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Original Research Article

Influence of gender inequalities in curative and preventive health care use among children between 2 months to 5 years of age and its impact on changing sex ratio of the community

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ABSTRACT

Background: Male preferring mentality of the society has created a discrimination against females in seeking curative and preventive health care and their overall nutritional status.
Methods: Prospective observational study that included all the children between the age of 2 months to 5 years. The data collection started from January 2020 from registers in a monthly fashion till December 2020 and were analysed and categorized based on sex difference in admissions, leave against medical advice, mortality, immunisation, and follow-up.
Results: The basic descriptive statistics shows that there is gross difference in the frequency of admissions in Inpatient (males- 58.33%, females- 41.67%), follow-up care (males- 56.33%, females- 43.67%) and immunization (males-53.06%, females-46.94%). The number of females children who left against medical advice (10.49%) were more than male children (6.45%) and is also statistically significant. In our study a greater number of female deaths (11.02%) occurred compared to males (10.15%) despite of their survival advantage. The number of female children (48.30%) who were admitted in nutritional rehabilitation centre were less compared to the number of males (51.70%). The hospital sex ratio at birth was 114 males per 100 females which is worse than the national average.
Conclusions: Male biased community has put females at risk starting from the time of conception. Gender difference is experienced throughout and in all aspects of social, cultural, healthcare fields and nutritional needs.

Keywords: Female discrimination, Health seeking behaviour, Immunisation and nutrition, Sex ratio

INTRODUCTION

Gender inequities, referring to the inferior treatment of and opportunities for the female sex relative to their male counterpart compromises maternal and child health all over the world. Such inequities are more common in a developing country like India, that has an overall sex ratio of 919 females per 1000 males.[1] In India each year 1.5 million of the 12 million girls born do not survive their first birthday and only 9 million will survive to see their 15th birthday.[2] The sex ratio of the country has shown a steady decline in the last century from 972 females per 1000 males in 1901 to 940 females per 1000 males in 2011.[3] The child sex ratio (0-6 years) has also declined to 914 females per 1000 males in 2011 census as against 927 females per 1000 males in 2001 census.[3,4]

Gender differences in child health care utilization in India have been documented in multiple forms of health care use but have been largely understood from studies of immunization and malnutrition levels using nationally representative household survey data of India from 1992 to 2006. This work consistently documents significantly lower rates of immunization and higher levels of malnourishment for girls in India. Further, these studies find that the disparity was enhanced for poorer mothers and based on number of siblings, where full immunization was most likely for oldest males and males

born after daughters and least likely for girls with older siblings of either sex. Although less research has been conducted on other health care utilization in India, that which has been done documents gender inequities in care seeking for infants and children ill with diarrhoea, respiratory or other infectious disease, as well as hospital visits and discharge against medical advice. Studies from India document that parents provide up to four times the household expenditure for male relative to female infants, due to both non-use of care and use of less costly care for girls (i.e., relying on public rather than preferred private providers.[5]

So, this study was done in a tertiary care hospital to assess the gender inequities in health seeking behaviour of the community by analysing various determinants like admission rates, malnutrition status, leave against medical advice, death rates, immunisation rates and follow up rates by comparing these among males and females.

METHODS

Study design and period

It was a prospective observational study. The study took place from 1st January 2020 to 31st December 2020.

Study area

IPD, OPD, immunization clinic and NRC (nutritional rehabilitation centre) of Netaji Subash Chandra Bose Medical College, Jabalpur, Madhya Pradesh.

Study group

All children between the age of 2 month to 5years getting admitted in IPD and NRC. All the children between 2 month and 5 years of age coming for follow up in OPD and for Immunization.

Exclusion criteria

Children with disorders of sexual differentiation and children with major congenital malformations were excluded from the study.

Data collection

Data was collected and categorized based on sex difference in IPD admissions, leave against medical advice, mortality, immunization, NRC admissions and follow-up. The data collection started from January 2020 from registers and documents in a monthly fashion till December 2020.

Data analysis

The data has monthly statistical data according to various above-mentioned determinants entered in excel master-sheet and analysed by windows SPSS.

RESULTS

Health seeking behavior among the community was assessed based on the data regarding admissions in IPD, NRC, follow up, leave against medical advice, death and immunization as given in Table 1.

Table 1: The yearly statistics- frequency and percentage.

Variables	Male		Female	
	N	%	N	%
Admissions	1054	58.33	753	41.67
Mortality	107	56.32	83	43.68
Lama	79	58.96	55	41.04
Follow up	4359	56.33	3380	43.67
Immunisation	788	53.06	697	46.94
Nutrition-sam admissions	137	51.70	128	48.30
Births	3498	53.31	3064	46.69

Table 2: Comparison statistics of follow up, LAMA and death between males and females with respect to their admission rates.

Variables		Male	Female	P value	Z value
Follow up- male versus female	Admission	1054	753	0.001	11
	Follow up	637	257		
	Follow up %	60.44	34.13		
LAMA- male versus female	Admission	1054	753	0.002	3.1
	Lama	68.00	79		
	Lama %	6.45	10.49		
Deaths- male versus female	Admission	1054	753	0.55	0.6
	Deaths	107.00	83		
	Deaths %	10.15	11.02		

The data shows that there was gross difference in the frequency of admissions in IPD (males-5 8.33%, females-41.67%) and NRC (males- 51.70%, females- 48.30%), follow-up care (males- 56.33%, femlaes-4 3.67%) and immunization (males- 53.06%, females- 46.94%). The data of deaths, LAMA and follow up were compared between males and females using proportion z test assuming unequal variance and given in Table 2. For comparison of these 3 determinants admissions in IPD were taken as reference and the percentages were calculated based on it to rule out bias. The number of females children who left against medical advice (10.49%) (out of the total admitted) were more than male children (6.45%) and is statistically significant. Significant differences were obtained in the number of female children coming for follow-up (34.13%) compared to males (60.44%) out of total advised. The number of female deaths (11.02%) were more compared to males (10.15%) (out of total admitted) despite of their survival advantage. The independent variables of immunization

and NRC admissions compared among males and females (using paired t test) and given in Table/Figure 3. The number of female children (48.30%) who were admitted in NRC were less compared to the number of males (51.70%). The hospital sex ratio at birth was 114 males per 100 females which is worse than the national average.

Table 3: Comparison statistics of immunization, NRC admissions and live births between males and females in a year.

Variables		Male	Female	P value	t value
Immunization	n	788	697	0.08	2.2
	%	53.06	46.94		
Nutrition-NRC admissions	n	137	128	0.76	2.07
	%	51.7	48.3		
Live births	n	3498	3064	0.11	2.07
	%	53.31	46.69		

DISCUSSION

Sex ratio is an important social indicator to measure the extent of prevailing equity between males and females in a society at a given point of time which historically is skewed in favour of males and has continued to worsen in various forms. In our hospital the total number of male births were 3498 and female births were 3064; with a sex ratio of 114 males per 100 females. Data from India's SRS indicate an SRB of 111 males per 100 females in 2015. A higher SRB is attributed to high incidents of sex selective abortions in regions where male preference remains strong.[6-8] Some suggests that the decreasing trends of higher order births in India may also play an important role.

Manchanda et al found that sex ratio at birth (no of females per 1000 males) decreased with increase, in birth order and a further decline was seen when the previous child was a girl.[9] Prevalence of indigenous medicine use was studied and found that mothers with a previous girl child took medicines to get the baby of the desired sex. According to the Indian census (2011), the child sex ratio (CSR) was 109 males per 100 females.[10] These high child sex ratios are attributed to combination of high sex ratio at birth (SRB) and excess female mortality in childhood.[2] Even though sex differentials in mortality have narrowed down in recent years and there is no sign of an increase in the excess under-5 female mortality CSR has been steadily rising, pointing to a high SRB.[8,11,12]

Females have a well-documented survival advantage biologically. Driscoll et al explained it to be due to the increased expression of IRAK which is responsible for sex specific responses to infection and subsequent more advantage in females.[13] In the study, the increased survival advantage of female children is neutralised by careless and decreased health seeking behaviour of parents and community including denial of provision for good nutrition and immunisation which increases the mortality of the admitted female children when compared to male children. The percentage of mortality among the female children admitted in PICU was 11.02% (mean 6.92, SD 3.6), as compared to the percentage of mortality among males (10.15%).

Khera et al said that despite the mortality advantage of the female sex under ideal conditions, the sex specific under-5 mortality rates in India shows a definite gender bias against the female child.[14] The 'million death' study data reports an unfavourable under-5 mortality rate of 90.2 per 1000 live births for females compared to 82.2 per thousand for males, even though the neonatal mortality rate is lower for girls.[15] In the study, 1054 males (58.32%) were admitted in the paediatric department in the year 2020, whereas only 753 females (41.67%) got admitted. All patients were advised to follow-up at the time of their discharge, but only 60% of males and 34% of females out of total admitted came for follow-up care and there was statistically significant difference between them (p=0.001).

Shashank et al observed that there was also a significant difference in the duration of hospital stay from admission to death (shorter in girls) possibly due to delayed hospital admissions.[16] The time lag to avail treatment was less for male children and the amount spent for the treatment was higher in males. In studies done by Pandey et al and Willis et al a greater number of females had fallen ill than male children.[17,18] The probability of male children to avail treatment was also high and that too at an early period. When the distance travelled to avail treatment and the amount of money spent were observed, males always outweigh females.

Gender based differences in health care utilization documents significantly lower rates of immunisation for girls in India. Disparity was further enhanced for poorer mothers and based on number of siblings, where older males and males born after daughters had the advantage of getting full immunizations. Data obtained from National Family Health Survey by Pande has shown that female children have lower rates of vaccination (13% lower) than males of the same age group, with the females faring much worse in households with a higher number of male siblings.[19] Immunisation statistics reveals a total of 788 male immunization and 697 female immunizations in the year 2020, though difference is not statistically significant. The girl child faces the neglect of the family in the form of provision of good food, clothing, love, shelter, supervision, education, and medical care.

A total of 137 males and 128 females got admitted with severe acute malnutrition in the year 2020 in Nutritional Rehabilitation Centre. Data obtained from National family health survey by Pande showed a long-term nutritional deprivation among girls, with girls having 6% higher rate of being severely stunted as compared to

boys.[19] Chen et al, showed that the prevalence of malnutrition is markedly higher among female children; attributed to sex discrimination against females in intrafamily allocation of food.[20]

Education plays an important role in reducing gender inequality; Echavarri et alexplains education as an instrument of preference change, and an instrument of technological constraint change.[21] There is evidence to suggest that the number of children born to a woman is inversely related to her level of education.[22,23] There is considerable evidence to suggest that children's health, nutritional status, and educational attainments are enhanced by having better educated parents, particularly the mother.[24] A plausible explanation for these gender gap in nutrition and immunization was given by Foster and Rosenzwei, because of 'patrilocal exogamy' whereby adult males even after marriage, continue to live with their parents and contribute to the household economy, whereas adult females, after marriage leave their parental home with dowry.[25] So, investment in girls yields parents a lower return than investment in boy.

CONCLUSION

This study concluded that health seeking behaviour is less towards females and more skewed towards males. Despite of their natural survival advantage more no of females are "missing" day by day leading to a community with declining sex ratio. Deliberate parental neglect of girl's essentials; nutrition, immunisation, and lifesaving medical care are important contributing factors apart from sex selective abortions to the declining gender ratios. The health programmes should emphasis on improving the health education and awareness of community for the improvement in health seeking behaviour towards females equally. Incentive based promotions required. Corrective measures and focussed actions are needed.

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