

Original Research Article

Morbidity among Marathi Medium Primary School Students in Urban Area: A Cross-Sectional Study

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ABSTRACT

Background: Students is the wealth of the nation as they constitute one of the major and important segments of the society. The foundation of good health and sound mind is laid during the school age period. Children undergo rapid change in the behavior and their health takes shape during this period. In view of this, study was conducted to assess the health status of the primary school students in urban area.

Methods: This was a descriptive cross-sectional study conducted in urban area among Marathi medium private primary school children. The school was selected by non-probability convenient sampling method. All the students present in the school were included in the study. Pre-designed proforma was used to record the data. Data was entered in Microsoft Excel and analyzed. Chi-square test was applied. The statistical significance level was fixed at $p < 0.05$.

Results: Total 269 primary school students were examined of which 06(02.23%), 08(02.97%) and 28(10.41%) were overweight, obese and underweight respectively. 20(07.43%) subjects were having poor personal hygiene. Total 128(47.58%) students were having one or more morbidity. Of the 128(47.58%) subjects with morbidity, 96(35.69%) were suffering from dental problems, 20(07.43%) were having ear wax, 42(15.61%) were having pallor and 10(03.72%) were suffering from upper respiratory tract infection. The proportion of morbid students was highest (57.41%) in 2nd standard.

Conclusion: The common morbidities found among primary school children can be addressed with effective implementation of school health program. Parents and teachers should be actively involved in this initiative to achieve desired outcome.

Keywords: Morbidity, Marathi Medium, Primary School Students

INTRODUCTION

Morbidity among school going children is a major public health concern as this adversely affects their growth and development. Poor health impairs both the growth and cognitive development of the primary school children. There is growing evidence of considerable burden of morbidity among school going children.¹ Healthy children are the foundation of a healthy nation. Nation's growth and development is depending on the status of the children. The school as a social institution has greater influence on the lives of the children apart from the family. Everyday children spend a considerable amount of time interacting with their

peers and teachers gaining knowledge, building attitudes and skills as well as developing behaviors. Since school as a useful platform to promote health and prevention of various diseases among school going children, Government of India has launched 'School Health Program' under Ayushman Bharat Scheme.²

In India, the first medical examination of school children was conducted in the city of Baroda in 1909. According to Bhore Committee, school health services in India were essentially non-existent till 1946 and where they did exist, they

were substandard. In 1953, the secondary education committee emphasized the need of student medical examination and nutrition program. Investing in the health of children is a major priority of the National Health Policy 2017. For many years, the WHO and its Global School Health Initiative as well as Government of India have emphasized the significance of health promotion in schools. Early intervention is crucial in dealing with the rising frequency of communicable and non-communicable diseases among school going children. With the help of the WHO's Global School Health Initiative, the Government of India has directed several policies and programs to include health more fully into education.³

School health promotion is an international need with programs implementing across continents due to numerous documented benefits, to not just the individuals but to the community and country as a whole. Simple primary health care interventions focusing on hygiene habits, such as lessons of hand hygiene, have a vital role in health education and promotion.⁴ Oral health is a key indicator of overall health, well-being and quality of life of the school students. Poor oral hygiene, dental caries and other oral diseases constitute more than 50.00% of the major public oral-health problems, among children and adolescents.⁵ Children are considered as the greatest asset of the nation. School children constitute around 25.00% of the total population of India. They are more vulnerable to malnutrition, infections and oral diseases than rest of the population.⁶

Oral health problems including dental caries is a major public health problem in developing countries like India.⁷ Increasing myopia and poor dental hygiene denotes a changing morbidity pattern in private primary school students of the urban area. School health services which include teaching to school children about health and among them promoting healthy behaviors is an important intervention to promote health of the school children.⁸ The health and well-being of the children is a fundamental issue in education. Morbidity including physical defects constitutes major health issues among the school children.⁹ School is acknowledged as the place where children gain knowledge from health education sessions on various aspects of personal hygiene, sanitation and social customs. Health is one of the key factors determining the enrolment, performance and continuation in school.¹⁰

The objective of the present study was to assess the health status of the Marathi medium private primary school students in an urban area.

MATERIAL AND METHODS

This was a descriptive cross-sectional study conducted in an urban area of Thane in the month of September, 2024, among primary section children of a Marathi medium private school which was selected by non-probability convenient sampling method. Necessary permission and approval were obtained before commencement of the study. Permission from the school authority and informed consent from the parents or guardian of the children was obtained. Inclusion and exclusion criteria were defined. All the students present in the school at the time of school health examination were included in the study. Pre-designed, pre-tested and formatted proforma was used to record the relevant data of the study subjects. Portable weighing machine, wall mounted height measuring scale, stethoscope, measuring tape, pen torch etc. tools were used during the study. Socio-demographic data of the students was recorded in the proforma. Thorough anthropometric and clinical examination of the subjects was performed in good day-light and the findings were recorded. Collected data was entered in Microsoft excel and analysed statistically. The categorical variables were presented as numbers and percentages. Chi-square test was used to compare differences in categorical variables. The statistical significance level was fixed at $p < 0.05$.

RESULTS

Total 269 students aged between 6 to 10 years and studying in class 1st to 4th i.e. primary school were examined, of which 139(51.67%) were boys and 130(48.33%) were girls. 121(44.98%) students were in the age group of 6-8 years while 148(55.02%) were between >8-10 years. 67(24.91%), 54(20.07%), 55(20.45%) and 93(34.57%) students were from 1st, 2nd, 3rd and 4th standard respectively. (Table-1).

Table-1: Age, class and gender wise distribution of the subjects (n=269)

Age in years	Total (n=269)		Boys (n=139, 51.67%)		Girls (n=130, 48.33%)	
	n	%	n	%	n	%
6-8	121	44.98	65	46.76	56	43.08
>8-10	148	55.02	74	53.24	74	56.92
Standard						
1 st	67	24.91	36	25.90	31	23.85
2 nd	54	20.07	29	20.86	25	19.23
3 rd	55	20.45	27	19.42	28	21.54
4 th	93	34.57	47	33.81	46	35.38

Of the 269 subjects, 227(84.39%) were having normal weight while 06(02.23%), 08(02.97%) and 28(10.41%) were overweight, obese and underweight respectively. Of the 227(84.39%) normal weight subjects 73(32.16%), of the 06(02.23%) overweight 04(66.67%), of the 08(02.97%) obese 07(87.50%) and of the 28(10.41%) underweight 09(32.14%) were from 4th standard. 08(14.54%) students from class 3rd were underweight. 07(07.53%) and 04(04.30%) subjects from class 4th were obese and overweight respectively. (Table-2)

Table-2: Nutritional status and class wise distribution of the students (n=269)

Nutritional status	Total (n=269)		Class							
			1 st (n=67)		2 nd (n=54)		3 rd (n=55)		4 th (n=93)	
	n	%	n	%	n	%	n	%	n	%
Normal	227	84.39	58	86.57	51	94.44	48	87.27	70	75.26
Overweight	06	2.23	0	0.00	0	0.00	0	0.00	0	0.00
Obese	08	2.97	0	0.00	0	0.00	0	0.00	0	0.00
Underweight	28	10.41	0	0.00	0	0.00	0	0.00	0	0.00

Of the 269 subjects, 227(84.39%) were having normal weight. Of these 227(84.39%) 117(51.54%) were boys and 110(48.46%) were girls. Of the 06(02.23%) overweight subjects 05(83.33%) were boys and 01(16.67%) was girl. Of the 08(02.97%)

obese 05(62.50%) were boys and 03(37.50%) were girls. Of the 28(10.41%) underweight subjects 12(42.86%) were boys and 16(57.14%) were girls. (Table-3)

Table-3: Nutritional status and gender wise distribution of the students (n=269)

Nutritional status	Total (n=269)		Boys (n=139)		Girls (n=130)	
	n	%	n	%	n	%
Normal	227	84.39	117	51.54	110	48.46
Overweight	06	2.23	05	83.33	01	16.67
Obese	08	2.97	05	62.50	03	37.50
Underweight	28	10.41	12	42.86	16	57.14

Of the 269 subjects, 249(92.57%) were having well while 20(07.43%) were having poor personal hygiene. Of the 249(92.57%) students, 125(50.20%) were boys and 124(49.80%) were girls. Of the 20(07.43%) with poor personal hygiene, 14(70.00%) were boys and 06(30.00%) were girls. (Table-4)

Table-4: Personal hygiene and gender wise distribution of the subjects (n=269)

Personal hygiene	Total (n=269)		Boys (n=139)		Girls (n=130)	
	n	%	n	%	n	%
Well	249	92.57	125	50.20	124	49.80
Poor	20	7.43	14	70.00	06	30.00
P value			0.09			

Of the 269 subjects, 128(47.58%) were having one or more morbidity like upper respiratory tract infection (URTI), skin issues, fever, eye problems, dental issues, ear wax, headache and pallor. Overweight, obese and underweight subjects were separately counted and shown in Table-3. Of these 128(47.58%) subjects with morbidity, 56(43.75%) were from 6-8 years and 72(56.25%) were >8-10 years of age group. 68(53.12%) were boys and 60(46.88%) were girls. (Table-5)

Table-5: Socio-demographic factors and morbidity wise distribution of the subjects (n=269)

Variables and categories		Total (n=269)		Morbidity			
				Present (n=128)		Absent (n=141)	
		n	%	n	%	n	%
		269	100.0	128	47.58	141	52.42
Age in years	6-8	121	44.98	56	46.28	65	53.72
	>8-10	148	55.02	72	48.65	76	51.35
P value				0.70			
Gender	Boys	139	51.67	68	48.92	71	51.08
	Girls	130	48.33	60	46.15	70	53.85
P value				0.65			

Symptoms and signs like fever, upper respiratory tract infection (URTI), skin issues, eye problems, dental issues, ear wax, headache and pallor were present among 128(47.58%) subjects. Some students were having more than one health issues. Of the 128(47.58%) subjects with morbidity, majority i.e. 96(35.69%) were suffering from dental problems, 20(7.43%) were having ear wax, 42(15.61%) were having pallor and 10(3.72%) were suffering from upper respiratory tract infection. The average morbidity among the subjects (n=128) was 01.43. The average morbidity among the students in the age group of 6-8 years (n=56) and among aged >8-10 years (n=72) was 01.98 and 01.01 respectively. Similarly, it was 01.49 and 01.33 among boys and girls respectively. (Table-6)

Table-6: Morbidity, age and gender wise distribution of the morbid subjects (n=128)

Morbidity	Total (n=128)		Age groups in years				Gender			
			6-8 (n=56)		>8-10 (n=72)		Boys (n=68)		Girls (n=60)	
	n	%	n	%	n	%	n	%	n	%
Fever	03	02.34	01	33.3	02	66.7	02	66.7	01	33.3
URTI	10	07.8	06	60.0	04	40.0	07	70.0	03	30.0

		1		0		0		0		0
Skin	08	06.25	05	62.5	03	37.5	05	62.5	03	37.5
Eye	04	03.12	02	50.0	02	50.0	02	50.0	02	50.0
Dental	96	75.00	61	63.46	35	36.54	59	61.46	37	38.54
Ear wax	20	15.62	13	65.00	07	35.00	13	65.00	07	35.00
Headache	01	00.78	00	0.00	01	10.00	00	0.00	01	10.00
Pallor	42	32.81	23	54.76	19	45.24	13	30.45	29	69.55

More than one morbid condition was present in some students.

Of the 128(47.58%) subjects with symptoms or signs 23(17.97%) were from 1st standard, 31(24.22%) were from 2nd standard, 26(20.31%) were from 3rd standard and 48(37.50%) were from 4th standard. Of the 67(24.91%) subjects from 1st standard 23(34.33%), of the 54(20.07%) subjects from 2nd standard 31(57.41%), of the 55(20.45%) from 3rd standard 26(47.27%) and of the 93(34.57%) students from 4th standard 48(51.61%) were suffering from one or more health problems. Proportion of morbid students was highest i.e. 57.41% among 2nd standard. Of the 96(75.00%) students with dental morbidity 46(47.92%) were from 4th standard. Of the 42(32.81%) subjects with pallor 24(57.14%) were from 4th class. (Table-7)

Table-7: Morbidity and class wise distribution of the students with health issues (n=128)

Health problems	Standard									
	n = 128		1 st (n=23)		2 nd (n=31)		3 rd (n=26)		4 th (n=48)	
	n	%	n	%	n	%	n	%	n	%
Fever	03	02.34	02	66.7	00	0.00	01	33.3	00	0.00
URTI	10	07.8	00	0.00	03	30.00	01	10.00	06	60.00
Skin	08	06.25	02	25.00	01	12.50	04	50.00	01	12.50

Eye	04	03.12	00	00.00	00	00.00	02	50.00	02	50.00
Dental	96	75.00	11	11.46	20	20.83	19	19.79	46	47.92
Ear wax	20	15.62	01	05.00	09	45.00	09	45.00	01	05.00
Headache	01	00.78	00	00.00	00	00.00	00	00.00	01	10.00
Pallor	42	32.81	11	26.19	04	09.52	03	07.14	24	57.14

More than one morbid condition was present in some students.

The mean age of the subjects was 07.67 years with standard deviation (SD) and coefficient of variation (CV) of 01.22 and 15.91 years respectively. The mean weight of the subjects was 20.66 kilograms with standard deviation and coefficient of variation of 06.35 and 30.74 kilograms respectively. The mean height of the subjects was 126.94 centimeters with standard deviation and coefficient of variation of 07.27 and 05.73 centimeters respectively. The mean BMI of the subjects was 12.64 kg/m² with standard deviation and coefficient of variation of 02.94 and 23.26 kg/m² respectively. (Table-8)

Table-8: Measures of central tendency and variation of age in years, height in centimeter, weight in kilogram and BMI (kg/m²) of the students (n=269)

Variables	Measures of central tendency			Measures of variability		
	Mean	Mode	Median	Range	SD	CV
Age	07.67	09	08	6-10	1.22	15.91
Weight	20.66	15	19	11-52	6.35	30.74
Height	126.94	130	127	110-149	7.27	05.73
BMI	12.64	11.7	11.9	7.7-25.8	2.94	23.26

DISCUSSION

In the present study, 269 students from Marathi medium private primary school were examined, of which 139(51.67%) were boys and 130(48.33%) were girls. 121(44.98%) students were in the age

group of 6-8 years while 148(55.02%) were between >8-10 years. 67(24.91%), 54(20.07%), 55(20.45%) and 93(34.57%) students were from 1st, 2nd, 3rd and 4th standard respectively. Of the 269 subjects examined by us, 227(84.39%) were having normal weight. Of these 227(84.39%), 117(51.54%) were boys and 110(48.46%) were girls. Of the 06(02.23%) overweight subjects 05(83.33%) were boys and 01(16.67%) was girl. Of the 08(02.97%) obese 05(62.50%) were boys and 03(37.50%) were girls. Of the 28(10.41%) underweight subjects 12(42.86%) were boys and 16(57.14%) were girls. Venkata Suresh Anga et al¹ in their study in Vijayawada among primary school going children observed 01.20% prevalence of obesity. Severe stunting was found in 02.30% of children. Severe underweight was found in 02.50% of the students. The most common morbidities among the subjects were dental caries (32.50%), defective vision in both eyes (28.5%), diarrhea in last three months (24.7%), ARI in last three months (21.50%), ear wax (20.90%), dandruff in hair (19.00%), tonsil enlargement (11.90%) and pale conjunctiva (10.10%). 81.80% students had one or the other morbidity.

We observed, among the 269 subjects examined, 227(84.39%) were having normal weight while 06(02.23%), 08(02.97%) and 28(10.41%) were overweight, obese and underweight respectively. Of the 227(84.39%) normal weight subjects 73(32.16%), of the 06(02.23%) overweight 04(66.67%), of the 08(02.97%) obese 07(87.50%) and of the 28(10.41%) underweight 09(32.14%) were from 4th standard. 08(14.54%) students from class three were underweight. 07(07.53%) and 04(04.30%) subjects from 4th class were obese and overweight respectively. Mahender Singh et al² examined 261 primary school students from urban and rural areas of Eastern Haryana. They observed 80.00% students from urban school and 50.00% students from rural school were suffering from ENT problems. Poor personal hygiene was observed among 1/5th students. Nidhi Shree et al⁵ conducted study among students of seventh, eighth and ninth grades in Hooghly district, West Bengal. They observed more than half of the participants, that is 55.70% had bad oral health and rest 44.30% had good oral health. More than one-third, that is 42.40% had unhealthy teeth, 65.10% were suffering from caries tooth, 33.70% had dental plaques, 7.2% had dental erosions, 35.60% had halitosis and 38.10% had unsatisfactory teeth alignment.

Kausar H. et al⁶ observed 60.00% of the children were having one or more morbidity among school children in their study in rural area of Jalna. 52.27% students were having nutritional deficiency diseases. Prevalence of morbidities among girls was more than boys. Of the 269 subjects examined in our study, 249(92.57%) were having well while 20(07.43%) were having poor personal hygiene. Of the 249(92.57%) students, 125(50.20%) were boys and 124(49.80%) were girls. Of the 20(07.43%) with poor personal hygiene, 14(70.00%) were boys and 06(30.00%) were girls. 128(47.58%) were having one or more morbidity. Of these 128(47.58%), 56(46.28%) were from 6-8 years and 72(48.65%) were >8-10 years of age group. 68(48.92%) were boys and 60(46.15%) were girls. Sharma S. et al⁷ observed 48.68% prevalence of dental caries among secondary school children in Mumbai metropolitan region. Also observed that, of the 152 subjects examined, 137(90.13%) were having one or more oral health problems.

Mayavati S. Mhaske et al⁸ in their cross-sectional study in urban area among private primary school children observed, 65.10% subjects were suffering from dental caries, 38.20% were suffering from upper respiratory tract infections, 29.90% were having wax in ears, and 10.00% were having myopia. They observed significantly higher mean hygiene score among girls (4.32) than boys (3.95) and poor hygiene observed in older boys. In our study, we observed symptoms and signs like fever, upper respiratory tract infection (URTI), skin issues, eye problems, dental issues, ear wax, headache and pallor among 128(47.58%) subjects. Some students were having more than one health issues. Of the 128(47.58%) subjects with morbidity, majority i.e. 96(35.69%) were suffering from dental problems, 20(07.43%) were having ear wax, 42(15.61%) were having pallor and 10(03.72%) were suffering from upper respiratory tract infection. The average morbidity among the subjects (n=128) was 01.43. The average morbidity among the students in the age group of 6-8 years (n=56) and among aged >8-10 years (n=72) was 01.98 and 01.01 respectively. Similarly, it was 01.49 and 01.33 among boys and girls respectively.

Chinmay N. Gokhale et al⁹ in their study among primary school children in tribal area observed, around 30.00% subjects were malnourished as per WHO weight-for-age standards. The teeth hygiene was most compromised and dental caries was commonest morbidity among these children studying in primary school in tribal area of Palghar

district. In the present study we observed, of the 128(47.58%) subjects with symptoms or signs 23(17.97%) were from 1st standard, 31(24.22%) were from 2nd standard, 26(20.31%) were from 3rd standard and 48(37.50%) were from 4th standard. Of the 67(24.91%) subjects from 1st standard 23(34.33%), of the 54(20.07%) subjects from 2nd standard 31(57.41%), of the 55(20.45%) from 3rd standard 26(47.27%) and of the 93(34.57%) students from 4th standard 48(51.61%) were suffering from one or more health problems. Proportion of morbid students was highest i.e. 57.41% among 2nd standard students. Of the 96(75.00%) students with dental morbidity 46(47.92%) were from 4th standard. Of the 42(32.81%) subjects with pallor 24(57.14%) were from 4th class. Krishna Kar et al¹⁰ in their study in Odisha observed, 47.60% school children were suffering from pallor, followed by skin diseases (34.50%) and dental caries (23.20%).

In our study we observed, the mean age of the subjects was 07.67 years with standard deviation (SD) and coefficient of variation (CV) of 01.22 and 15.91 years respectively. The mean weight of the subjects was 20.66 kilograms with standard deviation and coefficient of variation of 06.35 and 30.74 kilograms respectively. The mean height of the subjects was 126.94 centimeters with standard deviation and coefficient of variation of 07.27 and 05.73 centimeters respectively. The mean BMI of the subjects was 12.64 kg/m² with standard deviation and coefficient of variation of 02.94 and 23.26 kg/m² respectively.

CONCLUSIONS

In spite of having one or more health issues like dental issues, upper respiratory tract infection, skin issues, eye problems, ear wax, headache, fever, pallor etc many primary school students do attend the classes. These common health problems found in them can be addressed with implementation of school health program in effective way to avoid complications. These common infirmities can be easily prevented and controlled by actively involving parents and teachers in the school health program. Effective implementation and monitoring of school health program is a need of the hour.

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Source of support: Nil

Conflict of interest: None declared

How to cite: Gurav RB, Geevarghese PS, Nair AS. Morbidity among Marathi Medium Primary School Students in Urban Area: A Cross-Sectional Study. *GAIMS J Med Sci* 2026;6(2):74-80.

<https://doi.org/10.5281/zenodo.21288865>