

EPIDEMIOLOGY OF UNDERFIVE MALNUTRITION : SEX DIFFERENTIAL IN HEALTH CARE AND NUTRITIONAL STATUS (UNDERFIVE MALNUTRITION)

Lt Col A BANERJEE*

ABSTRACT

Under five children of defence personnel attending an immunisation clinic in a peace station over a three year period were screened for malnutrition and hemoglobin status. One thousand two hundred and forty eight underfives attended the clinic, out of which 703 (56.33%) were boys and 545 (43.67%) were girls. Girls showed a greater prevalence of various grades of malnutrition (28.9%) compared to boys (21.9%), ($p=0.01335458$). Mean hemoglobin level was marginally lower in girls at 10.8 gm per cent, compared to boys at 11.2 gm per cent ($p=0.000001$). Overall 25 per cent of underfives were suffering from various grades of malnutrition which is much lower than the national malnutrition rate of 63 per cent among underfives.

MJAFI 1998; 54: 119-120

KEYWORDS : Gender bias; Malnutrition; Underfive.

Introduction

Nutritional status and growth are influenced not only by the adequacy of food intake, but also by the utilisation of health services, both preventive and curative. There is abundant research evidence to indicate that gender biases in the allocation of food and health care are widely prevalent [1]. In addition to nutritional stunting, undernourishment can lead to cephalo-pelvic disproportions in adulthood - both factors are highly co-related with low birth weight babies and perinatal complications. Undernourished girls who grow into undernourished women perpetuate the inter-generational undernourishment cycle. To break this vicious cycle it is imperative to create databases on the girl child by collecting data disaggregated by gender and age and demonstrating the evidence of her unequal status and living conditions and disseminate widely the findings of such research for advocacy, policy formulation and programme interventions.

The present study was undertaken to find out whether any gender biases exist among under five children of armed forces personnel and defence civilians in utilisation of health care facilities and in nutritional status.

Material and Methods

Under five children of armed forces personnel and civilians in the cantonment area, who were brought for primary immunisation under the Universal Immunisation Programme (UIP) were screened for malnutrition with the help of the WHO growth chart adopted by the Government of India and graded into three grades

of malnutrition as recommended by the Indian Academy of Paediatrics. Their haemoglobin levels were also estimated by Sahli's acid haematin method. The study was carried out over a period of three years from Mar 91 to Mar 94 in a peace station. The utilisation of immunisation services under the UIP, which were widely publicised and freely available was used as a surrogate measure for use of health care facilities. The results were tabulated according to the sex of the child and socioeconomic status (indicated by the ranks of the father).

Results

Use of Health Care Facility : A total of 1248 under five children reported for immunisation during the study period. Out of these 703 (56.3%) were males and 545 (43.7%) were females. This gender bias was particularly evident among children of other ranks and defence civilians, who comprised of mostly Group C and Group D employees (Table 1).

TABLE 1
Utilisation of immunisation services, sex and rankwise

Rank of father	Sex of the child		Total
	Male	Female	
OR	442 (54.77%)	365 (45.23%)	807 (100%)
JCO	8 (50%)	8 (50%)	16 (100%)
Officer	5 (35.71%)	9 (64.29%)	14 (100%)
Civilian	248 (60.34%)	163 (39.66%)	411 (100%)
Total	703 (56.33%)	545 (43.67%)	1248 (100%)

(Chi square = 6.16, df = 3, $p = 0.10387565$, Chi sq excluding JOC/Off category = 3.44, df = 1, $p = 0.0636319$)

Nutritional Status : Overall 154 (21.9%) of male children and 158 (28.99%) of female children suffered from various grades of malnutrition (Table 2).

*Classified Specialist (PSM), Officer-in-Charge, Health Training Wing, Officers Training School, AMC Centre and School, Lucknow 226002

TABLE 2
Sexwise prevalence of malnutrition

Nutritional status	Sex of the child		Total
	Male	Female	
Normal nutrition	549 (78.11%)	387 (71.02%)	936 (75.0%)
Grade 1 malnutrition	116 (16.50%)	120 (22.02%)	236 (18.9%)
Grade 2 malnutrition	25 (3.55%)	31 (5.68%)	56 (4.5%)
Grade 3 malnutrition	13 (1.84%)	7 (1.28%)	20 (1.6%)
Total	703 (100%)	545 (100%)	1248 (100%)

(Chi Sq = 10.72, df = 3, p = 0.01335458)

Haemoglobin Level : The mean haemoglobin level among the girl children was 10.8 gm per cent (SD=0.932), as compared to mean of 11.2 gm per cent (SD=0.943), among the boys (p=0.000001).

Discussion

Several studies indicate that fewer resources are invested in girls health [1-4]. Access of girls to preventive and curative care is generally limited. The outpatient clinic records reveal a preponderance of male [2]. A study carried out in 1988 in the Paediatrics Department of two teaching institutions in Ludhiana revealed that out of 20,407 children who attended the outpatient department only 34.8 per cent were girls. The present study in a service community also reflects this bias albeit to a lesser degree, unmasking inborn prejudices and attitudes towards the girl child. Nationwide, the demographic situation of girls continues to deteriorate according to 1991 census figures. Gender gaps in access to health care, adequate nutrition and education remain unbridged.

Though overall malnutrition rate among underfives in the present study is much lower than the National rate of 63 per cent in the same age group [5], the residual gender bias is reflected in the higher rate of malnutrition among the underfive girl child as compared to the male child. Similar trends have been noted by other workers in the region [2,6].

If one considers that in the present study, the sample of underfives is not strictly representative, comprising of children reporting to a health care facility, therefore subject to self selection bias (girl children brought to health services will tend to have better nu-

tritional status, than those not brought to health centres), the actual difference in the nutritional status in the community is likely to be much more than revealed in the study.

Similarly, the marginally lower haemoglobin levels in girls in the present study reflects a deeper problem, as by the age of two months the haemoglobin in all babies should reach a similar figure of 11 gm per cent (from 12-22% at birth), which is the lowest level reached and from this age there is a slow rise in the mean level and the normal range in childhood is between 11-13.5 per cent [7]. Viewed against this standard the average haemoglobin of 10.8 per cent among girls in the present study indicates subnormality.

Gender bias, however small, does exist in the service community studied. There is need to create an ethos of care and value for the girl child. Such an ethos should promote the elimination of gender disparities and discrimination among children. Induction of women officers into various arms and services is a step in the right direction. They would serve as role models to girls at all levels and enhance their self confidence, self worth and self reliance.

REFERENCES

1. UNICEF. Glimpses of Girlhood in India. India Country Office, 73 Lodi Estate, New Delhi, 1994.
2. Gopalan C. Gender bias in Health and Nutrition Care, NFI Bulletin, Vol 8, No 4, 1987.
3. Shiva M. Women and Health. In: State of India's Health. Voluntary Health Association of India. New Delhi. 1992; 266.
4. Women in India: A Statistical Profile. Department of Women and Child Development, Government of India. 1988.
5. UNICEF. The Progress of Indian States. India Country Office. UNICEF House, 73 Lodi Estate, New Delhi 110003, 1996; 23.
6. Khale M, Dyalchand A, Ray Choudhary R, Sen S, Kurian N, Jadhavar FN. Edpidemiology of malnutrition : age and sex differentials. Paper presented at the All India Seminar on the status of Women and Demographic changes in India at the International Institute of Population Sciences, Bombay, 1990 October 11-13.
7. Morley David. Paediatric priorities in the developing world. ELBS. Buttersworth. London-Boston. 1973; 285.