Knowledge and Practice of Personal Hygiene Among the High School Students in A Rural Area of Mymensingh, Bangladesh

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Abstract

This cross-sectional descriptive study was conducted during November 2019 to assess knowledge and practice of personal hygiene among the high school students in a rural area of Mymensingh. Proper knowledge and practice of personal hygiene plays critical role in avoiding communicable diseases and benefit the high school students to enjoy healthy life with excellent academic career. Respondents were 244 high school students of different schools in Churkhai, Bhavokhali, Mymensingh who were selected purposively. Age ranged from 10 years to 17 years, mean age 13.32 years with SD ± 1.505 years; boys predominant (boy: girl ratio 146.5: 100). Data were collected on a predesigned questionnaire by direct interviewing the students. Knowledge and practice of personal hygiene were measured using scoring based on correct answers. Data analysis was done by SPSS version 20.0. Most of them (217) 88.93% were apparently healthy. Based on presenting symptoms and signs the diagnosed illnesses were ARI (7) 2.87%, diarrhea (5) 2.05%, head lice (5) 2.05%, scabies (4) 1.64%, injury (3) 1.23%, dental caries (2) 0.82% and peptic ulcer disease (1) 0.41%. Important personal hygiene practices inquired were frequency of regular bathing with use of soap or shampoo, combing hair, brushing teeth, hand washing, trimming nails, wearing shoes, clean clothes, avoidance of smoking and appropriate allocation of time for study, outdoor, indoor activities, rest and sleep. Based on aggregate items 80.74% had excellent knowledge and practice on personal hygiene and 19.26% had good knowledge and practice. Knowledge and practice were concordant in all elements inquired except smoking. Knowledge about harm of smoking was 100.00% though avoidance of smoking was 97.95%. Knowledge and practice scores were influenced by educational grade (class VIII at peak), literate parents, better socioeconomic condition and absence of illness. The results are better than the findings of studies conducted in our country and neighboring countries.

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Introduction

Knowledge, attitude and practice are types of learning. Hygiene is defined as “the science of health and embraces all factors which contribute to healthful living.” Hygiene has two aspects – personal and environmental. The aim of personal hygiene is to promote standards of personal cleanliness within the setting of the condition where people live. Personal hygiene includes bathing, clothing, washing hands after toilet; care of nails, feet and teeth, spitting, coughing, sneezing, personal appearance and inculcation of clean habits in the young. Training in personal hygiene should begin at a very early age and must be carried through school age.[1] The relationship between health, education and development is very important, as a healthy child is the major input for human resources development. Health and education are interrelated means of development. Common health problems of school children are malnutrition, communicable diseases like chickenpox diarrhea, ARI, tuberculosis, helminthic diseases, skin diseases, dental, eye and throat problems.[2] Learning is a process that helps organisms adapt to changing environment.[3]

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Knowledge is the collection, processing and storage of information or experience in the brain which can be retrieved and applied when necessary. Application of knowledge is practice.[4] In Africa and South Asia lion share of death (62% and 31% respectively) are due to infectious diseases. School children with better knowledge and practices of personal hygiene have fewer sick days and absenteeism in school and achieve higher grades.[5,6] The increased burden of communicable diseases among school children due to poor personal hygiene practices and inadequate sanitary conditions remain a concern on the public health agenda in developing countries.[7] Studies have revealed a strong and consistent causal link between gastrointestinal infection, respiratory infection, helminthiasis, skin infections, eye infections and spread of new pathogens as in epidemics. Thus personal hygiene has protective role.[8-10] School children are particularly vulnerable to neglect of basic personal hygiene due to lack of knowledge and practice.[11] Poor knowledge, practice of and attitudes of personal hygiene such as hand washing play major roles in the high incidence of communicable diseases and therefore has negative consequences for a child's long term overall development.[12] Improved awareness and hand hygiene practices have reduced gastrointestinal and respiratory infections by up to 50% which are the two leading causes of childhood morbidity and mortality around the world.[13,14] School is the place where health education regarding important aspects of hygiene, environment and sanitation, as well as customs is being imparted.[15] Health is a key factor in school entry, as well as continued participation and attainment in school.[16] As school children have been consistently implicated in the spread of communicable diseases and the school has been recognized as a vital setting for health promotion,[17] the purpose of the study was to make acquainted about knowledge and practice of personal hygiene which include frequency of taking bath daily, using soap/shampoo during bath, combing hair, brushing teeth, hand washing, trimming nails, wearing shoes, foot wear, clean clothes, avoidance of smoking and appropriate allocation of time for study, outdoor, indoor activities, rest and sleep.

Methods

This was a cross-sectional descriptive type of observational study conducted during November 2019 to assess knowledge and practice of personal hygiene among the high school students in a rural area of Mymensingh. The study was carried out on 244 high school students of different schools in Churkhai, Bhavokhali, Mymensingh who were selected purposively. Permission of school authority and informed consent of respondents were taken before data collection. Data were collected on a predesigned questionnaire by direct interviewing students. Knowledge and practice of personal hygiene were measured using 19 questions: correct answer getting 1 for each item and wrong answer 0. We assessed practice by answer provided by the student and also by observation regarding cleanliness. Score below 60 percent was considered as bad, from 60 to 79 as good, 80 and above as excellent. Data analysis was done by SPSS version 20.0.

Results

A survey was done on knowledge and practice of personal hygiene among the high school students of different schools in Churkhi, Bhavokhali, Mymensingh. The number of respondents was 244. They were students of class VI to class IX,

age ranging from 10 yrs to 17 yrs, mean age 13.32 yrs ± SD 1.505 yrs; age group 13 to 15 yrs predominant (61.89%); belonging to both sexes, boys being predominant (boy: girl ratio 146.50: 100.00). Majority of parents were literate: father literate 58.61%, mother literate 56.56%. Most of the respondents belonged to middle class family: 183 (75.00%).

Majority of students are in age group 13 to 15 years, boys predominant, come from literate parents and middle class family (Table I). Most of them (217) 88.93% were apparently healthy. Based on presenting symptoms and signs diagnosed illnesses were ARI (7) 2.87%, diarrhea (5) 2.05%, head lice (5) 2.05%, scabies (4) 1.64%, injury (3) 1.23%, dental caries (2) 0.82% and peptic ulcer disease (1) 0.41% (Table II).

Knowledge and practice inquired were importance of taking bath daily, taking bath with safe water, using soap/shampoo during bath, combing hair twice daily, brushing teeth twice daily, brushing teeth with toothbrush, toothpaste, washing hand before meal, washing hand after defecation, washing hand with soap and water, trimming nails once a week, wearing shoes when going to school, wearing foot wear when playing, wearing clean clothes when going to school knowledge of hazard of smoking (practice of avoidance of smoking), appropriate allocation of time for study (7 to 9 hours), outdoor (1 to 3 hours), indoor activities (1 to 3 hours), rest and sleep (7 to 9 hours).

Knowledge and practice were concordant in all elements inquired except smoking. Knowledge about harm of smoking was 100.00% though avoidance of smoking was 97.95 percent. Score below 60% were considered as bad, from 60 to 79% as good, 80% and above as excellent.

Table I: Distribution of socio-demographic variables of high school students (n = 244)

Status	Frequency	Percentage (%)
Age group in yrs		
10 to 12	77	31.56
13 to 15	151	61.89
16 yrs and above	16	6.56
Total	244	100.00
Sex		
Boys	145	59.43
Girls	99	40.57
Total	244	100.00
Class		
VI	61	25.00
VII	67	27.46
VIII	25	10.25
IX	91	37.30
Total	244	100.00
Literacy of father		
Illiterate	101	41.39
Literate	143	58.61
Total	244	100.00
Literacy of mother		
Illiterate	106	43.44
Literate	138	56.56
Total	244	100.00
Socioeconomic condition		
Poor	58	23.77
Middle	183	75.00
Rich	3	1.23
Total	244	100.00

Table II: Distribution of types of illnesses observed among high school students (n = 244)

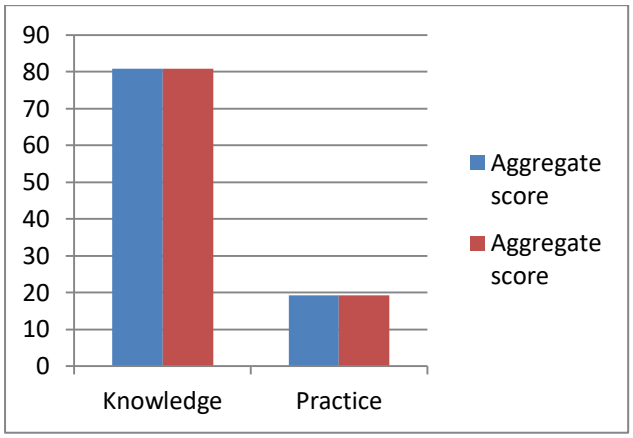
Types of illnesses	Frequency	Percentage (%)
ARI	7	2.87
Diarrhea	5	2.05
Head lice	5	2.05
Scabies	4	1.64
Dental caries	2	0.82
Injury	3	1.23
Peptic ulcer disease	1	0.41
No illness	217	88.93
Total	244	100.00

Table III: Assessment of individual items of knowledge and practice about personal hygiene of high school students (n = 244)

Status	Knowledge		Practice	
	Frequency	Percentage (%)	Frequency	Percentage (%)
Taking bath daily	242	99.18	242	99.18
Taking bath with safe water	231	94.67	231	94.67
Using soap or shampoo during bathing	211	86.48	211	86.48
Combing hair twice daily	223	91.39	223	91.39
Brushing teeth twice daily	205	84.02	205	84.02
Brushing teeth with toothbrush	242	99.18	242	99.18
Brushing teeth with toothpaste	242	99.18	242	99.18
Washing hand before meal	244	100.00	244	100.00
Washing hand after defecation	243	99.59	243	99.59
Washing hand with soap and water	233	95.49	233	95.49
Trimming nails once a week	237	97.13	237	97.13
Wearing shoes when going to school	223	91.39	223	91.39
Wearing foot wear when playing	196	80.33	196	80.33
Wearing clean clothes when going to school	243	99.59	243	99.59
Avoidance of smoking	244	100.00	239	97.95
Study hour allocation (7 to 9 hours)	201	82.38	201	82.38
Allocation of time for outdoor activities (1 to 3 hours)	201	82.38	201	82.38
Allocation of time for indoor activities (1 to 3 hours)	201	82.38	201	82.38
Allocation of time for rest and sleep (7 to 9 hours)	201	82.38	201	82.38

*Based on individual items 100% respondents had excellent (80% and more score) knowledge and practice (Table III).

Figure 1: Assessment of aggregate items of knowledge and practice of personal hygiene of school students expressed in percentage (n = 244)



*Based on aggregate items most of them (197) 80.74 percent had excellent knowledge and practice followed by (47) 19.26 percent had good knowledge and practice (Figure 1).

Table IV: Factors influencing knowledge score

Factors	Status		Total (Percentage %)
	Excellent (Percentage %)	Good (Percentage %)	
Sample population	197 (80.74)	47 (19.26)	244 (100.00)
Age			
10 to 12 years	64 (83.12)	13 (16.88)	77 (100.00)
13 to 15 years	119 (78.81)	32 (21.19)	151 (100.00)
16 yrs and above	14 (87.50)	2 (12.50)	16 (100.00)
Cross table shows better score among 16 yrs and above. Pearson Chi square value 1.112, p value 0.573. Statistically insignificant.			
Class			
VI	52 (85.25)	9 (14.75)	61 (100.00)
VII	44 (65.67)	23 (34.33)	67 (100.00)
VIII	23 (92.00)	2 (8.00)	25 (100.00)
IX	78 (85.71)	13 (14.29)	91 (100.00)
Cross table shows better score among class VIII students. Pearson Chi square value 14.064, p value 0.003. Statistically significant.			
Sex			
Male	119 (82.07)	26 (17.93)	145 (100.00)
Female	78 (78.79)	21 (21.21)	99 (100.00)
Cross table shows better score among male. Pearson Chi square value 0.407, p value 0.523. Statistically insignificant.			
Literacy of father			
Illiterate	68 (67.33)	33 (32.67)	101 (100.00)
Literate	129 (90.21)	14 (9.79)	143 (100.00)
Cross table shows better score among students whose fathers were literate. Pearson Chi square value 19.930, p value 0.000. Statistically significant.			
Literacy of mother			
Illiterate	77 (72.64)	29 (27.36)	106 (100.00)
Literate	120 (86.96)	18 (13.04)	138 (100.00)
Cross table shows better score among students whose mothers were literate. Pearson Chi square value 7.899, p value 0.005. Statistically significant.			
Socioeconomic condition			
Poor	27 (46.55)	31 (53.45)	58 (100.00)
Middle class	167 (91.26)	16 (8.74)	183 (100.00)
Rich	3 (100.00)	0 (0.00)	3 (100.00)
Cross table shows better score among students of better socioeconomic condition. Pearson Chi square value 57.321, p value 0.000. Statistically significant.			
Illness			
Presence of illness	18 (66.67)	9 (33.33)	27 (100.00
Absence of illness	179 (82.49)	38 (17.51)	217 (100.00)
Cross table shows better score among students who had no illness. Pearson Chi square value 3.865, p value 0.049. Statistically significant.			

Better score of knowledge was influenced by educational grade (class VIII at peak), literate parents, better socioeconomic condition and absence of illness (Table IV). Better score of practice was influenced by same factors.

Discussion

In this study, the number of respondents was 244. They were students of class VI to class IX, age ranging from 10 yrs to 17 yrs, mean age 13.32 yrs, standard deviation 1.505 yrs; age group 13 to 15 yrs predominant (61.89 percent); belonging to both sexes, boys being predominant: boys 145 (59.43 percent), girls 99 (40.57 percent). Majority of parents were literate: father literate 58.61 percent, mother literate 56.56 percent. Most of the respondents belonged to middle class family: 183 (75 percent). In an Indian study, majority (61%) of students were in age group of 10 to 15 yrs followed by 16 to 19 yrs (39%) with slight male preponderance i.e. 56.9% versus 43.1%. Majority

of parents were literate: father literate 58.61 percent, mother literate 56.56 percent. Most of the respondents belonged to middle class family: 183 (75 percent). In an Indian study, majority (61%) of students were in age group of 10 to 15 yrs followed by 16 to 19 yrs (39%) with slight male preponderance i.e. 56.9% versus 43.1%. Majority belongs to nuclear family and lower socioeconomic condition.[18] In a Nepali study, age ranged from 13 yrs to 18 yrs (mean 15.38 ± 0.863). Boys and girls were almost equal (50.4% boys and 49.6% girls.[19]

In this study, most of the students (217) 88.93 percent were healthy. The illnesses were ARI (7) 2.87 percent, diarrhea (5) 2.05 percent, head lice (5) 2.05 percent, scabies (4) 1.64 percent, injury (3) 1.23 percent, dental caries (2) 0.82 percent and peptic ulcer disease (1) 0.41 percent which is better than several studies conducted in Bangladesh, India, Nepal and several other developing countries. In India, health problems of school children vary from one place to another, however, predominant categories common are malnutrition, infectious diseases, diseases of skin, eye and ear and dental caries.[1] In Bangladesh, health problems are similar.[2] In an Indian study over 70% of the children were suffering from one or more morbidities, the most common morbidity in both the sexes being pallor, followed by worm infestation.[17]

In this study important personal hygiene practices inquired were frequency of taking bath daily, using soap/shampoo during bath, combing hair, brushing teeth, hand washing, trimming nails, wearing shoes, footwear, clean clothes, avoidance of smoking and appropriate allocation of time for study (7 to 9 hours), outdoor (1 to 3 hours), indoor activities (1 to 3 hours), rest and sleep (7 to 9 hours). Knowledge and practice of personal hygiene were measured using 19 questions: correct answer getting 1 for each item and wrong answer 0. We assessed practice by answer provided by the student and also by observation regarding cleanliness. Most of them (197) 80.74 percent had excellent knowledge and practice on personal hygiene followed by (47) 19.26 percent had good knowledge and practice. Knowledge and practice were concordant in all elements inquired except smoking. Knowledge about harm of smoking was 100 percent though avoidance of smoking was 97.95 percent. Excellent knowledge and practices were influenced by increasing age, class (class VIII at peak), male sex, literate parents, better socioeconomic condition and absence of illness. The results are better than the findings of studies conducted in our country and neighboring countries. In a Bangladeshi study, there was a large (2.6 fold) reduction in diarrhoeal episodes in the intervention area during the observation period. Rates of bacterial pathogens were also lower in the intervention area.[10] In an Ethiopian study, approximately 52 percent of students were classified as having adequate knowledge of proper hygiene. Practice of hand washing before meal was 99 percent and after defecation was 76.7 percent. Students with adequate knowledge of proper hygiene were more likely to have clean clothes and to have a lower risk of parasitic infection.[11] In three Indian studies and one Nepali study, females had better knowledge on personal hygiene.[12,17-19] In an Indian study literacy of mother had significant link with personal hygiene practice of school students.[12] In an Indian study those who had higher personal hygiene scores were normally nourished and had no morbidity in the last 15 days.[17] In an Indian study, majority of the respondents (88.5 percent) had good knowledge on personal hygiene; females had

better knowledge. However, practice was moderate to poor.[18] In a Nepali study, majority of the respondents (88.5 percent) had good knowledge on personal hygiene; females had better knowledge. However, practice was moderate to poor.[19]

Conclusion

Personal hygiene are the behaviors practiced by a person in daily life starting from morning to sleep time to protect our health. Most important time to inculcation of personal hygiene is the school age period. This study was conducted on 244 school children to assess the status of knowledge and practice of their hygiene. Knowledge and practice inquired were importance of taking bath daily, taking bath with safe water, using soap/shampoo during bath, combing hair twice daily, brushing teeth twice daily, brushing teeth with toothbrush, toothpaste, washing hand before meal, washing hand after defecation, washing hand with soap and water, trimming nails once a week, wearing shoes when going to school, wearing foot wear when playing, wearing clean clothes when going to school knowledge of hazard of smoking (practice of avoidance of smoking), appropriate allocation of time for study (7 to 9 hours), outdoor (1 to 3 hours), indoor (1 to 3 hours) activities, rest and sleep (7 to 9 hours). Most of them (197) 80.74 percent had excellent knowledge and practice on personal hygiene followed by (47) 19.26 percent had good knowledge and practice which was better than studies conducted in several Asian and African countries. Most of the students (88.93 percent) were healthy. Further improvement needs improvement of knowledge and practice of personal hygiene among high school students.

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