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Original Research Article

Health status of primary school children: study from a rural health block of Lucknow

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ABSTRACT

Background: School health is an important branch of community health. School health services is an economical and powerful means of raising community health. In school child is vulnerable to stress, tension and endangerment of group life because all children are not the same and comes from different socioeconomic and cultural background and with different immunity status. Child is quite vulnerable at this growing age and hence become easy victims of many non-communicable diseases such as dental caries, anaemia, visual and hearing defects. The objective of the study was to assess health status of primary school children in rural areas of Lucknow.
Methods: The present school-based descriptive cross-sectional study was conducted in the rural area of Lucknow from February to July 2015. Purposive sampling technique was adopted to select primary schools from 1st to 5th standard. All students who were present at the time of survey were included in the study. A pre-structured performa for each student was used to record information regarding anthropometric measurements, physical examination/ personal hygiene, clinical findings.
Results: A total of 170 children were examined, among these 82 (48.23%) were boys and 88 (51.77%) were girls. Dental caries was the most common infirmity observed in 63 (37.05%) children with 95% CI (33.35- 40.75) and was statistically significant ($p<0.05$) with boys 29.27% and girls 44.31%. Anaemia were found in 65 (38.23%), boys were 32.92% and girls 43.18%. Ear discharge was seen in 17 (10%) children, boys were 6.10% and girls 13.63%.
Conclusions: The common infirmity found were dental caries, anaemia and ear discharge. Effective strategy with good monitoring and evaluation is imperative in ensuring adequate and optimal implementation of school health services in primary schools in rural Lucknow.

Keywords: Body mass index, Health status, Anaemia, Dental caries

INTRODUCTION

School health is an important branch of community health. School health services is an economical and powerful means of raising community health, and more important, in future generations. The school health services are a personal health services. It has developed during the past 70 years from the narrower concept of medical examination of children to the present day broader concept of comprehensive care of the health and wellbeing of children throughout the school years. Schools play a significant role in promoting the health and safety of students. Ideally, rural schools will strive to provide a healthy physical environment for students to learn, provide nutritious meals, and encourage physical activity.[1] India has made progress in terms of increasing the primary education attendance rate and expanding literacy to approximately three-quarters of the population in the 7–10 age group, by 2011.[2] As per the annual status of education report (ASER) 2012, 96.5% of all rural children between the ages of 6-14 were enrolled in

school. This is the fourth annual survey to report enrolment above 96%. Three-quarters of the population in the 7–10 age group, by 2011.[3] Through projects, creative activities and after-school sports, children get a chance to learn the importance of forging relationships with each other but this can sometimes lead to stress, tension and endangerment of group life because all children are not the same and come from different socioeconomic and cultural background and with different immunity status. Child is quite vulnerable at this growing age and hence become easy victims of many non-communicable diseases such as dental caries, anaemia, visual and hearing defects.

The objective of the study was to assess health status of primary school children in rural areas of Lucknow.

METHODS

Study population

The present school-based descriptive cross-sectional study was conducted in the rural area of Lucknow from February to July 2015.

Data collection

Purposive sampling technique was adopted to select primary schools from 1st to 5th standard. All students who were present at the time of survey were included in the study. A pre-structured Performa for each student was used to record information regarding anthropometric measurements, physical examination/personal hygiene, clinical findings. Every student underwent a thorough systemic and physical examination including a careful clinical history. Anemia was diagnosed by the presence of pallor at lower palpebral conjunctiva, mucous membrane, tongue, soft palate, nail beds and skin surface. The personal hygiene was assessed by observing them. The nutritional status of children was assessed as follows:

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.[4]

Weight

Weight was recorded using standard weighing scale, after adjusting it to zero, children were asked to step on it and stand still for equal distribution of weight. Weight was recorded to the nearest 100 g.[4]

Body mass index (BMI)

Weight status was classified according to WHO BMI for age classification by using WHO BMI for age table for girls and boys. Overweight/obesity: ≥1SD (equivalent to BMI 25 kg/m at 19 years) and underweight: ≤2SD.[5]

RESULTS

Table 1: Distribution of children according to gender.

Gender	Number	Percentage
Girls	88	52
Boys	82	48
Total	170	100

Table 2: Demographic profile of study subjects.

Age group (in years)	Gender				Total	
	Boys		Girls			
	N	%	N	%	N	%
5-7	24	14.11	15	8.82	39	22.95
8-10	31	18.23	41	24.12	72	42.35
10-13	27	15.89	32	18.82	59	34.70
Total	82	48.23	88	51.76	170	100

Table 3: Distribution of children according to their school standards.

School standard	Boys		Girls		Total	
	N	%	N	%	N	%
1st	24	29.27	15	17.04	39	22.94
2nd	22	26.83	19	21.59	41	24.11
3rd	9	10.98	21	23.87	30	17.65
4th	14	17.07	23	26.13	37	21.77
5th	13	15.85	10	11.37	23	13.53
Total	82	100	88	100	170	100

Total number of school children enrolled in the study was 170.Among these 82 (48%) were boys and 88 (52%) were girls (Table 1). All students were divided into age groups and majority were from the age groups of 8- 10 years (42.35%) followed by age group of 10 -13 which were 34.70% (Table 2). Majority of children were from 2nd standard around 24% followed by 1st standard which were around 23%, as seen in (Table 3).

Out of 170 children, underweight were 68 children (40%) and was more common among girls (42%) and normal weight was seen in 54 percent of children, nearly equally seen in boys and girls (54.88% and 53.41%) respectively. However overweight/obese were seen only in 5% children (Table 4). A total of 37.05% had Dental caries, and was seen more common in girls around 44.31% and it was statistically significant (x^2 =4.12, p≤0.05). Ear discharge was noticed in 10% and was more common in girls (13.63%). Anaemia was observed in 38.23%, personal hygiene (inadequate) were found to be around 36.47% and was seen more common in girls 39.78%. Vitamin A deficiency 4.70% and Worm infestation was 6.47% (Table 5).

Table 4: Distribution of school children according to their nutritional status.

Nutritional status	Gender				Total	
	Boys		Girls			
	N	%	N	%	N	%
Under weight	31	37.80	37	42.04	68	40
Normal weight	45	54.88	47	53.41	92	54.11
Over weight/obese	6	7.32	4	4.55	10	5.89
Total	82	100	88	100	170	100

Table 5: Distribution of school children according to gender and health problem.

Health problems	Boys (n =82)		Girls (n =88)		Total (n =170)		95% CI	X^2 -test	P value
Dental caries	24	29.27%	39	44.31%	63	37.05%	33.35-40.75	4.12	0.042
Ear discharge	5	6.10%	12	13.63%	17	10	7.70-12.30	2.68	0.102
Anaemia	27	32.92%	38	43.18%	65	38.23	30.93-45.54	1.89	0.169
Vitamin A deficiency	3	3.65%	5	5.68%	8	4.70	1.52-7.89	0.387	0.534
Personal hygiene (inadequate)	27	32.92%	35	39.78%	62	36.47	32.78-40.16	0.859	0.354
Worm infestation	4	4.88%	7	7.96%	11	6.47	2.77-10.17	0.664	0.415

DISCUSSION

According to UNICEF India, the level of child undernutrition remains unacceptable throughout the world, with 90 per cent of the developing world's chronically undernourished (stunted) children living in Asia and Africa.

Detrimental and often undetected until severe, undernutrition undermines the survival, growth and development of children and women, and diminishes the strength and capacity of nations.[6]

A relatively higher prevalence of under nutrition 40% was found in present study than that reported by Tiwari et al from Kanpur, (28.6%) and comparable Patel et al from Ahmedabad reported under nutrition (29.44%), and relatively higher prevalence then our study was reported by Mehdi et al from Assam to be (57%).[7-9] Under nutrition was little distinguished in girls (42.04%) compared with boys (37.80%).

This study revealed that many children were having more than one infirmity. Overall 37.05% were affected by dental caries in present study. Higher prevalence of dental caries (41.5%) in contrast to present study was reported in study of Shrestha et al from Pokhara and Eram et al from Aligarh reported dental caries to be (38%).[10,11] Similarly lower prevalence of dental caries was reported by Kulkarni et al from Karnataka (31.86%), and Patel et al from Ahmedabad observed Dental caries to be around (25.19%).[8,12]

10% students had history of ear discharge in our study. Likewise, in study of Tiwari et al from Kanpur, higher prevalence of ear discharge (21.5%) was reported.[7] Similarly Kumar et al in his study from Annechikuppam, Tamilnadu found higher prevalence of ear problems as (17.90%), and Nigudi et al reported that (8.4%), of students of Gulbarga City were having defective hearing which is lower to our study.[13,14]

Jain and Jain reported anemia (clinical pallor) (42%), which was higher than the finding of (38.23%) reported in the present study and lower prevalence of anemia (clinical pallor) then our study was reported by Kulkarni et al, Panda et al, Dambhare et al and Shivaprakash et al reported to be (15.8%), (26%), (28.45%) and (25.4%) respectively.[8,12,15-17]

CONCLUSION

The common infirmities found were underweight (40%), dental caries (37.05%), anaemia (38.23%) and ear discharge (10%). Effective strategy with good monitoring and evaluation is imperative in ensuring adequate and ideal implementation of school health services in primary schools in rural Lucknow. Thus school health education should mainly target at these problems with special focus on personal hygiene and cleanliness of ears and teeth by proper and regular brushing should be emphasize.

Data analysis

The data were entered using Statistical Package for the Social Sciences version 17.0 (SPSS Inc.). Test of significance applied was Chi-square test and $p<0.05$ was taken as statistically significant.

Limitations

Duration of the study was short and small sample size. Finding was based on patient's history and clinical examination. Laboratory investigations were not done to

confirm the clinical diagnosis of anemia and worm infestation was not done and other detailed examination like that of ear, eyes was not done due to lack of ophthalmoscope and otoscope.

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