



MORBIDITY PATTERN AND PREVALENCE OF OVERWEIGHT AMONG SCHOOL GOING CHILDREN IN THE URBAN FIELD PRACTICE AREA OF A MEDICAL COLLEGE IN AURANGABAD, MAHARASHTRA

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ABSTRACT

Background: School children constitute 20% of total population. So, schools are the ideal settings for implementation of screening program. Gradually there has been a rise in childhood morbidity. **Objective:** to determine the prevalence of various childhood morbidities. **Study Design:** It was a community based cross-sectional study conducted in field practice area of a medical college in Maharashtra. **RESULTS:** There were 442 participants, 222 (50.22%) boys and 220 (49.78%) were girls. The overall prevalence of morbidity was 51.08% with pallor (34.16%) being most common morbidity. There was significant association between gender and pallor, ear wax, pain in abdomen and overweight; p -value < 0.00. **CONCLUSION:** Screening of morbidity and health promotion at school level is of sheer importance to prevent upcoming health issues in the society.

KEYWORDS: school-children, morbidity, overweight, field practice area.

INTRODUCTION

Schools are the learning centres for children. After home, a child spends most of the time in school. They acquire physical, mental, social and emotional skills there.^[1]

School going children constitute 20% of total Indian population. This group is particularly vulnerable to infectious diseases, malnutrition, intestinal parasites, ocular and skin diseases than any other group.^[2] Obesity is another major cause of increasing morbidity and mortality.^[3] BMI in children should be expressed in relation to other children of same age and sex.^[4] All these can be prevented by better nutrition, promoting hygiene practices and screening at early stages.^[5]

Screening of school children plays a major role in child's health and also promoting health status of children.^[6] In India school health services began long back in 1909, when the first medical examination was carried out in Baroda city. However, WHO announced global school initiatives in 1995.^[7]

This study aims at assessing pattern of morbidity and overweight prevalent among school going children residing in urban field practice area of a medical college in western Maharashtra.

MATERIALS AND METHODS

It is a community-based cross-sectional study carried out on three different days in the month of January 2018 in Maratha High School. School health camp is arranged every year by the Department of Community Medicine, Government Medical College, Aurangabad in different schools of the urban field practice area as a part of UG/PG teaching program. After getting permission from the school authority, all students from class 3 to class 10 present on screening days were included in the study. Thus, a total of 442 students were screened.

A pre-tested, semi-structured proforma containing information regarding socio-demographic profile of the study subjects like age, sex, family income, type of family, education and occupation of the parents, anthropometric details were recorded. Weight was measured after removing shoes by using electronic weighing machine with 0.1 kg accuracy, height was measured using inch-tape with the subjects standing against wall in erect position. Waist circumference was recorded in centimetres by a non-stretchable measuring tape at the level of navel. The students were screened for the presence of various morbidities like presence of eye problems, respiratory tract infections etc. Lips, gums and tongue of the children were examined for the presence of angular stomatitis/ cheilosis, gum swelling and bleeding, atrophy. Any obvious signs of deformity like bowing of legs, knock knee, squint was noted. Dental inspection

was carried out for dental caries, malocclusion, diseases of the gums and supporting structure of teeth, dental fluorosis or mottled enamel was noted. Thyroid Gland and Lymph nodes examination was carried out to find out any abnormality. A thorough systemic examination was done to detect any abnormality in the respiratory system, gastro-intestinal system, circulatory system and central nervous system. Eyes and eyelids were examined for any signs of conjunctivitis, stye, xerophthalmia and blepharitis. Underweight and overweight was determined according to WHO criteria for BMI.

BMI	Nutritional status
Below 18.5	Underweight
18.5–24.9	Normal weight
25.0–29.9	Pre-obesity
30.0–34.9	Obesity class I
35.0–39.9	Obesity class II
Above 40	Obesity class III

*Source: <http://www.euro.who.int/en/health-topics/disease-prevention/nutrition/a-healthy-lifestyle/body-mass-index-bmi>.

For the sake of calculation all the participants with BMI ≥ 25 were categorised as overweight. Information was collected and entered in excel sheet and data analysis was done using SPSS trial version 24 (trial version).

RESULTS

The study included 442 students, out of which 222 (50.22%) were boys and 220 (49.78%) were girls (table 1). The minimum age of the participants was 9 years old and maximum 18 years with the average age being 13.35 years (figure 1).

308 (69.68%) participants belonged to a nuclear family and 134 (30.32%) were from joint families.

334 (75.57%) participants had history of some communicable or non-communicable disease in their

family. 229 (51.80%) participants had some type of morbidity (figure 2). The major morbidities found were pallor (34.16%) followed by ear wax and otalgia (22.17%), diminution of vision associated with watering of eyes (21.27%), dental caries and plaque (14.93%), pain abdomen (14.03%), malocclusion of teeth (6.56%), then bleeding and swollen gums (5.43%). Ear discharge (4.3%), angular stomatitis/ cheilosis (3.39%) and worm infestation (2.71%) were some other common morbidities.

18 students were febrile on the day of examination. Out of 442 students 151 (34.16%) students had pallor evident on lower palpebral conjunctiva amongst them 128 (84.77%) were girls and 23 (15.23%) were boys whereas 2 participants (both boys) had signs of icterus.

66 (14.93%) participants had complains of dental caries and plaque, 29 (6.56%) had malocclusion of teeth and 24 (5.43%) complained of bleeding and swollen gums.

15 (3.39%) students had angular stomatitis/cheilosis. 98 (22.17%) had ear wax, otalgia and 19 (4.3%) had history of ear discharge. 94 (21.27%) participants had reported diminution in vision along with watering/ some discharge from eyes, 7 (1.58%) were squint. Further 12 (2.71%) students had history of passage of worm in last 3 months and 62 (14.03%) complained of having pain abdomen with or without vomiting (table 2). Also 30 (6.79%) out of 442 students had some birth mark on their face. Significant association was found between gender and pallor, ear discharge, ear wax and pain abdomen. It was found to be more in girls (p -value < 0.00 ; Table 2).

On the basis of WHO defined BMI criteria 330 (74.66%) out of 442 were found underweight, 10 (2.26%) were overweight/ obese. Gender was significantly associated with overweight/obesity, it was found to be more among girls (table 3).

TABLES AND FIGURES

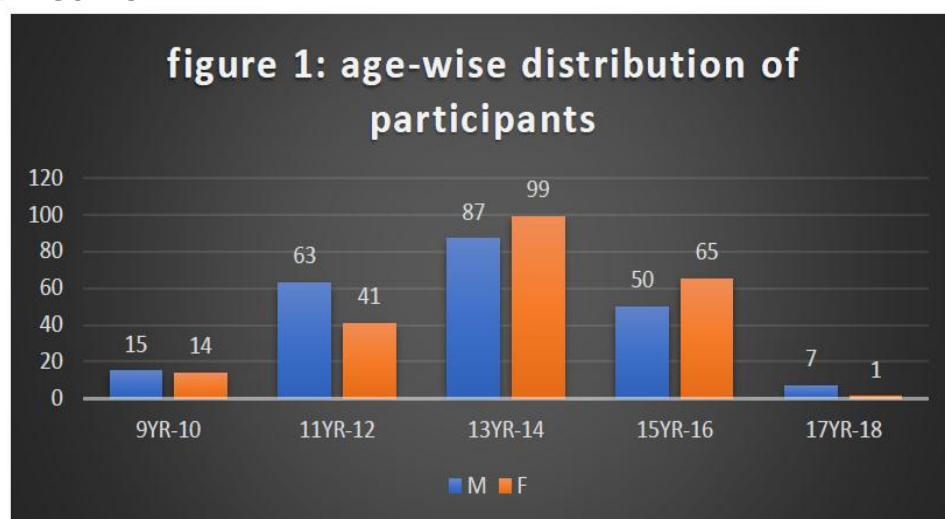


Figure 2: distribution of participants according to morbidity

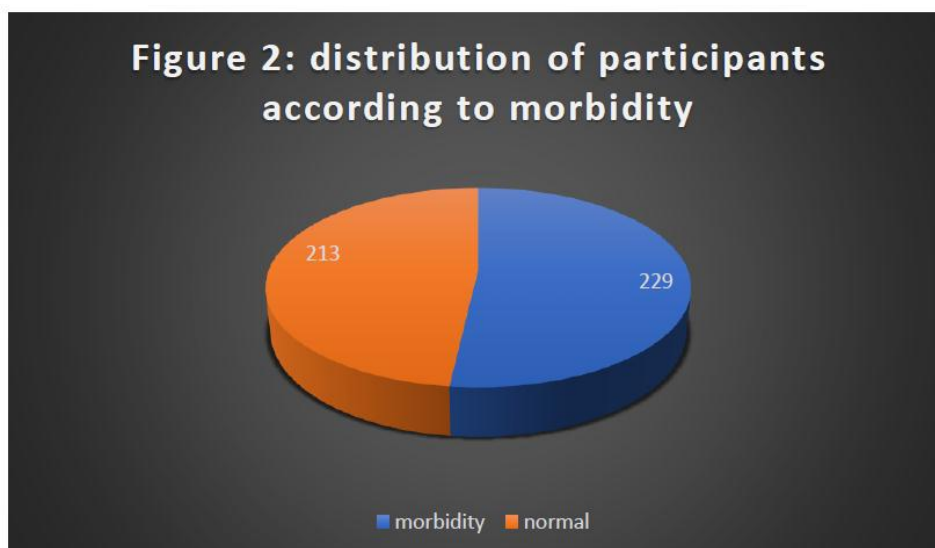


Table 1: demographic profile of study subjects.

		Frequency	Percentage
Sex	F	220	49.78
	M	222	50.22
	Total	442	100.0

Table 2: morbidity pattern among the participants.*

Morbidity	Boys(%)	Girls(%)	Total	X ² value	p-value
Pallor	23 (15.23)	128 (84.77)	151 (100)	112.4	<0.0000001
icterus	2 (100)	0	2(100)	-	-
Dental caries	35(53.03)	31(46.97)	66(100)	0.244	0.6213
Malocclusion of teeth	18(62.07)	11(37.93)	29(100)	1.741	0.1872
Bleeding/ swollen gums	14(58.33)	10(41.67)	24(100)	0.6672	0.4140
Angular stomatitis/cheilosis	5(33.33)	10(66.67)	15(100)	1.772	0.1833
Ear wax	27(27.55)	71(72.45)	98(100)	25.9	0.000000360
Ear discharge	4(21.05)	15(78.95)	19(100)	6.759	0.009327
Diminution of vision and watering	26(27.66)	68(72.34)	94(100)	24.32	0.000000816
squint	3(42.86)	4(57.14)	7(100)	0.1545	0.6943
Worm infestation	6(50.00)	6(50.00)	12(100)	0.0002526	0.9873
Pain abdomen ± vomiting	22(35.48)	40(64.52)	62(100)	6.27	0.01228
diarrhea	3(75.00)	1(25.00)	4(100)		0.6301(fisher exact)

*multiple responses.

Table 3: distribution of study participants according to their basal metabolic index (BMI).

		Total		
		Underweight	Normal	Overweight / obese
SEX	F	152	63	5
	M	178	39	5
Total		330	102	10
				442

*X²= 7.69, p- value= 0.021

DISCUSSION

In present study, there were 222(50.23%) boys and 220(49.77%) girls this was less than the study of Singh Harpal^[8]: boys (58.31%) and (41.68%) girls. The overall prevalence of morbidity was found to be 51.8% which was similar to the study by Shinde^[9] (54.83%) but much less than that reported by Kaushik A^[10] (85.3%) and Arulmani A² (97%) however, it was more than that found

by Singh D^[11] (38.8%). The prevalence of pallor (34.16%) in this study was more than that reported by Singh D^[11] (24.0%), Kulkarni et al^[12] (15.8%) and Rani et al^[13] (26.9%) in their studies but comparable to that reported by Arulmani A² (40%). This study found the prevalence of diminished vision (21.27%) was lesser than what Singh Harpal^[8] reported in his study (47.91%). The prevalence of ear discharge (4.3%) in this study was

found comparable with that found by Singh D^[11] (5.1%) and Sharma et al^[14] (5.59%) but less than that of Sayed et al^[15] (2.6%). In present study, angular stomatitis prevalence (3.39%) was found lesser than Arulmani A² (9.6%) and Singh D^[11] (12.0%), but prevalence of bleeding and swollen gums (5.43%) was comparable to study of Arulmani A² (4.8%) also dental caries prevalence (14.93%) was comparable with S R Nigudi et al^[16] reported that 17.4 % was lesser than that of Arulmani A² (61.6%). In present study the prevalence of worm infestation was (2.71%) which was much less than that found by Shrestha A^[17] (21.05%).

Based on WHO- BMI criteria, the prevalence of underweight in present study (74.66%) was found more than that found in the studies of Tapnikar L^[18] (34.7%) and Bandopadhyay^[19] (42.3%). However, the prevalence of overweight/ obesity (2.26%) was comparable to that reported by Harish Chandra^[20] (3.9%).

CONCLUSION

School plays an important role in mending human behaviour and social skills so, inculcating better hygiene practices and early interventions in this population will help in building a better tomorrow as well as it will give us the opportunity to identify various emerging epidemics of this age group.

CONFLICT OF INTEREST: none.

ETHICAL CONSIDERATION: Ethical approval obtained from institutional ethics committee.

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