

Morbidity profile of primary school children in rural Koppal, Karnataka

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Abstract

Introduction: School health is an important intervention as a great deal of research tells us that schools can have a major effect on children's health, by teaching them about health and promoting healthy behaviors.

Objectives: To assess the morbidity profile of primary school children in rural Koppal.

Materials and Method: This cross-sectional study was conducted in all the school children aged 6-12 years from August 2016 to December 2016. Data was compiled, tabulated and analyzed using proportions.

Results: A total of 1722 school children were enrolled in study with a mean age of 9.24 years; 31.4% were in the age group of 10-11 years. On examination it was found that, 20.3% were suffering from ARI, 8.1% anemia, and 13.8% were having dental caries.

Recommendation: The most common morbidities among school children were related to nutrition and personal hygiene which are linked to each other in causing various morbidities.

Keywords: School children, Morbidity pattern, ARI, Dental caries, Anemia

Introduction

Children are divine gifts and they are the country's biggest human investment for development. Even after 67 years of Independence, our country has not made much progress compared to the developed countries in improving the health condition of school children.⁽¹⁾ Quality of life of school children continues to be very poor in especially in rural part of our country.⁽²⁾ Apart from home, schools are the most important places of learning for children. A survey in India revealed that major contributing factors are related to poor sanitation and personal hygiene.⁽³⁾ Nutritional deficiencies and poor health in primary school children are the main causes of poor attendance, and poor performance in the examinations, therefore health of the school children is considered to be an important factor.⁽⁴⁾ According to the survey carried out in India, majority of the health problems of the school children are malnutrition, infectious disease, intestinal parasites, disease of skin, eye and ear and dental caries.⁽⁵⁾ Poor nutritional status of the school children affects their achievements in the field of education and sports. There has been already established relationship between the scholastic performance and nutritional status of the children.⁽⁴⁾

Objectives of the study

To assess the morbidity profile of primary school children in rural Koppal.

Materials and Method

This cross-sectional study was conducted for a period of 5 months from August 2016 to December 2016 in a rural area of Koppal. Children in the age group of 6 to 12 years were selected using the method of population proportionate to size sampling. Using the

list of villages as per the 2011 census report of Koppal district and by cluster interval 15 villages were selected. Permission from the authorities of education department. Pre-designed and pre-tested proforma was used to collect socio-demographic profile and thorough clinical examination was made along with anthropometric measurements which were carried out at school premises in one room made available for this purpose.

Pallor of the conjunctiva/ tongue/palms was used as a screening for iron deficiency anaemia. Lips, gums and tongue of the children were examined for the presence of angular lesions, cheilosis, gum swelling and bleeding, glossitis, papillary atrophy and other signs of deficiency.

Inclusion criteria: Students who were present in school at the time of interview were enrolled for the study

Statistical analysis: The data was entered in Microsoft excel 2010 and analyzed using Epi-info 3.5.2. Descriptive statistics and chi-square test for proportions were used.

Result

A total of 1722 school children were enrolled in study with the mean age group of 9.24 years. Majority (31.4%) were in the age group of 10-11 years, and 16.7% were aged 12 years and equal. Male students constituted about 45.1% and 54.9% were female. Majority of the students had nuclear type of family in their house (59.8%), while only 12.9% were 3 generation family. Almost half of the study subjects were in class III socio-economic status (42.7%), while only 1.4% was in class I SES. (Table 1).

Table 1: Socio-demographic characters of school children

Indicators	Frequency	Percentage (%)
Age in years		
6-7	492	28.6
8-9	402	23.3
10-11	540	31.4
≥12	288	16.7
Gender		
Male	776	45.1
Female	946	54.9
Type of family		
Nuclear	1030	59.8
Joint	470	27.3
3-generation	222	12.9
Socio-economic status		
I	24	1.4
II	238	13.9
III	736	42.7
IV	558	32.4
V	166	9.6
Total	1722	100.0

A total of 1722 school students were examined, Almost half of the study subjects (43.0%) were found to have no health issues, 20.3% were suffering from ARI, 8.1% anemia, and 13.8% were having dental caries, 1.5% of the study subjects were showing the signs of nutritional deficiencies. (Table 2).

Table 2: Distribution of school children according to morbidity pattern (n=1722)

	Frequency	Percentage
Normal	748	43.0
ARI	350	20.3
Dental caries	238	13.9
Anaemia	140	8.1
Worm infestation	58	3.4
Skin infections	176	10.2
Nutritional deficiency	26	1.5
Others	40	2.3

*n=1722

Highest incidence of ARI is observed in 10-11 years (27.0%), followed by dental caries (17.6%) in same age group. (Table 3).

Table 3: Morbidity patterns with different age group*

Morbidity pattern	Age grouped (in years)			
	6-7	8-9	10-11	≥12
	No. (%)	No. (%)	No. (%)	No. (%)
Normal	242 (54.9)	162 (45.5)	200 (45.2)	144 (59.5)
ARI	92 (20.9)	92 (25.8)	120 (27.1)	46 (19.0)
Dental caries	73 (16.6)	53 (14.9)	78 (17.6)	34 (14.0)
Anemia	37 (8.4)	30 (8.4)	35 (7.9)	38 (15.7)
Worm infestation	20 (4.5)	23 (6.5)	10 (2.3)	5 (2.1)
Skin manifestations	55 (12.5)	59 (16.6)	56 (12.7)	6 (2.5)
Nutritional deficiency	7 (1.6)	13 (3.7)	4 (0.9)	2 (0.8)
Others	4 (0.9)	10 (2.8)	22 (5.0)	4 (1.7)

*Multiple signs and symptoms observed in single child

There is no much difference of anemia cases among male and female, while 102 male students reported skin manifestations compared to 30 females (Table 4).

Table 4: Morbidity patterns with gender*

	Gender	
	Male	Female
	No. (%)	No. (%)
Normal	366 (53.0)	164 (53.2)
ARI	152 (22.0)	68 (22.1)
Dental caries	121 (17.5)	51 (16.6)
Anemia	36 (5.2)	25 (8.1)
Worm infestation	15 (2.2)	17 (5.5)
Skin manifestations	102 (14.8)	30 (9.7)
Nutritional deficiency	16 (2.3)	4 (1.3)
Others	11 (1.6)	4 (1.3)

*Multiple signs and symptoms observed in single child

Table 5: Morbidity patterns with types of family*

	Type of family		
	Nuclear	Joint	3 generation
	No. (%)	No. (%)	No. (%)
Normal	424 (47.9)	214 (52.1)	110 (59.5)
ARI	242 (27.3)	81 (19.7)	27 (14.6)
Dental caries	144 (16.3)	71 (17.3)	23 (12.4)
Anemia	91 (10.3)	29 (7.1)	20 (10.8)
Worm infestation	46 (5.2)	7 (1.7)	5 (2.7)

Skin manifestations	118 (13.3)	43 (10.5)	15 (8.1)
Nutritional deficiency	18 (2.0)	6 (1.5)	2 (1.1)
Others	17 (1.9)	16 (3.9)	7 (3.8)

*Multiple signs and symptoms observed in single child

Discussion

In our study, 43% of students were having no health issues. 20.3% were suffering from ARI, 8.1% anemia, and 13.8% were having dental caries, 1.5% of the study subjects were showing the signs of nutritional deficiencies. Our study shows that boys have more morbid conditions (40.1%) compared to girls (17.8%). Contrast to our study findings, Kaushik A and Panda P et al studies showed girls were having more morbid conditions.^(6,7)

Major morbidities observed in our study were ARI (20.3%), followed by dental caries (13.8%) and anemia (8.1%). Study done by Mhaske, et al showed Dental caries (65.1%) as major morbidity followed by ARI (38.2%).⁽⁸⁾ Dongre AR et al study in Wardha reported, the most common morbidities among children were ARI (56.6%), and dental caries (8.3%).⁽⁹⁾ Deb S et al study conducted at Calcutta, showed pallor as a sign of anemia (55.34% and 51.85%), as a common morbidity among the boys and girls respectively.⁽¹⁰⁾

In our study, 10.2% of students showed skin infections, which is almost similar to studies done by Kaushik A et al,⁽⁶⁾ (11.4%) and Dogra S et al (11.4%).⁽¹¹⁾

Conclusion

The morbidity profile reported in our study was found to be dependent on personal hygiene and nutritional intake. Our children are still undernourished in spite of regular mid day meal program at schools indicating the calorie intake at home is not adequate. Regular school health programmes should focus to educate and promote health among children. An effective school health service with active involvement of the parents can provide a vibrant healthy environment within their homes with existing resources and equip children with necessary knowledge and skills to lead a healthy life.

Acknowledgement

Authors would like to thank the Director KIMS, Koppal and BEO, Koppal taluk for permitting us to conduct the study. Authors express sincere gratitude to all the participants of study. Authors also acknowledge the co-operation received from the teaching staff of all primary schools.

Funding: Self

Conflict of interest: None declared

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