

## A STUDY ON MORBIDITY PATTERN OF SCHOOL CHILDREN AGED 5-15YRS IN AN URBAN AREA OF GUNTUR

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### HOW TO CITE THIS ARTICLE:

KV Phani Madhavi, B Anil Kumar. "a study on morbidity pattern of school children aged 5-15yrs in an urban area of Guntur". Journal of Evolution of Medical and Dental Sciences 2013; Vol2, Issue 34, August 26; Page: 6566-6572.

**ABSTRACT: INTRODUCTION:** School aged children (5-15) yrs have not received much attention of health providers/planners as the under fives. Since these growing children are the future citizens of the country, the strength and pride of the nation depends on their health. They are the greatest resource of the nation and the national asset. Hence there is an immense need to focus attention on this age group. The present study was carried out to find out the morbidity pattern of school children aged 5-15yrs. **OBJECTIVE:** To study the pattern of morbidity in school children (5-15 years) in urban area of Guntur. **METHODOLOGY:** The present cross-sectional study was carried out among all the students, in the age group 5-15 years, of all the four government schools in the field practice area of urban health centre of Guntur medical college in Guntur from February 2013 to June 2013. **STATISTICAL ANALYSIS:** percentages and Chi-square test. **RESULTS:** In the present study 1138(51.82%) of the study participants are boys and 1058(48.18%) are girls. Almost 59.88% of school children are suffering with malnutrition. About 28.92% of the school children had anaemia. The prevalence of anaemia was significantly higher in girls (65.35%) than in boys (34.65%). Almost 14.85% had dental caries, 7.65% had tonsillitis, 28.14% had pediculosis, 11.38% suffered from refractive errors. The prevalence of pediculosis was significantly higher in girls (57.12%) than in boys (23.29%).

**KEY WORDS:** school children (5-15 years), morbidity pattern, nutritional status

**INTRODUCTION:** Children are not only divine gifts but also the mirror of a nation and hope of the world. They are the country's biggest human investment for development. It is rather unfortunate that even after 60 years of Independence, our country had made little progress in improving the health condition of our school children when compared to the developed countries.<sup>1</sup>

School children constitute a large pool of children of this age group. The beginning of school health services in India dates back to 1909 when, for the first time medical examination of school children was carried out in Baroda city<sup>2</sup>. Since then, various types of government sponsored school health programmes have been launched from time to time, but progress and achievements are very slow and incomplete and very often limited to the urban and few favoured schools. In addition, school health services are irregular and intermittent, without follow-up or accountability. The 5-15 years old children are on the threshold of adulthood. If they are to reach adulthood in a healthy state, then it is necessary to provide targeted and concerted services to improve their health status.<sup>2</sup> The present study was carried out to study the pattern of morbidity in school children (5-15 years) in urban area of Guntur.

**METHODOLOGY:** The present cross-sectional study was carried out among all the students, in the age group 5-15 years, of all the four government schools in the field practice area of urban health

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centre of Guntur medical college in Guntur from February 2013 to June 2013. Permission of the head masters of the schools was obtained for the study.

Total of 2196 students (1138 boys and 1058 girls) were interviewed and examined. They were interviewed through oral questionnaire method and desired information was collected using pre-designed and pre-tested proforma. A thorough clinical examination was made along with anthropometric measurements which were carried out at school premises in one room made available for this purpose. A qualified pediatrician was involved in the survey along with us. The nutritional status of the children was assessed by Indian Academy of Pediatrics<sup>3</sup>. For detecting anemia Hemoglobin estimation was done by Sahli's haemoglobinometer. Cut off level of Hb (g/dl) for anemia in children was taken as 12g/dl.<sup>4</sup> For screening the hearing ability of the children the "Wisper Test"<sup>5</sup> was used. Vision was tested by means of Snellen's chart test<sup>6</sup>. Worm infestation was diagnosed by doing stool examination.

**Statistical Analysis:** Percentages and Chi-square test were calculated using Epi info.

**Inclusion criteria:** All students who were present in school at the time of interview and clinical examination in the age group 5-15 years.

## OBSERVATIONS:

- In our study 1138(51.82%) of the study participants are boys and 1058(48.18%) are girls.
- Almost 59.88% of school children are suffering with malnutrition.
- Malnourishment is significantly more in boys when compared with girls
- About 28.92% of the school children had anaemia.
- The prevalence of anaemia was significantly higher in girls (65.35%) than in boys (34.65%).
- Among the school children about 14.85% had dental caries, 7.65% had tonsillitis, and 28.14% had peduculosis, 5.42% had scabies, 11.38% suffered from refractive errors.
- The prevalence of peduculosis was significantly higher in girls (57.12%) than in boys (23.29%).
- The prevalence of worm infestation was 31.51%, which was found to be more among boys (51.45%) as compared to girls (48.55%).
- About 28.92% of the school children had anaemia.
- The prevalence of anaemia was significantly higher in girls (65.35%) than in boys (34.65%).
- Among the school children about 14.85% had dental caries, 7.65% had tonsillitis, and 28.14% had peduculosis, 5.42% had scabies, 11.38% suffered from refractive errors.
- The prevalence of peduculosis was significantly higher in girls (57.12%) than in boys (23.29%).
- The prevalence of worm infestation was 31.51%, which was found to be more among boys (51.45%) as compared to girls (48.55%).

**DISCUSSION:** In our study we noted malnutrition in 59.88% children. These findings are higher than the findings of Panda et al<sup>7</sup> (52.2%), Ananthkrishnan et al<sup>8</sup> (57.6%), Semwal et al<sup>10</sup> (52.6%), and Shakya et al<sup>11</sup> (51%) and Prakash et al<sup>12</sup>.

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In the present study, anaemia was detected in 28.92% (34.65% in boys and 65.35% in girls) children which is slightly more than that found by Panda et al<sup>7</sup>, Semwal et al<sup>10</sup>, Hassan et al<sup>9</sup> and Chandra et al<sup>13</sup> in their studies ( 26%, 28.4%, 24.8% and 25.5% respectively) and less than findings (37.48%) of Mullick<sup>5</sup> amongst school children in Jhansi. In all these studies girls were found to be more anaemic than boys which is similar to the findings in our study.

In our study, 14.85% children (51.84% boys and 48.16% girls) were found to be suffering from dental caries which is lower than that observed by Shakya et al<sup>11</sup> (19.8%) and Panda et al<sup>7</sup> (23.1%) and almost similar to the findings of Pandey et al<sup>14</sup> who also reported dental caries in 13.56% children .

In our study the prevalence of refractive error was 11.38%. Whereas it was 2.2% in a study conducted by Ibeinmo Opubiri et al. <sup>15</sup>In our study 5.42% had scabies, whereas it was 2.9% in a study conducted by Sambo MN et al.<sup>16</sup>

In our study 28.14% had pediculosis which was more when compared to 10.2% in a study conducted by Serpil Degerli et.al.<sup>17</sup>

In the present study the prevalence of worm infestation was 31.51% as compared to 17.6% in a study done by LK Khanal et.al. <sup>18</sup>In the present study the prevalence of worm infestation among boys (51.45%) is comparatively more than girls (48.55%) which are coinciding with findings of LK Khanal et.al. <sup>18</sup>

## CONCLUSIONS:

- The girl children in our study were better nourished than boys. The prevalence of anaemia was significantly higher in girls than in boys
- Malnutrition and anaemia make the children more susceptible to infection.
- The prevalence of scabies, pediculosis, and worm infestation is higher than studies quoted.

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Table 1: Distribution of the children by age & sex

Age (in years)	BOYS		GIRLS		TOTAL No
	No	(%)	No	(%)	
15	68	40.24	101	59.76	169
14	89	43.20	117	56.80	206
13	105	49.53	107	50.47	212
12	124	51.03	119	48.97	243
11	95	45.67	113	54.33	208
10	107	50.95	103	49.05	210
9	87	53.37	76	46.63	163
8	152	66.96	75	33.04	227
7	118	58.13	85	41.87	203
6	95	49.48	97	50.52	192
5	98	60.12	65	39.88	163
	1138	51.82	1058	48.18	2196

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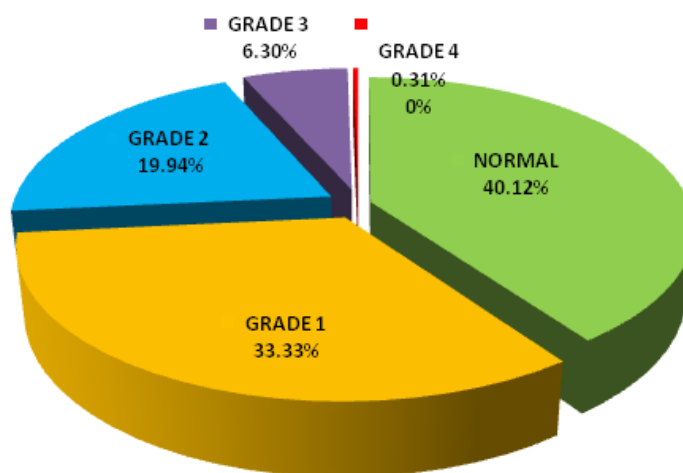
- In the present study 1138(51.82%) of the study participants are boys and 1058(48.18%) are girls.

**Table 2: Nutritional status of children - Weight for age for standard median (IAP Classification of Malnutrition)**

AGE	NORMAL		PEM							
			GRADE - I		GRADE - II		GRADE - III		GRADE - IV	
	BOYS	GIRLS	BOYS	GIRLS	BOYS	GIRLS	BOYS	GIRLS	BOYS	GIRLS
15	38	61	28	26	27	13	7	0	0	0
14	28	51	24	32	29	13	16	4	3	0
13	20	48	23	36	38	13	17	3	2	0
12	39	45	26	35	23	14	12	6	0	0
11	30	45	46	16	15	33	9	6	0	0
10	44	47	30	32	25	17	1	3	0	1
9	26	38	34	47	28	14	7	1	1	0
8	40	17	43	50	9	26	8	7	0	0
7	49	59	24	27	24	14	3	0	0	0
6	43	61	46	27	7	6	4	6	0	0
5	22	30	35	45	26	24	17	1	0	0
	379	502	359	373	251	187	101	37	6	1

- Almost 59.88% of school children are suffering with malnutrition.

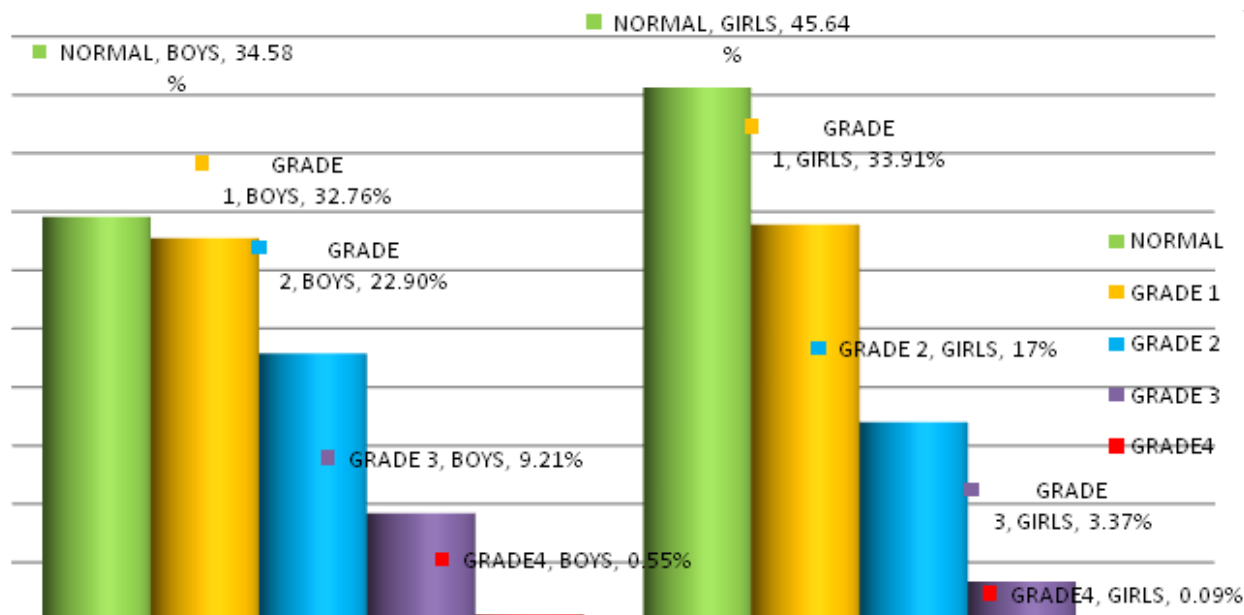
**FIGURE 1: Grades of Malnutrition**



- The prevalence of malnutrition was 59.88%.
- One third of the children (33.33%) were suffering from grade 1 malnutrition.
- About 19.94% were suffering from grade 2 malnutrition

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**FIGURE 2: Sex wise distribution of Malnutrition**



The above figure shows that Malnourishment is significantly more in boys (65.42%) when compared with girls (54.36%).

Only 0.55% of the boys are suffering from grade 4 malnutrition.

**Table 3: Sex wise distribution of Normal and Undernourished children**

	Boys	Girls	Total
<b>Normal</b>	379(43.02%) (33.30%)	502(56.98%) (47.45%)	881(100%) (40.12%)
<b>Undernutrition</b>	759(57.72%) (66.7%)	556(42.28%) (52.55%)	1315(100%) (59.88%)
<b>Total</b>	1138(51.82%) (100%)	1058(48.18%) (100%)	2196(100%) (100%)

$\chi^2 = 46.0695$   $df=1$   $p$  value  $< 0.001$  significant

Malnourishment is significantly more in boys when compared with girls.

**Table 4: Morbidity pattern of children under study**

	Boys		Girls		Total		Chi-square value for 1 df $\chi^2$
	No	(%)	No	(%)	No	(%)	
<b>ANAEMIA</b>	220	34.64	415	65.36	<b>635</b>	<b>(100)</b>	<b>104.58</b>
<b>DENTAL CARIES</b>	169	51.84	157	48.16	<b>326</b>	<b>(100)</b>	0.0028
<b>TONSILLITIS</b>	76	45.24	92	54.76	<b>168</b>	<b>(100)</b>	2.87
<b>CSOM</b>	94	54.65	78	45.35	<b>172</b>	<b>(100)</b>	0.4818
<b>WAX</b>	428	50.95	412	49.05	<b>840</b>	<b>(100)</b>	0.3571

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<b>ARI</b>	87	52.09	80	47.91	<b>167</b>	<b>(100)</b>	0.0000
<b>WORM INFESTATIONS</b>	356	51.44	336	48.56	<b>692</b>	<b>(100)</b>	0.0374
<b>SCABIES</b>	60	50.42	59	49.58	<b>119</b>	<b>(100)</b>	0.0485
<b>PEDUCULOSIS</b>	265	42.88	353	57.12	<b>618</b>	<b>(100)</b>	<b>27.0427</b>
<b>REFRACTIVE ERRORS</b>	126	50.40	124	49.60	<b>250</b>	<b>(100)</b>	0.1686

- Ear wax was the commonest ailment seen among the study children.
- Anemia, worm infestation and pediculosis are other common ailments in the study children.
- The prevalence of anemia was significantly higher in girls (65.35%) than in boys (34.65%).
- The prevalence of pediculosis was significantly higher in girls (57.12%) than in boys (23.29%).

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Date of Submission: 07/08/2013.  
Date of Peer Review: 08/08/2013.  
Date of Acceptance: 17/08/2013.  
Date of Publishing: 23/08/2013