-1
Gujarat	883	886	3
Tamil Nadu	942	946	4
Mizoram	964	971	7
Haryana	819	830	11
Himachal Pradesh	896	906	10
Punjab	798	846	48

Table 3: Districts of Gujarat where Child Sex Ratio is increased/ remain unchanged in 2011 census

District	Child Sex Ratio 2001	Child Sex Ratio 2011	Number of increase
Mahesana	801	845	44
Gandhinagar	816	847	31
Anand	849	877	28
Ahmedabad	835	859	24
Sabarkantha	879	899	20
Patan	865	884	19
Kheda	876	887	11
Vadodara	886	894	8
Navsari	915	921	6
Bhavnagar	881	885	4
Surendranagar	886	889	3
Rajkot	854	854	0
Jamnagar	898	898	0

Table 4: Districts of Gujarat where Child Sex Ratio is decreased in 2011 census

District	Child Sex Ratio 2001	Child Sex Ratio 2011	Number of decrease
Dahod	967	937	30
Surat	859	836	23
Banas kantha	907	890	17
Amreli	892	879	13
Panch Mahal	935	923	12
The Dangs	974	963	11
Kachchh	922	913	9
Narmada	945	937	8
Tapi	951	944	7
Valsad	933	926	7
Bharuch	918	914	4
Porbandar	898	894	4
Junagath	906	904	2

Table 5: Simple regression analysis was done to determine the nature of correlation and future trend of sex ratio in India and Gujarat.

	Regression Equation	Correlation coefficient
India	Y = 3433.33 + (-1.2524) X	-0.96*
Gujarat	Y = 4124.96 + (-1.6114) X	-0.86*

[Y = Sex Ratio, X = Year, * = p value < 0.05]

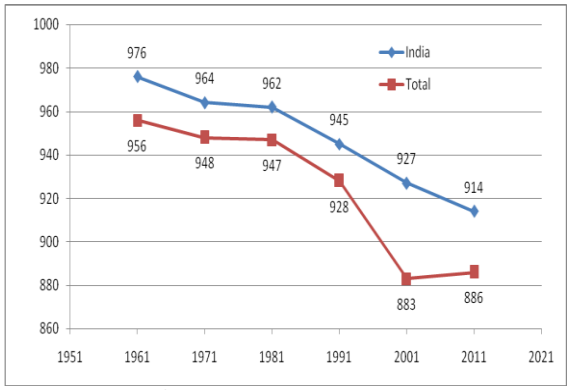

Figure 1: Trend of Child Sex Ratio in Gujarat and India, 1961-2001

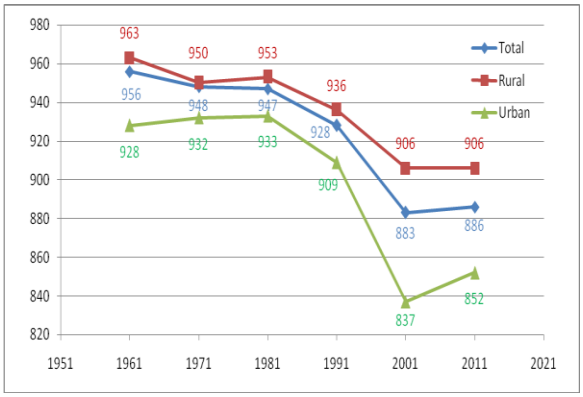

Figure 2: Child Sex Ratio by residence, Gujarat 1961-2011

[Table-3] Ahmedabad and Anand have come out of the 'red zone' with a CSR above 850. [Figure-3] However, Surat is now a hotspot registering a fall in CSR by

23 points reaching 836 girls per 1000 boys in 2011.[Table-4] CSR in rural and urban areas increased in census 2011. Although it is still below 950, the CSR increased in urban areas by 15 points. [Figure-2] Table 5 shows highly negative and significant correlation between sex ratio and time (in year) both in India and Gujarat.

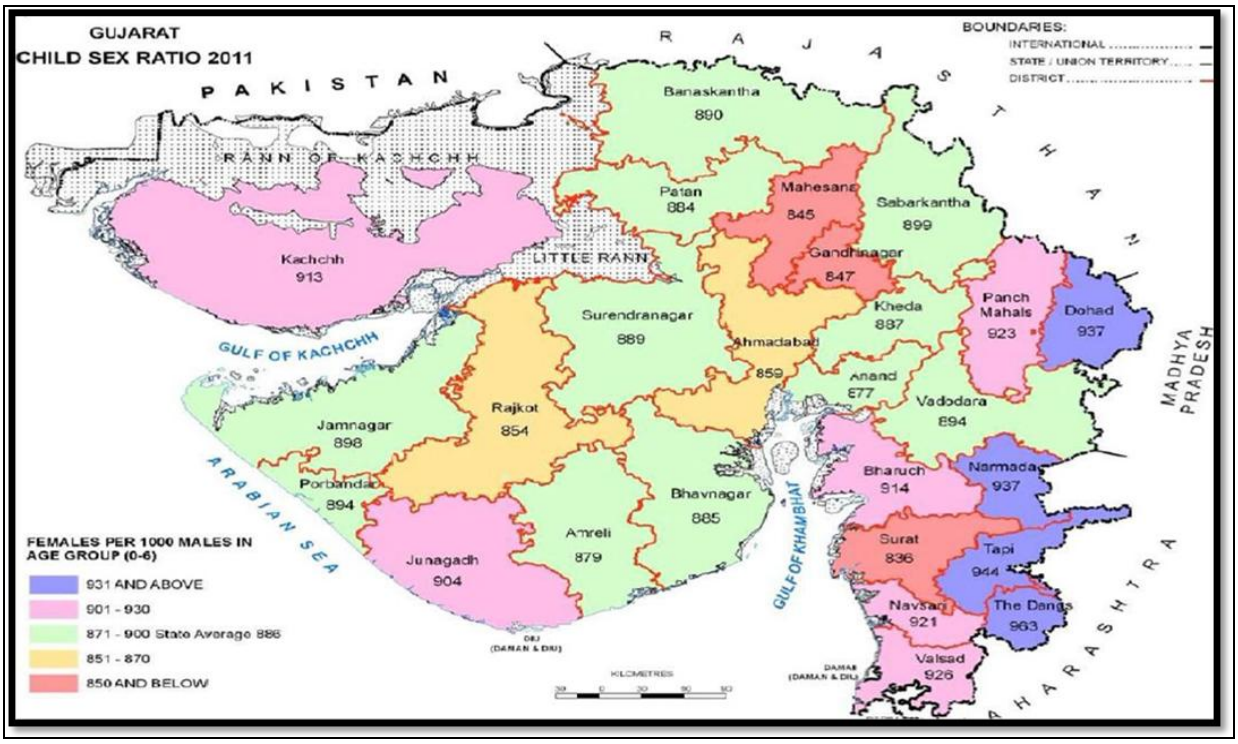

Figure 3: Child sex ratio, Gujarat-2011

DISCUSSION

In 1871, when India held its first census, there were 5.5 million fewer females than males. [3] One hundred and twenty years later, in 1992, Amartya Sen estimated a deficit of 37 million females in India, drawing attention to the ‘‘missing women’’ of South Asia. [4] Some 10 million female foetuses are estimated to have been aborted over the last two decades in India. [5] Given the traditional preference for a male child, [6-9] it is not surprising that right from the first census of 1871, India has consistently shown an abnormal sex ratio. Sex bias regarding Education, Nutrition and Health Care has been found in several studies [10-14] which show that girls are constantly suffering from sex bias. A steep decline in the child sex ratio in recent years has coincided with an increased availability of ultrasound machines. [15-17] About 70% of all abortions performed in Delhi are terminations due to the foetus being female. [18]

Considering this decline, the Government of India passed the Pre-natal Diagnostic Techniques Act (Regulation and Prevention of Misuse) or PNDT Act, 1994 banning pre-natal sex determination, which came into force in 1996. Despite the Act, the CSR in India has declined from 927 girls per 1000 boys in 2001 to 914 according to Census 2011. It is noteworthy that the so-called rich states of Maharashtra, Punjab and UT Chandigarh have some of the lowest child sex ratios in the country. This hints at the on-going rampant misuse of technology in those states. Sex-selective abortions or female foeticides are the primary cause of the decline. Census 2011 also points to the

spread of this phenomenon from largely urban and prosperous areas to rural, remote and tribal pockets of the country. Though the CSR for most of the tribal districts was above the national average of 918, the situation significantly deteriorated in 2011. While in 2001, 120 tribal districts had CSR of 950 or more, in 2011 this number declined to 90 districts. [1]

Like the sex composition of the total population, the sex composition by age groups is vital for studying the demographic trends of young population, its future patterns and particularly, the status of the girl child. At the Census 2011, sex ratio of the population in the age group 0-6 years has been registered as 914, in India, declining from 927 in 2001 and 945 in 1991. The decreasing sex ratio in this age group has a cascading effect on population over a period of time leading to diminishing sex ratio in the country. One thing is clear - the imbalance that has set in at this early age group is difficult to be removed and would remain to haunt the population for a long time to come.

CONCLUSION

Study results shows that if there is no change in current situation or more actions are not taken, sex ratio will continuously decrease. Parents in a society should change their attitude towards certain norms that lead them to give better care to their sons than their daughters, and excess female mortality may be an unintended consequence.

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