Sex differences of Nutritional status among preschool children in North 24 Parganas district of West Bengal, India

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ABSTRACT

Gender discrimination is a burning issue for quite a long time. The present research is an attempt to find gender equity among pre-school children (below 6 yrs) of 2nd most populated district of India (Census 2011) i.e. North 24 Parganas district of West Bengal. 1000 children i.e. 500 of each sex were selected by multistage sampling, and anthropometric measurements like height-for-age, weight-for-age, weight-for-age, arm circumference-for-age, were taken along with some cultural information to observe whether any sort of discrimination exists between children of both sexes and if parents possess any differentiating psychology regarding gender of children. It was found that no significant difference exists among boys and girls in respect of health status. Beside this, other caring facilities also showed the same feature. In every case the Chi-square statistics proved that there is no significant difference between bays and girls regarding caring facilities and nutritional status at 0.05 significance level. A simple conclusion can be drawn from the study that unlike other studies gender equity exists among the reference population of North 24 Parganas, West Bengal.

***Keywords:** Gender, Health, Nutrition, North 24 Parganas*

INTRODUCTION

Anthropological approach towards understanding gender equality perhaps started to grow first with Margaret Mead's approach that "the knowledge that the personalities of the two sexes are socially produced in congenial to every programme that looks forward towards a planned order of society. Girls can be trained exactly as boys are trained, taught the same code, the same forms of expression, the same occupations" (Mead, 1949). According to Marx (1868) "Anyone who knows anything of history knows that great social changes are impossible without feminine upheaval. Social progress can be measured exactly by the social position of the fair sex, the ugly ones included". The Marxist model explains that the subordination of women in capitalist societies, both in terms of their reproductive role, "the reproduction of labour," as well as their value as unpaid or underpaid labour, arises from historical trends predating capitalism itself (Rubin and Reiter, 1975). The term gender is more a cultural phenomena rather than biological. Gender bias occurs when male and female identities are assigned different 'value' within the community they are born into, leading to boys and girls receiving different treatment, care and resources according to their given 'value'. There is a substantial body of research focusing on different aspects of gender bias, from sex selection to differential practices in immunization. There are interconnecting social, cultural, political and economic factors which underpin son preference and bias against girls (UNICEF, 2011). "Gender equality is more than a goal in itself. It is a precondition for meeting the challenge of reducing poverty, promoting sustainable development and building good governance" (Annan, 2002). Gender differences in health and how well health systems and health care services meet the needs of women and men are well known. There is also increasing research evidences demonstrating the importance of a number of different social determinants of health, and these interact with gender inequalities in ways that can magnify the impact on health (Payne, 2009).

In countries like India, male child is more valuable than a female child, and this gender bias causes parents to care very much if they have a boy than a girl. It is due to advances in genetic testing, parents attempt to find out if they're having a boy or a girl, and they may elect to end a pregnancy that would yield a female child. And if the parents don't receive advance information, they may kill the girl child after birth (Girish, 2005). As a result, the sex ratio in some countries is skewed; in India, for example, there were 927 girls per 1,000 boys as per Census 2001 which is now 943 females per 1000 males (Census of India 2011). Arokiasamy and Pradhan (2005) after analysing National Family Health Survey-2 data set conclude the presence of gender inequity in India in the form of nutrition, immunization, illness and

treatment with some regional differences. Mitra (2014) after analysing data of NFHS and Census 2011 of India revealed the fact that son preference and neglect of girls are occurring even among the educated and affluent classes in India and are not correlated with economic development, affluence, or literacy levels. Over time, the absolute gender gap has increased with an absolute 2.6% gender gap in 1992–3 increasing to 3.8% gender gap in 2005–6 (Balarajan et al. 2011). There was a study conveyed to understand gender equity in nutrition and sex differences in growth among Rajbansis of North Bengal. The results of the study showed that most of the children are below –2SD irrespective of sex regarding height-for-age (boys 53.57%, girls 68.75% stunting), weight-for-age (boys 65.17% girls 58.93% underweight) and weight-for-height (boys 29.46%, girls 21.43% wasting) as per NCHS/WHO normalized reference value (Biswas and Mallick, 2008). A study among the pre-school children of North- Bengal showed association of socio-economic and socio-demographic variables with wasting which results the girls 1.05 times more vulnerable than boys in respect of undernutrition (Tigga et. al, 2015). The CSR (Child Sex Ratio) would favour girls since girls are endowed by nature to be the stronger sex. This indeed was true of West Bengal till 1971. It is a cause for grave concern that in West Bengal the SR for children aged up to six years has declined from 1007 in 1971 to 963 in 2001 (Mukherjee, 2004). These are the reason that United Nation in 2000 Millennium Summit introduced 'The Millennium Development Goals'. The United Nations Millennium Development Goals are eight goals that all 191 UN Member States (there are 193 currently) have agreed to achieve by the year 2015. The United Nations Millennium Declaration, signed in September 2000 commits world leaders to combat poverty, hunger, disease, illiteracy, environmental degradation, and discrimination against women. The MDG 3 indicators track key elements of women's social, economic and political participation and guide the building of gender-equitable societies. Target 3.A. introduces to eliminate gender disparity in primary and secondary education, preferably by 2005, and in all levels of education by no later than 2015 (European Commission, 2005). It is therefore an important issue to find out how much this effort is enforcing female to reach an equitable position with male in our country. Hence the objectives of the present study are, (i) to examine whether the children of both sexes get proper care from their parents in respect of breast feeding duration, proper immunization, health care etc. and (ii) to find out their nutritional status by means of 'height-for-age', weight-for-age', 'weight-for-height', 'mid upper arm circumference' to understand whether they are malnourished, obese or normal. Therefore, the present study aims to understand

gender equity in health and health care services provided among reference population of the region keeping in mind the probable biological differences and social needs among them.

METHODOLOGY

The present research is conducted in the North 24 Parganas district of West Bengal which has been ranked as 2nd most populated district of India according to 2011 Census. Five Blocks Barasat 2, Deganga, Basirhat 1, Basirhat 2 and Hasnabad have been selected for present study. Form each Block, five Gram Panchayats were selected randomly. Data have been collected from one village of each selected Gram Panchayat. Total number of sample under study is 1000 pre-school children; 500 of each sex (below 6 years). The subjects were selected randomly from those families having at least one boy and one girl. Following standard anthropometric techniques each child was measured for height, weight, and arm circumference, and information on health care facilities such as breast feeding duration, immunization status and disease treatment facilities was gathered. Full immunization coverage among 1-year-olds were decided as per records who have received one dose of Bacille Calmette-Guérin (BCG) vaccine, three doses of polio vaccine, three doses of the combined diphtheria, tetanus toxoid and pertussis (DTP3) vaccine, and one dose of measles vaccine and after that as per normal immunization table (WHO, 2014). The height, weight and other variables were compared with the WHO 2006 standardized reference values in respect of age and sex, and also identify as normal, stunted, wasted etc. as denoted by WHO (WHO, 2006). Later the data were analysed statistically with software 'R' keeping 0.05 significance level as standard.

RESULTS

Primarily the health care facilities were analysed in respect of gender and later its impact were observed through health status indicators by using anthropometric measurements.

The breast feeding duration were analysed in respect of children getting breast feeding below one year of age and above one year.

Table-I Breast feeding duration

BREAST FEEDING DURATION			
SEX	BELOW 1 YEAR	ABOVE ONE YEAR	TOTAL
BOYS	77 (15.4%)	423 (84.6%)	500
GIRLS	84 (16.8%)	416 (83.2%)	500

The immunization status were analysed in respect of children getting each of the immunization dozes and those who have missed some of the dozes are categorised in partially immunized. No children found completely un-immunized in the study area.

Table-II Immunization status

IMMUNIZATION STATUS			
SEX	PARTIALLY IMMUNIZED	FULLY IMMUNIZED	TOTAL
BOYS	28 (5.6%)	472 (94.4%)	500
GIRLS	21 (4.2%)	479 (95.8%)	500

The next data is based on disease treatment facilities either provided by registered medical practitioners or untrained Quake Doctors for caring of the Children.

Table-III Disease treatment

DISEASE TREATMENT			
SEX	QUAKE DOCTOR	REGISTERED DOCTOR	TOTAL
BOYS	205 (41%)	295 (59%)	500
GIRLS	206 (41.2%)	294 (58.8%)	500

After observing the health care related issues in respect of gender the next focus was on the nutritional status of the children as per WHO reference cut-off values in respect of age and sex. Four basic parameters were taken to find out whether nutritional status has any gender bias or not. The first anthropometric parameter taken for analysis is height-for-age. According to the WHO cut-off point (below -2 standard deviation) has been considered as stunted.

Table-IV Height –for-Age status

HEIGHT-FOR-AGE STATUS			
SEX	STUNTED (<-2SD)	NORMAL	TOTAL
BOYS	190 (38%)	310 (62%)	500
GIRLS	175 (35%)	325 (65%)	500

The next anthropometric measurement analysed was weight in respect of age. Weight-for-age reflects body mass relative to chronological age and nutritional experience. As before, below -2 SD WHO referred cut-off point was considered as under-weight.

Table-V Weight-for-Age status

WEIGHT-FOR-AGE STATUS			
SEX	UNDERWEIGHT (<-2SD)	NORMAL	TOTAL
BOYS	186 (37.2%)	314 (62.8%)	500
GIRLS	184 (36.8%)	316 (63.2%)	500

Low weight-for-height i.e. wasting or thinness indicates a recent and severe process of weight loss, which is often associated with acute starvation and/or severe diseases. Below 2 standard deviation, was taken as wasted as per WHO reference value.

Table-VI Weight-for-Height status

WEIGHT-FOR-HEIGHT STATUS			
SEX	WASTED (<-2SD)	NORMAL	TOTAL
BOYS	114 (22.8%)	386 (77.2%)	500
GIRLS	111 (22.2%)	389 (77.8%)	500

Mid upper arm circumference for age and sex alone is a selection criterion to identify wasting or acute malnutrition (UNICEF, 2011). In the present study, arm circumference was taken on children who are below 5 years of age, as WHO provides the reference value up to five years of age.

Table-VII Arm circumference-for-Age status

ARM CIRCUMFERENCE-FOR-AGE STATUS			
SEX	WASTED (<-2SD)	NORMAL	TOTAL
BOYS	109 (21.8%)	391 (78.2%)	500
GIRLS	98 (19.6%)	402 (80.4%)	500

DISCUSSION

The data collected for the study define very clearly about the trends of the child caring facilities of the area. Primarily the parental caring facilities were observed where in Table-I the breast feeding duration was discussed. The result obtained from the study though shows some differences in breast feeding between boys and girls however, statistically the difference is not significant as the Chi-square p value is 0.5469. The second one is Immunization status (Table-II) where 95.4% children among the 1000 individuals were fully immunized. The study also showed that more girls are fully immunized than boys, though the difference is statistically not significant as the p value is 0.3051. The disease treatment facilities were classified in to two groups (Table-III) where it was observed that a large number of children (41.1%) are being treated by Quake doctors in the study area. Though this is a very awful matter, but discussing about gender the statistical analysis showed that there is also no significant difference (p 0.9487) between boys and girls regarding disease treatment facilities. The results collected from these three tables, refers that parents never showing any sort of disparity in taking care of their children in respect of boys or girls.

The next stage of discussion deals with the nutritional status of the children. The first one (Table-IV) represents the height for age data in respect of sex as per WHO cut-off value. It was observed that boys and girls showing very low difference of being stunted among the total sample. The Chi-square statistics also showed the p value between boys and girls is 0.3245 which is not significant. In Table-V the weight for age in respect of sex were distributed as per WHO cut-off value. It was observed that 37.2% boys are underweight where 36.8% girls are underweight. But the difference found between boys and girls in respect of under-weight, also does not show statistical significant difference as p value is 0.8957. Table-VI is the distribution of weight for height status in respect of sex as per WHO referred cut-off value. It was found that 22.8% boys are wasted where 22.2% girls are wasted in the present sample. The Chi-square test does not show statistically significant difference between sexes as the p value obtained is 0.8203. The same was observed in Table-VII where the distribution of children is based on arm circumference for age in respect of sex. It was found that 21.8% boys are wasted where only 19.6% girls are wasted. But though the difference is seen between sexes the result shows statistically insignificant difference as the Chi-square p value is 0.3906. Thus it also has been proved that there is no gender difference

exists in respect of nutritional statuses in the present study area statistically at 0.05 significance level.

CONCLUSION

The present research regarding gender and health reflects that parents do not possess any differential mentality in respect of health care towards their children on the basis of gender. The effect is clear from the results that show statistically non significant gender differences regarding health care facilities and nutritional status. Though the result also shows poor nutritional status of the children of the study area but it is not driven by gender. Beside these, another observation can also be drawn that somehow boys are showing a little poor health or nutritional status than girls. As the data were collected from those families having at least one boy and girl below 6 years of age under study, it is significant whether parents are concerned more about girls than boys or it is because of the phenomena that boys are biologically more delicate than girls. The result may help researcher and government policy makers in many ways. But most important conclusion from the study is that the rural population of the 2nd most populated district of India show gender equity among the pre-school level. Beside it is highly recommended, that the parents should provide proper care and nutrition as much as possible to their pre-school children as the study also shows that the pre-school children of this area have a high rate of mal-nourishment.

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