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ORIGINAL ARTICLE

HEALTH STATUS OF RURAL GIRLS

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ABSTRACT

Background- In most of the developing countries, the girl child is ill fed and undernourished. [1] Quite often the root cause of malnutrition among girls is not so much the lack of food as the lack of access to food. Thus undernourished girls who grow into undernourished women perpetuate the intergenerational undernourishment cycle.[2]
Aims and objectives- 1- To assess the health status of female child, 2- To compare the health status of female child with that of male child and to determine if gender discrimination exists.
Material and Methods- Sixteen villages were selected by stratified sampling. Altogether 470 household were selected by systematic sampling method. Only those households which had at least one male and one female child (0-14 Yrs.) were included in the study.
Observations- 44.63% of girls below 5 years of age were found to be malnourished in comparison to 15% of boys in the same age group (P< 0.001). The percentage of stunted male children (6-14Yrs.) was 14.78 while that of female children was 33.89. (P< 0.001). While 3/4th of the boys received complete treatment, it was only 2/3rd in case of girls.
Conclusion- Malnutrition was pronounced in girls as compared to boys.

Key words – Rural girls, Health status, malnourished, stunted, hygiene, complete treatment, discrimination

INTRODUCTION

In most of the developing countries, the girl child is ill-fed and undernourished.[1] As per 2011 census the population of India is 1.2 billion. The female child population is 75 million.[3] The steadily declining ratio of females to males in India over the last 100 Yrs., has been the subject of much speculation and investigation.[4] It was highlighted by the World Health Organization that unless the girl child has a sound health, the objective of " Health for All by 2000 AD" cannot be achieved. It was in this context that the " year of the Girl child" by the south Asian Association of Regional co-operation (SAARC), at its summit was held at Islamabad in Dec. 1988[5].Subsequently, the decade 1991-2000 as the SAARC Decade of the Girl child[6] has been dedicated for the girl child and to identify the areas which need attention for the betterment of the girl child.[7]

India is a signatory to a number of International Instruments such as UN Convention on the Rights of the Child, with its two Optional Protocols, and Convention on the Elimination of all Forms of Discrimination Against Women (CEDAW), thereby affirming its commitment to the growth and development of women and children. Inadequate impact of programming investment and achievement in overall development of the child, and the adverse influence of negative social attitudes towards women and girls have left girl children in India

disadvantaged. Their survival, development, security and well-being as citizens of India, and their participation as members of society is thus officially recognized as a matter of serious national concern.[8]

The girls in India do not achieve their full height and weight potential on account of dietary insufficiencies.[2]The rural adolescent population lags behind its urban counterparts in all physical growth characteristics.[9] The rural girls are shorter than their urban counterparts from upper socio-economic group. [10,11,12]

Quite often the root cause of malnutrition among girls is not so much the lack of food as the lack of access to food due to gender discrimination. In addition to nutritional stunting, undernourishment can lead to cephalo-pelvic disproportion in adulthood- both the factors are highly correlated with low birth weight babies and perinatal complications. Thus undernourished girls who grow into undernourished women perpetuate the intergenerational undernourishment cycle.[2] Number of health awareness and health education programs have been introduced by government and nongovernment agencies for the welfare and empowerment of adolescent girls as they are the future mothers. It will not be wrong if we propose that girls need to be looked after optimally from birth onwards. Malnourished girls will continue to be malnourished and stunted adolescents and adults. These malnourished adolescents get married early and give birth to small babies who are vulnerable to become sick, malnourished and death. Hence, it could be concluded that removal of gender discrimination, along with promotion of health, hygiene and nutrition is needed throughout the life cycle of women.

MATERIAL AND METHODS

The study area comprised of 46 villages under the three Primary Health Centres namely Loni, Talegaon, and Guha located in the Talukas of Shrirampur, sangamner and Rahuri respectively, which forms the field practice area of Rural medical College of Pravara Medical Trust, Loni, District Ahmednagar (Maharashtra)

All the villages were grouped in three strata on the basis of population as under-

Stratum A- <1000 population- Total villages were 11, selected were 3.

Stratum B- 1000-2500 population- Total villages were 22, selected were 8.

Stratum C- 2500+ population- Total villages were 13, selected were 5.

Selection of villages (30%) from each strata was done randomly keeping in mind that representation from all the three PHCs be possible. A total of 16 villages were selected by stratified sampling method. The study population comprises of 10 percent of the total households in each village. Altogether 470 households were selected by systematic sampling method. (Every 10th house in each village). Only those households which had at least one male and one female child (0-14 Yrs.) were included in the study.

A predesigned proforma was used to collect the data from each household after having done the pretesting.

The information regarding type, size, income, of family was collected in proforma.

Proforma was used for assessing the health status of the female child and to draw meaningful comparison with male child wherever possible. Information for proforma was collected from mothers. As far as the age of the child was concerned, the judgment of the mother was relied upon.

Regarding treatment received by children in the study, it was enquired whether they were treated by private doctor/ govt. doctor/ indigenous practitioners. It was also enquired whether the children took complete or incomplete treatment if he/ she had not completed the full course of drugs/ treatment prescribed by their doctor.

General examination was done in detail including nutritional deficiency signs and poor hygienic conditions like louse infestation, dental caries and wax in ear. Systemic examination was done if required.

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 flat ruler a mark was made on the wall and height was measured with standard metal measuring tape in centimeters. The infant was laid on the flat surface. Head was positioned firmly with eyes looking vertically. The knees extended, and the feet were flexed at

right angles to the lower legs.[13] Then, the length was taken by metal measuring tape in centimeters.

The weight of the children up to the age of 6 years was taken by Salter Baby Weighing Machine (dial type) and those above 6 years by Bathroom Weighing Machine (round shape). The weighing machine were checked daily for any possible error by comparing the results with a standard caliberated beam type of weighing machine available in Pravara Rural Hospital. The weights were taken in kilograms. The weight of children was taken after the shoes. The weight of children from 0-6 years was taken with them wearing minimal cloths, whereas the weight of children more than 6 years, with them wearing ordinary clothing.

Nutritional status of children (0- 5 Years) was classified as per Indian Academy of Pediatrics classification.[14]Nutritional status of children (6-14 years) was classified as per waterlow's classification.[15]

For statistical analysis chi-square test was used.[16]

RESULTS

Table 1 shows that 67% of male children and 43.01% of female children were healthy. As many as 44.63 % girls were placed in grades II to IV where as figure for boys was only 15 %.

Table 1: Nutritional Status of Children aging less than five years

Nutritional status	Male (%)	Female (%)
Normal	138 (67)	80 (43.01)
Grade I	37 (17.96)	23 (12.36)
Grade II	26 (12.62)	61 (32.79)
Grade III	5 (2.42)	11 (5.92)
Grade IV	- -	11 (5.92)
Total	206 (100)	186 (100)

(x^2= 35.28, d.f.=4, P< 0.001)

Table 2: Nutritional Status of Children aging 6 to 14 years

Nutritional Status	Male (%)	Female (%)
Normal	115 (39.52)	121 (33.33
Short	40 (13.74)	32 (8.81)
Wasted	93 (31.96)	87 (23.97)
Stunted	43 (14.78)	123 (33.89)
Total	291 (100.00)	363 (100.00)

(x^2 = 32.24, d.f. = 3, P< 0.001)

Table 2 shows that altogether 60.48% of male children and 66.67 % of female children were malnourished. The percentage of stunted male children was 14.78 while that of female children was 33.89.

Table 3: Level of Treatment in Boys and Girls

Level of Treatment	Boys (%)	Girls (%)
Complete	255 (75)	247 (67.67)
Incomplete	85 (25)	118 (32.33)
Total	340 (100)	365 (100)

(x^2= 4.63, d.f. = 1, P< 0.05)

Table 3 shows that while 3/4th of the boys received complete treatment, it was only 2/3rd in case of girls.

Table 4: Comparison of Physical findings in male and female

Physical Findings*	Male (%) (n1=497)	Female (%) (n2=549)
Deficiency of vit.A	2 (00.40)	16 (2.91)
Pallor	39 (7.85)	124 (22.59)
Hair Changes	11 (2.21)	64 (11.66)
Angular stomatitis	5 (1.01)	16 (2.91)
Scurvy	-	4 (0.73)
Dry scaly skin	4 (0.08)	20 (3.64)
Dental caries	84 (16.90)	111 (20.22)
Presence of ear wax	106 (21.33)	195 (35.52)
Louse infestation	5 (1.01)	44 (8.01)

***=** multiple response

The table 4 shows that all deficiency states were more common in girls as compared to boys. The findings related to poor hygiene for ex. dental caries, ear wax and louse infestation were more frequent in girls as compared to boys.

DISCUSSION

The present study was conducted in a rural community around Pravara Rural Medical College, Loni. Total of 470 households were studied which included 497 male and 549 female children in the age group of 0- 14 years.

Distribution of households according to the type of family, denotes that majority (70.63%) of the households belonged to nuclear family followed by joint or extended family (26.39%). However, a total of 3% of households had broken families.

A similar finding was observed by R. C. Goyal et al[17] whose study was conducted near Pravara Rural Medical College, Loni. Similar findings were also observed by Bhargava et al[18] while doing ICMR high risk study in three urban slum centres at New Delhi, Calcutta and Madras and three rural centres at Hyderabad, Varanasi and Chandigarh. Bildhaiya et al[19] observed that 81.44% families in rural area were of nuclear type.

On analyzing the health care utilization, it was found that 60.59% of the boys received treatment from private doctors, which requires monetary expenses while only 52.06% girls got this privilege. There appears to be a uniform difference, although a marginal one in seeking health services from private/ government and indigenous practitioners between boys and girls. Ganatra and Hirve[20] while analyzing their data on health care utilization in a rural community in Western India also pointed out a similar discrimination. In their series 88.9% of male children as compared to 76.5% of female children were treated by registered private medical practitioners. A study of Brown Memorial Hospital of the Christian medical college in Ludhiana (Punjab) by Booth et al revealed that families denied access to medical care to about 75% of girls who needed hospitalization just because of their sex. Lovel et al[21] in Pakistan found that private physicians treated 58% of boys and only 37% girls. Likewise in the urban slums of Delhi and Chennai facilities used were governmental (43.8%), private (47.2%), charitable (2.8%), chemist shop (2.8%), faith healer (0.8%), home remedy (2.3%) and combination (0.3%).[22] Girls are usually brought to the clinic or hospital in a worse condition than boys.[23]As far as level of treatment is concerned the treatment was complete in 75% of boys while it was only 67.67% in case of girls. This difference is significant.

The children were divided on the basis of their weight as recommended by Indian Academy of Paediatrics. The ideal weight for age was taken according to ICMR standards. 67% of male children and 43.01% of female children were within normal range. As many as 44.63% girls were placed in Grade II to IV malnutrition where as the figure for boys was only 15%. S. K. Ray et al[24] in a study of muslim community of Burdwan in West Bengal found that all the grades were more prevalent in females. Similar findings were also observed by Sen and Sengupta[25] in two villages of West Bengal. As per S. Rao Pune[26], 40% urban slum children were underweight and 55% were stunted.

Altogether 60.48% of male children and 66.67% of female children were malnourished in age group of 6-14 years. The percentage of stunted male children was 14.78 while that of female children was 33.89. 39.52% male and 33.33% of female children were normal. Senapati et al[27] found that total 45% children were normal (46.2% female and 43.2% male). Goyal et al[28] who studied health status of school children in Ahmednagar city, found that 15.6% children were normal and 20% children were stunted. According to K. Srinivasan et al [29] as many as 78.4 per cent children were found to be malnourished. Malnutrition was higher in boys (82%) as compared to girls (74.5%).In a study conducted by Anita malhotra et al[30] overall 29.7% of the subjects were found to be stunted.

Evidence of vit-A deficiency, Iron deficiency, B-complex deficiency and vit- C deficiency based on physical findings was much higher in girls as compared to boys. Similar findings were observed by Senapati et al[27], Gopaldas et al[31] and P. B. Shetty[32].In another study 80.4% children were found to be anemic.[29]

Poor hygiene on the basis of physical findings was observed in children. Dental caries was found in 37.12% and ear wax in 56.85% of children. Both the findings were more common in females (20.22%, 35.52% respectively). Louse infestation was found in 8.01% of girls and 1.01% of boys. The findings of R. C. Goyal et al[28] in Ahmednagar city were in contrast. They found only 1.5% children with wax in ear and 23.9% with dental caries. There is a possibility that the subjects in the above study were mainly from urban sector in contrast to our findings from rural area.

CONCLUSION

In most of the developing countries gender bias exists and the girl child does not get optimum care and share in the family. The root cause of malnutrition amongst girls is not just poverty and lack of nutritious food, but also like lack of value attached to girls. Discriminatory feeding practices exist. Girl's nutritional intake is inferior in quality and quantity; boys have access to more nutritious food. Boys are given first priority with the available food within the family. Female infants are breastfed less frequently, for shorter duration and over a

shorter period than boys.[8] Malnutrition was more pronounced in girls as compared to boys. Deficiency states including protein- energy, vit-A and iron were higher in female children than in male children. It may therefore be concluded that gender discrimination places girl child at a lower level and recognizes her as a lesser sex.

Besides nutritional status, an attempt has been made in the present study to determine the health status of the girl child. Utilization of health care system was fair by most of the households, but it was noted that boys were taken for treatment more promptly and enthusiastically in comparison to girls.

Personal hygiene was worse with girls as compared to boys. Lack of awareness along with neglect of female child are responsible for poor hygienic practices.

It is concluded that health and growth problems of the female child arise from relatively lower prenatal care and nutrition since infancy in average female child. The girls were mostly reared for getting them ready for marriage. The high incidence of stunted growth around puberty confirms the above statement.

Lot of studies have been done during adolescence, like by government of India[8] and Anita Malhotra et al[30] has also shown that adolescent girls are more malnourished, anemic in comparison to their counterpart boys.

It may therefore be concluded that as malnutrition is also gender biased, it starts from neonate through infancy, children continue up to puberty and further to adulthood. The effects of malnutrition on work capacity and cognition are less well recognized but may be irreversible and have direct negative impact on the economy of the country. Moreover, nutritional improvement by food supplementation may accelerate maturation but also increase the risk of obesity.[33] It may therefore be mentioned that the objective and subjective studies need to continue on various health parameters including anthropometry, nutrition and hygiene amongst girl children and adolescents from rural as well as urban areas.

RECOMMENDATIONS

1. General awareness should be created through mass media about the positive aspects of the girl child.
2. The girls must be educated for improving their health status as well as their future generations.
3. The health status of the female children should be improved. Sex discrimination with regard to nutritional support should be removed. The anganwadi workers, multipurpose health workers, ASHA and school teachers can assist in this task.
4. Inclusion of hygienic practices in health education should be stressed.
5. Family and community should create a new culture where girl child is respected and valued.
6. There should be congenial family life in which both boys and girls are treated with equal respect.

REFERENCES

1. Proceedings of work-shop on girl child in West Bengal. Child in Need Institute. Toka, West Bengal. 1988: 3-7.
2. Gopalan C, Kour S, editors, Women and nutrition in India, NFI, New Delhi, 1989; 2.
3. Office of the Registrar General and census commissioner. Government of India, Ministry of home affairs, India.30.11.2011<Censusindia.gov.in>
4. Ghosh Shanti. A life time deprivation and discrimination. In: Patnekar PN, Bhave Swati Y, Jayakar Angha A, Potdar RD, editors, The girl child in India-issues and perspectives 1990: 1-16.
5. Taneja PN. The girl child in India. Indian pediatrics 1990; 27: 1151.
6. Ghosh S. Editorial, It is time we thought of youth. Indian Pediatrics July 1992; 29: 821-823.
7. Xirsagar Sudha, Sahani Ashok. Health of the female child – Perspectives and issues. In: Sahani Ashok, editors, Health of the youth and female child. Proceedings of the eleventh annual conference, 1991: 121-132.
8. Subgroup report, Girl child in the eleventh five year plan. Ministry of women and child development, Government of India, Shastri Bhawan, New Delhi:3-6.
9. Gupta V, Agrawal KN, Agrawal DK. Physical growth characteristics in rural adolescent girls of Varanasi. Indian pediatrics Dec. 1990; 27:1269-1274.
10. Agrawal KN, Tripathi AM, Sen S, Katiyar GP. Physical growth at adolescence. Indian pediatrics 1974; 11:93-297.
11. Pereira P, Mehta S, Khare BB. Physical growth Characteristics in adolescent girls of upper socio economic group in Varanasi. Indian Jr. of medical Research 1983; 77:839-844.
12. Rath B, Ghosh S, Manmohan, Ramanujacharyulu TKTS. Anthropometric indices of children (5- 15 Years) of a privileged community. Indian pediatrics 1978; 15: 653-666.
13. Jellife DB. The assessment of the nutrition status of the community. WHO monograph series No.3, 1966: 64-69.
14. Ghai op. Essential pediatrics, Mehta offset works, New Delhi, india 1990.
15. Waterlow JC, Rutishausen. Malnutrition in man in early malnutrition and mental development. Cravioto J, Hambroeus, vahlquist B, edirors, Stockholm- Quist

AM, Wiksall, 13-27. Quoted in: Clinical nutrition assessment. Practical pediatric nutrition. EME Poskitt, editor, Butterworth and Company Ltd. 1988; 9.
16. Mahajan B. K. Methods in biostatistics. Jaypee brothers, 2010.
17. Goyal RC, Jejurikar ND, Bandgar BM. Infant Mortality Survey in rural area. Agricultural Medicine and Rural Health in India. 1991; 1:1;22-27.
18. Bhargawa SK, Singh KK, Saxena BM. ICMR task force nutritional collaborative study on Identification of high risk families, mother and out come of their offsprings with particular Reference to problem of maternal nutritional, low birth weight, prenatal and infant morbidity and mortality in rural and urban slum communities. Summary, conclusions and recommendations. Indian pediatrics Dec. 1991; 28: 1473-1496.
19. Bildhaiya GS, Bose C. A comparative study of health status of infants and preschool children in Rural and urban areas of Jabalpur MP. Indian Jr. of pediatrics 1977; 44:356:25-271.
20. Ganatra B, Hirve S. The lesser sex- bias against girl child in health care utilization patterns for under fives in a rural community in western India. Proceedings of 6th Asian Congress 1993; 212-220.
21. Lovel HJ, Sabir NI, Cleland J. Why are toddler girls at risk death and undernutrition in a slum area of Pakistan. Lancet 1984; 1: 797.
22. Sunder R, Mahal A, Sharma A. The burden of ill health among the urban poor. The case of slums and resettlement colonies in Chenni and Delhi. NCAER 2002; 25: 38-84
23. The girl child policy and research project. Florence Nightingale International Foundation.8th sept. 2011. < www.fnif.org/girlproject.htm>
24. Ray SK, Roy P, Deysarkari S, Lahiri A, Mukhopadhaya BB. Across sectional study of Undernutrition in 0-5 years age group in an urban community. Indian Jr. of Maternal and child H Health 1990; 1: 2: 61-62.
25. Sen A, Sengupta S. Malnutrition in rural children and sex bias. Economic and Political weekly 1983; 18:
26. Sathe PV, Sathe AP. Primary health care and planned development. In: Epidemiology and management for health care for all. Bombay Popular Prakashan, 1991: 53-85.
27. Senapati SK, Bhattacharya S, Das DK. The girl child an exposition of their status. Indian Jr. of Community Medicine 1990; 15: 1: 15-19.
28. Goyal RC, Chavan UA. Health status of school children in Ahmednagar city. Indian Jr. of Maternal and Child Health 1993; 4:3:81-83.
29. Srinivasan K, Prabhu GR. A study of nutritional status of the social welfare hostels in Tirupati, Andhra Pradesh. The Indian Jr. of Nutrition and Dietetics, May 2004; 41: 5: 210-214.
30. Malhotra A, Jain Passi S. Diet quality and nutritional status of rural adolescent girl beneficiaries Of ICDS in north India. Asian Pac Jr. Clin Nutr 2007; 16: 1: 8-16.
31. Gopaldas T, Raghavan R, Kanani S. Nutritional impact of antiparasitic drugs, prophylactic vit. A a and iron – folic acid on underpriviledged school girls in India. Nutritional Research 1983; 3: 831-844.
32. Shetty PB. School health program in municipal schools of greater Bombay. In: Patnekar PN, Bhave Swati Y, Jaykar Angha A, Potdar RD, editors, The girl child in India-issues and perspectives 1990; 84-92.
33. Aneja S, Patwari AK. Malnutrition in Adolescence. In: Bhave's Textbook of Adolescent Medicine. Jaypee brothers. 2006: 134-143.