Research Article

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A comparative study of the nutritional, education and immunisation profile of children visiting tertiary care centre-is there a gender preference or no?

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ABSTRACT

Background: Girls in the country are found to be at a higher risk of malnutrition and growth retardation. Status report of 'Save the Children' highlighted that India is having largest gender survival gap in the World. Aim of the study was to study the nutrition, education and immunization profile of children visiting tertiary care centre, to know gender preference is there or no.

Methods: A descriptive study was conducted in, CHRI for a period of 6 months, where parents of all Children aged 5 -15 years were subjected to questionnaire regarding the education, immunisation and socio economic status in a predesigned proforma and their nutritional status was assessed using the anthropometric measurements and clinical examination.

Results: Out of 1020 children the proportion of boys (49%) and girls (51%). The proportion of fully immunized children in females (63.1%) compared to males (70.4%). The proportion of male children going to government and private schools was 12.4% and 87.6% respectively and 10.8% and 89.2% respectively in females. The proportion of underweight children in males (5.2%), compared to females (4.2%).

Conclusions: There was no there was no gender preference with regard nutritional, immunisation or educational status of the children.

Keywords: Education, Girl, Health, Nutrition

INTRODUCTION

The status of female child in India is an indicator of the general attitude of the society towards women. Sex ratio at birth for children born in the last five years (females per 1,000 males) 972/939. Girls in the country are found to be at a higher risk of malnutrition and growth retardation. Status report of 'Save the Children' highlighted that India is having largest gender survival gap in the World.

For a girl to grow into an active, skilled and confident woman, she needs to be nurtured in an environment of dignity and opportunity. However, the girl child is found to be the most deprived group, not only in terms of social status and educational facilities, but also nutrition and health.

The age of 0-15 years is very crucial in terms of health, growth and development for a girl. Discriminations against the girl child usually starts almost from birth and continues throughout the life of women, in her access to nutrition and physical and mental health services, endangering her current and future health. It is the Sociocultural factors that play a role in lowering the status of women in society. In most of the developing countries,

girl children are ill-fed and found to be undernourished. The root cause of malnutrition among girls is mainly due to lack of access to food due to gender discrimination rather than the lack of food. Malnourished girls will continue to grow as malnourished and stunted adolescents and adults. These malnourished adolescents will get married early and give birth to low birth weight babies who are vulnerable to become sick, malnourished and cycle continues.^{3,4} Child immunization is one of the important components of child-survival programmes and is one of the most effective known interventions to reduce this morbidity and mortality and its costeffectiveness and benefits, particularly to developing countries are beyond doubt. But gender discrimination also exists here where the data shows, percentage of girls immunised are less compared to boys.5

Another aspect is the education of the girl child; the girl child is also discriminated against extensively in the right to education, even basic at times. Due to lack of education the girl child is denied of the knowledge and skills needed to advance their status. Education helps the child to realize her full potential, to think, question and judge independently; enables her to be a wise decision-maker, develop civic sense and learn to respect, love his fellow human beings and to be a good citizen of a country.

Parental under-investment in female education is mainly due to deeply embedded undervaluation of female labour, women are being identified primarily with the reproductive or household spheres, and also of the belief that educating females bring low returns, as skills required in the reproductive sphere require domestic socialization and not many years of schooling. So this study was undertaken, to know the nutrition, immunisation and education profile of children aged 5-15 years from a tertiary care centre and to see whether there is gender discrimination or no.

METHODS

It was a Hospital based descriptive, pilot study at Chettinad Medical College Hospital and Research Institute for a period of 6 months, where parents of all Children aged 5-15 years were subjected to questionnaire regarding the education, immunisation and socio economic status in a predesigned proforma and their nutritional status was assessed using the anthropometric measurements and clinical examination.

Inclusion criteria

Children aged 5-15 years attending Paediatric outpatient department of Chettinad hospital and research institute.

Exclusion criteria

Parents of children aged 5-15 years not willing to participate in the study.

Methodology

From parents of all the children who met the inclusion criteria after an informed consent, demographic data and data regarding their education like whether going to school or not and what type of school was noted, immunisation status was determined by the history they gave in most of the children only few had brought vaccination card and socioeconomic status was determined using modified kuppuswamy scale, all these data were collected in a predesigned proforma, To find out the nutritional status of the child standing height and weight were taken.

The children were made to stand erect against a wall on a flat floor with heels closely placed, and with the help of stadiometer, height was measured in centimeters. And Weight was measured by Bathroom Weighing Machine (round shape) in kilograms. With these values body mass index (BMI) was calculated and the children were classified as underweight (<5th centile), normal (5-85thcentile), overweight (>85th centile) and obese (>95th centile). Data collected was then analysed using appropriate statistical methods.

RESULTS

A total of 1020 children were included in the analysis. The proportion of children between 9 to 12 years was 37.6%. The proportion of children between 5-8, 13 to 15 and 16 to 18 years was 27.8%, 27.3% and 7.3% respectively in study population. The proportion of boys (49%) and girls (51%) was almost similar in study population (Table 1). The proportion of boys was higher in 5 to 8 year and 13 to 15 year age groups, where girls were higher in 9 to 12 years and 16 to 18 years group (Table 2).

Table1: Descriptive analysis of age groups and gender in study population (N=1020).

Parameter	Frequency	Percent			
Age groups (years)					
5 to 8	284	27.8			
9 to 12	384	37.6			
13 to 15	278	27.3			
16 to 18	74	7.3			
Gender					
Boy	500	49.0			
Girl	520	51.0			

The proportion of fully immunized children was lesser in females (63.1%) in study population; compared to males (70.4%). The proportion of children with incomplete immunization was 29.6% and 36.9% respectively in males and females. None of the children in the study group were unimmunized (Table 3). The odds of incomplete immunization are 0.718 times in females, compared to males (95% CI 0.49 to 1.040, P value=0.80).

The association between gender and incomplete immunization is not statistically significant (Table 4).

Table 2: Cross tabulation of age and gender in study population (N=1020).

Age(years)	Male	Female
5-8	146 (51.4%)	138 (48.6%)
9-12	176 (45.8%)	208 (54.2%)
13-15	154 (55.4%)	124 (44.6%)
16-18	24 (32.4%)	50 (67.6%)

Table 3: Immunisation rates among the study population (N=1020).

Immunisation	Male	Female
0- Partial/No	0 (0.0%)	0 (0.0%)
1 -Incomplete	148 (29.6%)	192 (36.9%)
2 -Complete	352 (70.4%)	328 (63.1%)

Table 4: The association between gender and incomplete immunization.

Immunisation	Odds ratio	P- value	95% C.I. for EXP (B)		
			Lower	Upper	
Male (Base line)					
Female	0.718	0.80	0.496	1.040	

The proportion of male children going to government and private schools was 12.4% and 87.6% respectively. Whereas the similar proportion was 10.8% and 89.2% respectively in females respectively. There were no children in the study, who never went to school or dropped out from the school (Table 5). The proportion of underweight children was slightly higher in males (5.2%), compared to females (4.2%).

The proportion of overweight (7.2% in male Vs 4.2% in female) and obesity (12.8% in males and 6.9% in females) was also higher in males, compared to females (Table 6).

Table 5: Educational status of study population (N=1020).

School	Male	Female
Government	62 (12.4%)	56 (10.8%)
Private	438 (87.6%)	464 (89.2%)
Drop out	0 (0.0%)	0 (0.0%)
NO/A	0 (0.0%)	0 (0.0%)

Table 6: Nutritional status of study population (N=1020).

BMI Centile	Male	Female
<5 th (Underweight)	26 (5.2%)	22 (4.2%)
5-85 th (Normal)	376 (74.8%)	440 (84.6%)
>85 th (Over weight)	36 (7.2%)	22 (4.2%)
>95 th (Obese)	64 (12.8%)	36 (6.9%)

The proportion of male and female children belonging to various socio economic categories was almost similar in both males and females (Table 7).

Table 7: Socio economic status of the study population.

SES	Male	Female
Upper (U)	8 (1.6%)	2 (0.4%)
Upper middle (UM)	176 (35.2%)	190 (36.5%)
Lower middle (LM)	118 (23.6%)	134 (25.8%)
Upper lower (UL)	198 (39.6%)	192 (36.9%)
Lower (L)	0 (0.0%)	2 (0.4%)

Table 8: Correlation of SES with the variables.

Socio economic status	BMI (5 th centile)		Incomplete immunisation		Government school	
	Male	Female	Male	Female	Male	Female
Upper	-	-	04	02	-	-
Upper middle	-	-	20	18	08	04
Lower middle	10	14	48	70	24	18
Upper lower	16	16	76	100	30	32
Lower	-	02	-	02	-	02
Total	26	22	148	192	62	56
P value	< 0.005					

The SES correlates well with the nutritional, immunisation and education status of children both among males and females indicating as an important factor responsible for underweight, incomplete

immunisation and for placement in government schools (Table 8). According to birth order 78% were first born and 22% were second born among males and among females 62% were first born and 38% were second born.

DISCUSSION

In present study, among 1020 children 500 were males and 520 were females with 9-12 years group were the highest percentage studied here. Nutritional status showed that 75% of males were normal, 5.2% were under weight, 7.2% were overweight and 13% were obese, and among female children 85% were normal, 4.2% were under weight, 4.2% were overweight and 7% were obese, there was no significant difference in nutritional status among both genders.

But most of other studies shows that always female population suffered undernutrition, during all the periods of growth preschool, school or adolescent age. This difference may be because in most of the studies were conducted in the villages but here study was done in an suburb and age group was <5 years in majority of the studies when malnutrition will be highly prevalent but in our study we included 5-15 years only as we had to see the educational status also.

Immunisation profile shows percentage of children with complete immunisation was higher in males and among children with incomplete immunisation majority of them were females. There is significant difference among males and female regarding their immunisation status.

This is because most of the female children were reluctant and some were not aware to get the booster dose of 10 and 16 years age though they had completed the primary series. This was similar to various studies, though most of the studies enrolled children less than 5 years which was not included in our study and among various social factors like educational status of parents, socioeconomic status, gender was also the most important cause for inequity in immunisation status. 14-17

All the children were going to school, among males 87% were from private school and 13% from government school, among females 89 % were from private school and 11% from government school, there was no significant difference based on type of school, also there were no school drop outs. A Study showed that percentage of school enrolment and school attendance was less among girls as compared to boys and there were many school dropouts. In Ananthakrishnan S, et al study, there was no gender discrimination in giving nutrition and health care. However the educational status of girls was lower than that of boys in terms of school enrolment and attendance. In

According to the SES most of them in both the groups belonged to upper lower class followed by upper middle and there was no significant effect of socioeconomic status on nutrition or immunisation but for education of the child. According to birth order 78% were first born and 22% were second born among males and among females 62% were first born and 38% were second born. There was no influence of birth order on the nutritional,

immunisation and educational status among both male and female children. But some studies showed birth order >2 was significantly affected. Most of the parents wanted to get their daughter married after 18 years.

Limitations

Very small sample size, only hospital based. Extension of the study to community level has to be done to know the complete scenario of current status of the girl child.

CONCLUSION

A happy girl is the future of our country, so if gender inequality has to be removed, education must be used as the most effective step forward. A girl child should be given equal access and opportunities in every field. Empowering women is found to be the most effective tool to save girl child. Synergistic efforts incorporating a number of sectors like health, education, welfare, industry, labour, information and environment are needed to reduce the gender gap in child health. People should save girl child and respect girl child as. They are equally needed for the growth and development of any country and also have a power to create a whole world.

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