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Assessment of the hygiene and sanitation practices of students of class VI to IX in urban government inter college at Allahabad district, India

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ABSTRACT

Background: Hygiene and sanitation practices directly affect health status, and students can be easily educated for correct practices, which can be a cheap and effective measure for disease prevention, also it will reduce absenteeism due to illness in schools. This research paper was designed to assess the factors influencing hygiene and sanitation practices among school children.

Methods: It is a cross-sectional descriptive study, sample size was 400. Data was collected between August 2017 and December 2017 by using structured questionnaire on general hygiene and sanitation practices.

Results: It was found that only 61.5% of students wash their hand before meals, merely 16.75% of them were practicing proper dental hygiene, 41.25% of them clean genitals properly, whereas 52.25% students daily consumes food from vendors. Significant difference in sanitation and hygiene practices was found regarding education of father, education of mother and socioeconomic status.

Conclusions: Hygiene and sanitation practices among students are not satisfactory and there is scope for improvement.

Keywords: School students, Hygiene practices, Factors affecting hygiene, Sanitation practices

INTRODUCTION

The fundamentals of conscientiousness for the continuance of personal hygiene and sanitation can be easily incorporated in childhood, which is essential for a healthy childhood and adulthood which overall leads to form a healthy society. Youngster might be exposed to a variety of health themes in school: nutrition, disease prevention, physical growth and development, mental health, drug and alcohol abuse prevention and safety. The schools can provide basic information about implementing healthy decisions, as the beginning of 2018 according to estimates 29.7% population in India is under 15. 1.2

Keeping hands clean through improved hand hygiene is one of the most important steps we can take to avoid sick and spreading germs to others. Many diseases are spread by not washing hands with soap and clean, running water.³ For having healthy teeth and gums it is ideal to brush teeth at least two times daily-once early in the morning and the next before going to bed at night.⁴ Also students must wear clean clothes, it is observed that untidy and dirty clothes adversely affects confidence and self-esteem of student, furthermore regular dirty clothing can lead to ectoparasitic infestations and fungal infections. Furthermore students must know the importance of washing the genitals daily with mild soap and water and foreskin of penis should never be forcibly retracted for cleaning, once it becomes

freely retractile naturally then the boy should retract it as part of routine bathing.^{5,6}

Beside proper general hygiene practices, adequate sanitation is also very important for healthy living. Some 8 lakh people in low and middle income countries die every year due to inadequate water, sanitation and hygiene, roughly constituting two-third of total diarrheal deaths and poor sanitation is believed to be the main cause in 38 percent of these deaths (WHO 2016). According to the World Health Organization (WHO) and United Nations International Children's Emergency Fund (UNICEF) Joint monitoring report, more than half of open defecation that occurs anywhere in the world occurs in rural India (JMP, 2017).8 Not only water but Food also plays very important role in health, and in developing countries street food is usually prepared and handled with little or no regard to hygiene which exposes the consumers to microbiological and chemical hazards, and there are many epidemiological studies regarding relation of street food and diseases, and because of lack of knowledge about food hygiene there is overabundance of pathogenic bacteria in street food samples. 9,10 This leads to Infection and malnutrition which form a vicious circle and retards children's physical development ultimately compromising children's attendance and performance at school. India has made progress in providing clean drinking water however; access to sanitation facilities remains inadequate.¹¹

This study was conducted for assessing the general hygiene practices in students, and also tried to find out factors affecting their hygiene practices.

METHODS

Study design: The study design was cross-sectional.

Period of study: Study was conducted between July 2017 to December 2017.

Sampling

Random selection was done for choosing 1 Government Inter College in Urban Allahabad having only male students, and 400 students from class VI to IX of the selected school were randomly chosen for this study.

Sample size determination

Sample size: The sample size was calculated using the formula, $n=Z^2_{(1-\alpha/2)}pq/d^2$ (where $Z_{(1-\alpha/2)}=1.96$ at 95% confidence; p=prevalence of proper practice, q=1-p; d=absolute allowable error. Since there was no similar study from Allahabad district we presumed maximum variability, hence p=0.5; q=0.5; d=5%. Sample size thus yielded was of 384. Rounding off to 400 subjects was taken.

Inclusion criteria: Students willing to participate in the study.

Exclusion criteria: Students not willing to participate in the study.

Scoring - Regarding practices of hygiene and sanitation among school students, a score=0 corresponded to "never practicing / incorrect practice"; a score=1, to practicing". Therefore, overall, the maximum and minimum possible scores, based on 15 indicators of personal hygiene as considered in this study, were 15 and 0, respectively. Poor score was considered to be a total score 5 and below, and other scores categorized were fair score i.e. between 6 and 10, good score having more than 10.

Tools of data collection

Permission to conduct the study was taken from the principal of concerned school. All the students were explained about how to answer a structured questionnaire, questionnaire was distributed in class and 30 minutes time was given to fill it. Teacher of concerned class cooperated in maintaining discipline.

Analysis

Data was tabulated on Microsoft Excel sheet and analyzed using the SPSS software. P values <0.05 were considered significant.

RESULTS

Table 1 shows that 50.75% of students are of age group 11 to 13 years and remaining were of 14 to 16 years age group, and considering their class majority of them (68.25%) were students of class VIII and IX. Maximum number of participants (68.25%) were member from nuclear family, and most of the fathers of the students (72.0%) were educated more than Vth standard, whereas it was found that their mother had relatively lower educational status, 64.25% of their mother had education of more than Vth standard. Most of the students (60.25%) belonged to IInd and IIIrd category of S.E classification.

Table 2 shows that many of the students do not practice proper hand hygiene, 38.50% of them don't wash their hand with soap before taking meal and 13.75% of them were not washing hand with soap after defecation, whereas 34.50% of them didn't wash their hands after handling garbage or dirty things. It was found that only 67.75% of students cut their nails in a week. Practice for proper oral hygiene was found very inadequate, most of them i.e. 83.25% didn't use to brush their teeth twice a day and were likewise also not cleaning their tongue; they did it only once a day. These students were very considerate of taking bath daily and 90% of them did this, but only 41.25% of them daily washed their genitals, merely 10% of the students got daily washed clothes to wear, and 19.25% do not change their undergarments

daily. Most of them i.e. 98.75% had sanitary latrine build in their home and remaining 1.25% used public bathrooms. Only 40.50% of student's household waste was disposed properly rest of them didn't. It was found that only 81.25% students were cautious for not dipping finger in drinking water and rest of them were reluctant,

whereas 93.75%% of them have the habit of keeping water and edibles safe from house flies, but when questioned for consuming edibles from vendors selling in unhygienic condition it was found that about half of them i.e. 52.25% gave positive response.

Table 1: Socio economic profile of study subjects.

Variables	Frequency	Percentage (%)
Age (in years)		
11-13	203	50.75
14-16	197	49.25
Class		
6-7	127	31.75
8-9	273	68.25
Family		
Nuclear	273	68.25
Combined	127	31.75
Education of father		
up to class 5	112	28.00
Class 6-12	128	32.00
Graduate and others	160	40.00
Education of mother		
up to class-5	143	35.75
Class 6-12	147	36.75
Graduate and others	110	27.50
Socioeconomic classification		
I	87	21.75
B. G. Prasad ¹² II	129	32.25
III	112	28.00
IV	44	11.00
V	28	7.00

Table 2: Number and percentage of students according having correct hygiene and sanitation practices.

Characteristics	Frequency	Percentage (%)	
Always wash hand with soap before meal	246	61.50	
Always wash hand with soap after defecation	345	86.25	
Wash hands with soap after handling garbage or dirty things	262	65.50	
Cut nails at least once a week	271	67.75	
Daily brush teeth in morning and before going to sleep	67	16.75	
Daily cleans tongue in morning and before going to sleep	60	16.25	
Bath daily	360	90.00	
Wear daily washed clothes	40	10.0	
Daily cleans genital by soap and water	165	41.25	
Changes underwear daily	323	80.75	
Sanitary latrine build in house	395	98.75	
Always disposes household waste properly	162	40.50	
Precautious for not dipping finger in drinking water	325	81.25	
Keeps water and edibles covered or protected from flies	375	93.75	
Daily consume edibles from street vendors	209	52.25	

Table 3: Distribution of hygiene and sanitation practice score.

Hygiene and sanitation practice score	Poor (≤5)	Fair (6 -10)	Good (≤11)	Chi square	P value
Age	•				
11-13	8	112	83	1.1333	0.5674
14-16	12	110	75		
Class					
6-7	8	64	55	2.1852	0.3353
8-9	12	158	103		
Family type					
Nuclear	11	160	102	4.114	0.128003
Combined	09	62	56		
Education of father up to					
Class 5	10	80	22		<0.00001
Class 6-12	8	77	43	46.7181	
Graduate and others	2	65	93		
Education of mother up to					
Class 5	17	108	18	86.311	<0.00001
Class 6-12	2	76	69		
Graduate and others	1	38	71		
Socioeconomic classification					
I	1	24	62	61.2524	<0.00001
B. G. Prasad ¹² II	9	68	52		
Ш	6	73	33		
IV	2	35	07		
V	2	22	04		

In Table 3, it is shown that highly significant difference in sanitation and hygiene practices was found regarding education of father, education of mother and socioeconomic status of the family. No significant difference was found in hygiene and sanitation practices regarding age of student, class and whether he belongs to nuclear or combined family.

DISCUSSION

Similar to this study Llesanmi found that in senior secondary school students majority of the respondents (65.9%) gave positive responses for hand washing and a lesser (46.4%) of the respondents cut their nails weekly and almost (99.6%) of them were taking regular bath. Tamilarasi et al also reported that 31.8% students washed hands with soap before eating and 40.2% after handling garbage, whereas Sarkar found that a high percentage i.e. 94.23% of primary school children washed their hands after visiting toilet and 84.62% washed their hands before eating and 76.92% trimmed their nails but only 42.31% took daily bath. In a similar study done by Ali et al revealed that 85.17% of secondary school students were accustomed to taking their bath regularly.

Regarding dental hygiene this study is comparable to the study conducted in Chennai by Kumar, he reported that only 14.6% college students were brushing twice daily.¹⁷ Likewise to present study, Bashiru and Anthony found that in University students only 8% brush their teeth

twice daily.¹⁸ On the contrary Llesanmi found study most of senior secondary school students (98.2%) were brushing teeth 1-2 times a day and also in an another study done by Talinova, 90% of the grammar school students replied they cleaned their teeth twice a day. 13,19 Satish revealed that only 30.43% children brushed twice and almost all of them cleaned their tongue at least once a day. 20 Survey done by Blaggana et al revealed that only 40% senior secondary school children in Chandigarh brushed twice daily and about 17% reported use of dental floss and 20% used either mouthwash or tongue cleaner as adjuncts.²¹ Likewise to present study Thakre et al in Nagpur found satisfactory cleaning of the external genitalia was practiced by only 33.85% of the adolescents, also very poor results were found by Steele et al in Nairobi and they found that just 17.1% of men ever washed genital aside bathing. 22,23 Contradictory to present study Seenivasan et al found that 70.40% of students used to wear daily washed clothes, wheras Sevil et al conducted a study in Sakayra state student dormitrary and unlike present study they found that just 47.2% students used to change underwear daily. 24,25 For assessing use of sanitary latrine Anuradha et al conducted a study in rural areas of Tamil Nadu and found that prevalence of usage of household sanitary latrine and community latrines was 62.5% and 4.3% respectively, on the contrary study done in Maharashtra by Bhardwaj et al showed that 67% of respondents practiced open air defecation.^{26,27} Ramatta et al found that 61.0% of the households disposed of their waste at community bins or had waste picked up at their homes by private

contractors, whereas on converse Kumar et al found that More than 90% of waste in India is believed to be dumped in an unsatisfactory manner.^{28,29} Unlike results were found in a study conducted by Isabel et al in rural Maharashtra which revealed that most of the people using a cup (98%) also reported that their hands got wet during drinking water removal, but only 34-55% of them washed their hands before removal, likewise Verma et al also found that in Urban slum of Rohtak Nearly two-third (64%) of family members drink water with hand, which indicates that there is a potential for drinking water recontamination. 30,31 Regarding consumption of street foods Similar results were revealed by Mishra in Varanasi and he found that 61% of the students in the age group of 14-21, consume foods from the street vendors in the day at least once, also in Cotonou Van and Ottens found that 46% of the meals consumed by children was reported to be from street foods. 32,33 Zafar et al conducted study in southern Punjab, Pakistan and reported that 77.7% of respondents knew that houseflies are carrier of diseases.34

CONCLUSION

It can be concluded from the study that practice of personal hygiene among students is not satisfactory and there is vast scope of improvement. Therefore, there is an urgent need for enhancement of knowledge of school children's, where teachers and parents can play a vital role. School based health education program can be a useful effort for this and framing health education program directed to the parents with a special emphasis on their role to improve the health habits of their children may hold promise.

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Institutional Ethics Committee

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