

Original Article

A STUDY ON THE SEX RATIO AT BIRTH IN INSTITUTIONAL DELIVERIES IN A TERTIARY CARE HOSPITAL IN KALYANI, WEST BENGAL

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ABSTRACT

Background: The sex ratio at birth and the sex ratio in the population should remain constant without manipulation. However, several parts of the world, particularly some Asian countries including India, have shown a low sex ratio at birth due to the preference for a son and due to sex selective abortion.

Objectives: The objectives of our study were, to find out the trend of sex ratio at birth in institutional deliveries.

Methods: In the present study, the secondary sex ratio was analyzed from the birth records of all the deliveries which were conducted at the College of Medicine and JNM Hospital, WBUHS, Kalyani, Nadia during the period from January 2016 to September 2017.

Results: During the study period, 12,852 institutional deliveries took place, of which 6017 was female births, thus giving an overall sex ratio of 880.

Conclusion: In our study, a trend towards an alarmingly decreasing sex ratio was documented.

Key words: demographic indicator, literacy rate, sex composition

INTRODUCTION

Sex Ratio is a term used to define the number of females per 1000 males. It's a great source to find the equality of males and females in a society at a given period of time. In India, Sex Ratio was respectable till the time of Independence, thereafter it has declined regularly. According to Census of India 2011, Indian sex ratio has shown major signs of improvement in the last 10 years.¹ From a small number of 933 in 2001, the bar has been raised to 940 in the 2011 Census of India.¹ Although this improvement is fair

enough in a developing economy, but still there is a long way to go. India suffers from a huge inequality of male female child ratio due to poor sex ratio in some regions.

The sex ratio at birth (SRB) is an important demographic indicator that was initially studied in the late 17th century.² The sex composition of a population is determined, in part, by the number of male births which are relative to the number of female births. In humans, the sex ratio at birth is commonly assumed to be 100 boys to 105 girls

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Received: 29 October 2017

Accepted: 17 November 2017

Published online: 1 December 2017

Citation: Roy Chowdhury R, Chowdhury S, Pal M. A study on the sex ratio at birth in institutional deliveries in a tertiary care hospital in Kalyani, West Bengal. J Indian Acad Obstet Gynecol 2017; 1(1): 16-19

(which is sometimes shortened to “a ratio of 105”). However, the sex ratios at birth or among infants may be considerably skewed by sex-selective abortion and infanticide. The Central Intelligence Agency (CIA) has estimated that the current world wide sex ratio at birth is 107 boys to 100 girls.³

The data on the sex ratio at birth is necessary to understand the trends in infant morbidity like low birth weight and mortality, since male infants are more susceptible to illness and have higher infant mortality rates than females.^{4,5} The sex ratio at birth which is biased against female births can result in a gender imbalance, which in turn can have grave implications on the society in the form of lack of marriage-ability of the excess male population, thus resulting in social unrest, a demand driven increase in prostitution, kidnappings of women, etc.^{6,7} The sex ratio at birth can be affected by sex-selectivity at birth.⁸ The SRB for India for the period from 2004-06 (3 years average) has been estimated to be 892. It varies from 895 in the rural areas to 881 in the urban areas. In the rural areas, the highest and lowest SRBs are in the states of Tamil Nadu (970) and Delhi (810) respectively. The SRB in the urban areas varies from 962 in Kerala to 800 in Punjab.⁹

The various factors which are associated with declining sex ratios are social, economic and cultural in nature. Health institutions represent the health related behaviour of the population. It was thought that the sex ratio at birth would give some idea about the overall picture of the sex ratio in the society.

MATERIALS AND METHODS

This study was undertaken at the College of Medicine and JNM Hospital, WBUHS, which is a tertiary care government teaching hospital in Kalyani, Nadia, West Bengal, to find out the sex ratio at birth in institutional deliveries. It was a retrospective, record based, observational study. The birth records of all the deliveries which were conducted at the above mentioned institute during the study period were analyzed by using the study variables i.e. literacy rate and residential status of the state and Nadia district as per 2011 census.

RESULTS

In the present study, a total of 12,852 deliveries took place in this hospital, with 6835 male and 6017 female births, giving an overall sex ratio of 880. The sex ratio for the year 2016 was 902 and 852 for the year 2017 calculated till date. The results of the study has been interpreted using standard statistical methods. (Table 1, Fig. 1)

Table 1: Sex ratio in Kalyani, COMJNM hospital

Year	Male	Female	Total Birth	SRB
2016	3767	3401	7168	902.8
2017(till Sep 2017)	3068	2616	5684	852.7

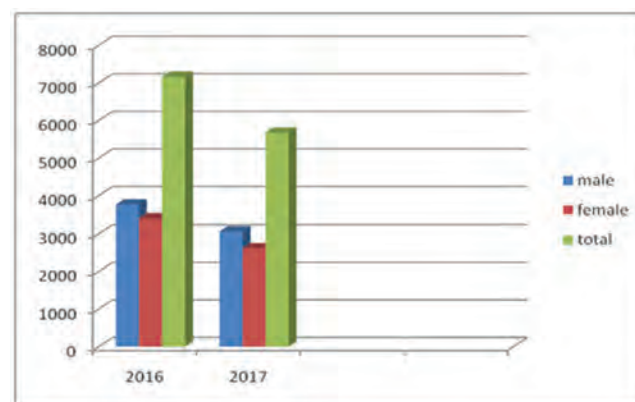


Fig. 1: Sex ratio in Kalyani, COMJNM hospital

The national sex ratio of India showed that in 2012 it was 940 and in 2016 it is 944. (Table 2)

Table 2: Sex ratio in India (yearly)

Year	Sex ratio
2012	940
2013	941
2014	942
2015	943
2016	944

<http://www.indiaonlinepages.com/population/sex-ratio-of-india.html>

As per the population census 2011, vast majority of the people of West Bengal stayed in rural area (Fig. 2) and literacy rate has been increased if we compare the report between 2001 and 2011 (Table 3).

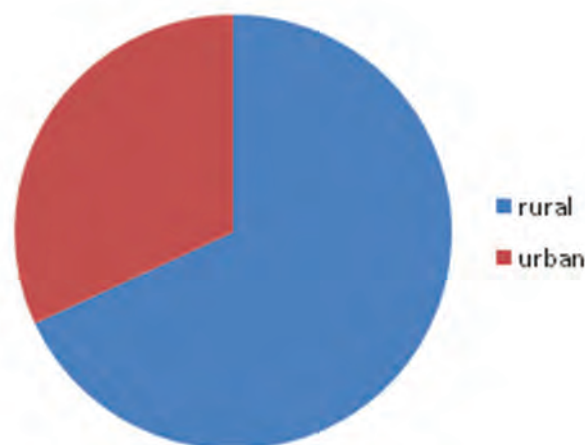


Fig. 2: Population of West Bengal

Table 3: Literacy rates (%) in West Bengal

Year	Male	Female	Total literacy rates
2001	77.02	59.61	68.64
2011	81.69	70.54	76.26

DISCUSSION

In our study, we tried to investigate the trend of SRB in our institute in background of local demographic factors such as female literacy and rural and urban status. In the present study, the SRB (880) was found to be well below the national average of 944. The sex ratio at birth for the year 2016 was 902.8 while SRB till Sep 2017 being 852.7. An alarmingly lower than the national average of the past few years. As per the census of the year 2011, the sex ratio in India was 940 girls per 1000 boys, whereas it was 976 in 1961, just five decades back. The sex ratio in West Bengal was 934 per 1000 males. According to NFHS 3, there was an accelerated decline in the sex ratio at birth from 1993-97 to 2000-04.^{10,11} The level of literacy was relatively low among the mothers from rural areas. According to the census of the year 2011, the female literacy in West Bengal was 70.5%.¹² The literacy rate in our study population is taken to be as per the last census, 2011. A similar observation was also made in other studies from India.⁶ It has been observed that female literacy is rising in this state but this does not seem to reduce the sad state of affair prevalent in this part of the country. A possible explanation could be explained by the fact that the women with higher education opted more for sex selection due to the preference for a son and a small family size. The NFHS III data also showed that 56% of the women and 59% of the men considered the ideal family size to be two children or less, but there was a consistent preference for sons over daughters among both women and men. About one-third of the women and one quarter of the men wanted more sons than daughters, but only 2% wanted more daughters than sons.¹³ It showed that though female education could lead to some decrease in the gender disparities, it was not enough. Hence, with increased female education, there had to be an increased awareness regarding the adverse consequences of the declining sex ratio, particularly among females. The sex ratio at birth was 909 for urban mothers and it was 820 for rural mothers. In institutional deliveries, the sex ratio at birth was low in both urban and rural areas as compared to the state average. Studies by other groups also showed that the preference for a son and the discrimination against the girl child were common among the rural population and that it mainly arose out of social attitudes and the

society's prejudices, myths and beliefs. It could be explained that smaller families had a significantly higher proportion of sons than the larger families and that socially and economically disadvantaged couples not only wanted but also attained a higher proportion of sons, if the effects of the family size are controlled. A low sex ratio at birth in the rural areas was a point of concern. It possibly reflected an increased access of prenatal diagnostic techniques among the rural population who were possibly more biased against women due to an agriculture based male dominant society.^{14,15} There was a decline in the SRB from the second birth onwards. The variation of SRB with the birth order (or parity) was seen in Asia and in all the other countries where the SRB was increased. It showed that after the first child, a large number of couples availed of the prenatal techniques for sex selection. Similar findings were observed in other studies too.¹³

Limitations of the study

The present study was conducted in only one teaching hospital taking into account the local demographic features prevalent in that part of the state. SRB determination calls for involvement of other hospitals along with the socio-religious and residential status of the patients.

CONCLUSIONS

An extremely complicated situation is existent regarding the sex ratio at birth in India due to diverse demographic, cultural, and socio economic factors. These have shown a variable influence over the sex ratio in different studies. It is necessary to understand these complex mechanisms before making policies and programmes to decrease the gender discrimination. The effective implementation of a legislation which prevents sex selective abortion should be combined with proper education with respect to the declining sex ratio and its future adverse consequences. All forms of gender inequality with equal social and economic rights for males and females, including the rights of inheritance, need to be addressed. The PCPNDT Act should be effectively implemented, so as to discourage female foeticide. Both print and electronic media, should be mobilized to percolate the relevant information to prevent female foeticide. In addition, further studies are recommended to explore the reasons of the unhealthy sex ratio at birth. The women especially those from the rural areas should be targeted to be educated, which could make both men and women accept female births. So the target is not only to achieve adult literacy but proper education in real terms.

ACKNOWLEDGEMENT

I would like to thank our data entry operator Ms Debjani Dutta for providing the relevant data.

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ABBREVIATION

NFHS – National family health survey