HEALTH PROFILE OF PRIMARY SCHOOL CHILDREN: STUDY FROM A RURAL HEALTH BLOCK OF KANPUR

Harish Chandra Tiwari[1], Anju Gahlot[2], Richa Mishra[3]

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ABSTRACT: Nutritional deprivation and poor health status is rampant in children of school age particularly primary school children. The health & nutritional status of school-aged children impacts their cognition, and subsequently their educational achievement. A school health service is an important forum for improvement of health & nutritional status of school children. The present study was conducted as a part of the School Health Services being provided on regular basis by the Department of Community Medicine, Rama Medical College Kanpur in schools of Block Shivrajpur with the objective to detect the defect and diseases at the earliest and ensure prompt treatment. All students enrolled in two purposively selected primary schools of Block Shivrajpur constitute sample size. A pre-structured health card was used to record socio-demographic data, anthropometric measurements, health examination, clinical findings & provisional diagnosis for each student. Weight status of students was classified according to WHO BMI for Age classification. A total of 339 school children were included in present study. Among these 225 (66.4%) were Boys. Over-all 28.6% children were found underweight. Proportion of underweight was found higher in case of girls (33.3%) as compared to boys (26.2%). Overall 25.7% children were affected by dental caries, 20.1% skin infection, 21.5% ear discharge, 12.4% defective vision, 33.9% anemia and 11.5% vitamin-A deficiency. History of ear discharge was almost similar among boys (21.7%) & girls (21.5%). Anemia was significantly more prevalent among girls.
KEY WORDS: Morbidity, Nutritional status, School age children.

INTRODUCTION: Children are nation's greatest asset. School children constitute around 25% of total population in India[1]. They are more vulnerable to infection & malnutrition than rest of the population. The school is an opportune setting to provide health and nutrition services to children. This also gives opportunity to inculcate healthy habits and life styles to promote healthy behavior and to learn values of health and hygiene. The health & nutritional status of school-aged children impacts their cognition, and subsequently their educational achievement.

Ministry of Education is running 'Mid Day Meal' Programme & Ministry of Health is running School Health Programme to improve health & nutritional status of school children. Despite of all these, nutritional deprivation and poor health status is rampant in children of school age particularly primary school children ranging in magnitude from 20-80%[2].

School Health services are being provided on regular basis by the Department of Community Medicine, Rama Medical College Kanpur in schools of block Shivrajpur with the objective to detect the defect and diseases at the earliest by periodical health check-up and ensure prompt treatment. This is essential for making progress towards improving overall health of the school age children.

The present study was conducted as part of the School Health Services to assess the common existing health problem of school children and nutritional status of this segment of population and to arouse health consciousness among the children.

MATERIALS & METHODS: The present school-based cross-sectional study was conducted in the Rural Health Block Shivrajpur. For the purpose of the present paper, purposive sampling methodology was adopted. The survey findings from two primary schools surveyed under the school health programme have been included. All students enrolled in these two schools constitute the sample size.

A pre-structured health card for each student was used to record information regarding name, age, sex, standard in which s/he was studying, anthropometric measurements, physical examination/personal hygiene, clinical findings, provisional diagnosis.

Health Examination of each and every student underwent a thorough physical and systemic examination including a careful clinical history. The personal hygiene was assessed by observing them. They were examined for defective vision by using Snellen's chart. The nutritional status of children was assessed as follows:

Weight: Weight of every child was recorded without footwear by using weighing machine having 0.5 kg accuracy. Accuracy of the weighing scale was verified from time to time against known weights.

Height: Height was measured with the help of Stadiometer, in standing position, bare foot with heels close to each other and maintaining the head in Frankfurt plane with accuracy up to 0.5 cm.

Body Mass Index (BMI) was calculated and weight status was classified according to **WHO BMI for Age classification**[3] by using WHO BMI for age table for boys & girls. Overweight/obesity: > +1SD (equivalent to BMI 25 kg/m at 19 years) & Underweight: < -2SD

Common medicines like ORS packets, Albendazole tablets for deworming, Metronidazole, Antibiotics, Paracetamol, B-complex tablets were also distributed to the needy students. Data thus generated was analysed using SPSS software. Chi square test was used to find significant association between different variables.

RESULTS: A total of 339 school children were included in present study. Among these 225 (66.4%) were Boys. Majority (42.4%) of students were of age group 10-14 year, followed by 30.6% of age group 5-7 year.

Table: 1. Demographic profile of study subjects

Age group	Gender				Total	
	Boys		Girls			
	N	(%)	N	(%)	N	(%)
5-7 year	68	20	36	10.6	104	30.6
8-9 year	59	17.4	32	9.4	91	26.8
10-14 year	98	28.9	46	13.6	144	42.4
Total	225	66.4	114	33.6	339	100

Table 2: Distribution of school children according to their nutritional status

Nutritional status	Gender				Total	
	Boys		Girls			
	N	(%)	N	(%)	N	(%)
Underweight	59	26.2	38	33.3	97	28.6
Normal weight	156	69.3	73	64.0	229	67.5
Overweight/Obese	10	4.4	3	2.6	13	3.9
Total	225	100	114	100	339	100

Over-all 28.6% children were found underweight, 67.5% normal weight & 3.9% overweight/obese according to WHO BMI for age classification. Proportion of underweight was found higher in case of girls (33.3%) as compared to boys (26.2%). Prevalence of overweight or obese was 3.9 % (4.4% boys and 2.6% girls). No significant difference was found between the sex distribution in underweight and over-weight children (Table. 2)

Table 3: Distribution of school children according to gender and health problem

Health problems		Boys (N=225)		Girls (N=114)		Total (N=339)		X^2 -test	P- value
Dental caries	Yes	63	28%	24	21.1%	87	25.7%	X^2=1.91,	P=>0.05
Skin infection	Yes	51	22.6%	17	14.9%	68	20.1%	X^2=2.84,	P=>0.05
Ear discharge	Yes	49	21.7%	24	21.1%	73	21.5%	X^2=0.23,	P=>0.05
Defective vision	Yes	29	12.8%	13	11.4%	42	12.4%	X^2=0.15,	P=>0.05
Anaemia	Yes	69	30.6%	46	40.4%	115	33.9%	X^2=9.6,	P=<0.05
Vitamin A deficiency	Yes	23	10.3%	16	14.1%	39	11.5%	X^2=1.08	P=>0.05

Overall 25.7% children were affected by dental caries, 20.1% skin infection, 21.5% ear discharge, 12.4% defective vision, 33.9% anemia and 11.5% Vitamin A deficiency. The prevalence of dental caries, skin infection was more common among boys but the difference is not statistically significant. History of ear discharge was almost similar among boys (21.7%) & girls (21.5%). Vitamin A deficiencies was more common among girls. Anemia was more prevalent among girls compared to boys & this difference is found to be statistically significant. (X^2=9.6, P=<0.05)

DISCUSSION: Present study revealed a high prevalence of under-nutrition along with common & preventable illness among primary school children. A comparatively lower prevalence of under nutrition (28.6%) was found in present study than that reported by G K Mendhi et al[4] from Assam in 6-8 year old underweight 51.7% & Bandopadyay et al[5] from Navinagar Mumbai reported underweight 42.3%. Mitra et al[5] from Chhattisgarh reported prevalence of underweight 90.0%. We found a higher prevalence of underweight in girls (33.3%) than boys (26.2%). Mendhi et al[6], reported similar trend in their study while opposite trend has been reported by Mukherji et al[7] from Pune.

In spite of implementation of MDMP in schools a large number of school children are malnourished showing that more vigorous effort is required to combat this problem. Along with MDMP implementation of nutritional monitoring of school children as part of school health program

& improvement in school environment may play significant role in improvement of overall nutritional status of these children.

This study found that many children were having more than one ailment. Overall 25.7% were affected by dental caries in present study. Higher prevalence of dental caries (41.5%) in comparison to present study was reported in study of L. Shrestha et al[8] among students of government primary school in Pokhara. S R Nigudi et al[9] reported that 17.4 % children were affected by dental cariees.

21.5% students have history of ear discharge in present study. Similarly, in study of S R Shakya et al[10] done in Bhaktapur found the prevalence of ear problems as 22.03%. S R Nigudi et al[9] reported that 8.4% of students of Gulbarga City were having defective hearing which is lower to present study.

In the present study 20.1% of students were suffering from skin infection. S.R. Shakya, et al[10] reported that 29.8% pediculosis were found among the girl students among governmental primary school children in the eastern Nepal. L. Shrestha et al[8] reported 32.6% pediculosis among students of primary school in Pokhara. Our study reported defective vision as 12.4% which is similar to study of Madhu Gupta et al[11]. Present study reported 33.9% of anaemia in contrast to 79% reported by NFHS-3[12]. This shows significant improvement in anaemia among school children, but still one of the three school going student is anaemic.

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AUTHORS:

1. Harish Chandra Tiwari
2. Anju Gahlot
3. Richa Mishra

PARTICULARS OF CONTRIBUTORS:

1. Assistant Professor, Department of Community Medicine, RMCH & RC, Kanpur.
2. Associate Professor, Department of Community Medicine, RMCH & RC, Kanpur.
3. Senior Resident, Department of Community Medicine, IMS, BHU, Varanasi.

NAME ADDRESS EMAIL ID OF THE CORRESPONDING AUTHOR:

Dr. Harish Chandra Tiwari,
Assistant Professor,
Department of Community Medicine,
Rama Medical College, Hospital & Research Center,
G.T. Road, Mandhana, Kanpur, UP – 209217.
Email- dr.harishchandratiwari@gmail.com

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