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Research Article

Quantification of Perception Status of Hand Washing Practice Among School Children In A Rural Area of West Bengal

Dhiraj Biswas[1], Sanjaykr Sahoo[2], Aparajita Dasgupta[3], PS Preeti[4], Amitavakumar[5], Sudipta Das[6]
[1, 2,4,5,6] MD.Community Medicine, All India Institute of Hygiene and Public Health, Kolkata.
[3]Prof. & HOD (Dept. of community medicine, All India Institute of Hygiene and Public Health, Kolkata.

***Corresponding author**
Dr Dhiraj Biswas,
Email: drdhirajbiswas@gmail.com

Abstract: Hand washing is the single most preventive measure for reducing the spread of contagious diseases. Hand hygiene is a cheap, simple, and an effective method prevention and control of most of the communicable disease. To know the status of knowledge and practice of hand washing of students in a rural school. It was an observational cross-section study among 190 secondary school students from class V to VII in a village of Singur Block,West Bengal. The male students had better knowledge regarding hand washing than the female students while their practice was worse than the female counterparts. Students of higher age and higher class had better knowledge and it was significant in both bivariate [OR(CI)3.167 (1.53-6.56), OR(CI)2.270 (1.156-4.457)] and multivariable [OR(CI)2.815 (1.206-6.573),OR(CI)1.319 (0.600-2.898)] analysis. Female, higher age and higher class were also important determinants of good hand washing practice. Knowledge regarding hand washing was upto the mark while practice was poor. Therefore all efforts must made to improve the hand washing practice among the school children, This will in the long play a very important role in prevention and control of many infectious diseases.
Keywords: Hand washing, primary school student, hand washing training

INTRODUCTION:

Hand washing is the single most preventive measure for reducing the spread of contagious diseases. Inadequate sanitary conditions and poor hygiene practices play major roles in the increased burden of communicable disease within the developing countries [1].

Beginning in the early nineteenth century the repeated attack of diseases such as cholera begins to alter people's understanding of personal hygiene. Hygiene practices are preventive measures to reduce the incidence and spreading of disease and are parts of good personal grooming [2**].** Hygiene as a system included not only personal hygiene related to food, clothing and exercise but also sciences such as engineering, bacteriology, public sanitation and waterworks [3].

In food borne illness investigations, poor hand washing has been found to be the second highest contributing factor, second only to food temperature control. While a fundamental personal hygiene practice, hand washing is often not done when necessary or is ineffectively done. Hand washing is a learned behavior. To be effective, proper hand washing must be learned, preferably as a child so that it becomes a routine habit throughout life to the extent that he can disseminate the knowledge to the peer groups and when he becomes adult he spreads the message to the community [4]. Children with proper hand washing practices are less likely to report gastrointestinal and respiratory symptoms [5].

Schools should provide for hygiene education to kindergarten and early grade school children to supplement the training provided by parents and guardians, to ensure that all children learn at an appropriate age how to protect themselves and others from preventable exposure to illness and other hygienic hazards.

Hand washing with soap has been reported to reduce diarrhea morbidity by 44% and respiratory infection by 23 %.[6] In addition to having proper resources and facilities hygiene practices are heavily influenced by pupil's knowledge and attitudes towards hygiene [7]. Hygiene in school, home, and everyday life settings plays an important part in preventing spread of infectious diseases [8].

There are lots of students in school; it is easier for infectious diseases to spread. School is a place where surveys can be conducted easily. Primary school age is the most important period for turning personal

hygiene rules into behavior. Because it is a fact that personal hygiene rules can be turned into behaviors easier in small ages [9]. From this point of view we select 5th to 7th standard student of a school of a rural block of west Bengal.

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OBJECTIVE

- To identify the student's knowledge and practice regarding hand washing.
- To find out the determinants of hand washing knowledge and practice among the study subjects.

MATERIALS AND METHODS

Study Settings

The study was conducted in Anandanagar High School in Singur block which is the rural field practice area of All India Institute of Hygiene and Public Health, Kolkata. A self-administered questionnaire containing a set of questions regarding hand-hygiene knowledge and practices was distributed to all participants. This proforma of 24 questions included multiple choice and "yes" or "no" responses.

STUDY SUBJECTS

All the students of class five to seven.

Sample size:190

Inclusion criteria

All the students of class five to seven .

Exclusion criteria

Those who did not attending the school on that day.

Scoring of data regarding knowledge and practice

There are 9 items in the knowledge domain and 6 items in the practice domain. The knowledge and practice in respect of different aspects like source of water, hand washing before eating after visiting the toilet, before and after preparing/handling food, availability of soap in house, duration of hand washing, importance of hand washing and disease transmission etc. Each of these responses was given a score of two for right answer, one for satisfactory answer and zero for wrong answer. In our study total attainable knowledge score was 18 and those scoring full score were considered as having good knowledge. On the other hand total practice score as 12 and those scoring 7 or more were considered as having good practice score.

Ethical Issues

For this study, written permission was taken from officers in charge of Singur Health Center .The study was conducted during the months of January and February 2015 after obtaining the consent from the school authority.

Statistical Analysis

Data was analyzed using appropriate statistical methods by SPSS (version 16).

RESULTS

Study shows that majority of the study subjects were males in the age group 11-12 years and studying in class 5 (Table-1).

Most of the students opined that they knew the importance of personal hygiene (92.1%) and that of hand washing(92.6%). Among the study population 88.4% students knew the reasons and importance of hand washing. Among the study population 81.6% collected water from tube-well and 82.1% student said that they had soap in their house and 92.1% said that soap was available in their school. For this most (69.5%) of the students said that their hands were remain germ free after washing with soap and water. Among the study population 73.7% said that there was a relation between personal hygiene and infectious disease. Among them 92.1% said that there is a risk of health and 91.42% said that the risk of not washing hand is the occurrence of difference diseases(Table-2).

In our study 182 (95.8%) students washed their hands before dinner. Among them 140(76.93%) use only water all the time and 42(23.07%) used water and soap. During lunch time 180(94.7%) students washed their hands and among them 132(73.34%) students used only water and 48(26.66%) students used water and soap. Only 17(8.9%) students defecated in open air field and all the students washed their hands after defecation. Among all the students 122(64.22%) used only water, 68(35.78%) used soap and water and rest used ash, mudect. In the study population 73 (38.43%) students had good knowledge about the duration and 152(80%) students used clean cloths and 29(15.3%) students did not use anything for drying their hands(Table-3).

In this study total attainable and attained knowledge score was 18, and mean ± SD was 15.78(±2.13). Minimum attainable score was 0 while minimum attained score was 9. Here those who scored 18 were considered as having good knowledge. In our study we found that the students whose age was 11 or more had three times more good knowledge regarding hand hygiene compared to less than 11 years which was found to be significant both in bivariate [OR:3.16, 95%CI(1.53-6.56)] and multivariable [OR:2.81, 95%CI:(1.206-6.573)]analysis. The male students had better knowledge regarding hand hygiene than the female students but this difference was not statistically significant in bivariate and multivariate analysis. On the other hand those who were reading in higher class had better knowledge [OR:2.27, 95%CI(1.156-4.457)] compared to lower class which was significant in bivariate analysis but in multivariate analysis it lost its significance.

Total practice score was 11, median was 8 and mean ± SD (7.74±1.69). Maximum attainable score was 11 and minimum attainable score was 0. Those who got 7 were considered as having good practicing score. Here practicing of hand washing was 1.6 time more [OR: 1.61, 95% CI: (0.81-3.21)] in the students whose age group was 11years or more and more than two times [OR:0.39, 95%CI:(0.19-0.80)] among the female students but these differences were not significant. On the other hand students reading in class seven practiced better hand washing [OR:1.12, 95%CI:(0.53-2.39)] than those studying in class four and five. But this difference was not statistically significant. In multivariable analysis relationship between hand washing practice and sex continued to be statistically significant(Table-4).

Table-1: Socio-demographic characteristics of the study population (n=190).

GENDER	n (%)
MALE	98(51.6)
FEMALE	92(48.4)
AGE	
8-10 YRS	82(43.2)
11-12 YRS	90(47.4)
13-14 YRS	18(9.5)
EDUCATION	
CLASS-V	73(38.4)
CLASS-VI	59(31.1)
CLASS-VII	58(30.5)

Table-2: Cognitive assessment of personal hygiene (n=190)

Do you know the requirements of personal hygiene?	**n(%)**
Yes	175(92.1)
No	15(7.9)
Do you know why hand washing is important?	
Yes	176(92.6)
No	14(7.4)
What is the source of water inyour house?	
Tube well	155(81.6)
Pucca-well	3(1.6)
Running tap water	24(12.6)
Ponds/river	8(4.2)
Do you make avail of soap in your home?	
Yes	156(82.1)
No	34(17.9)
Is soap available in your school?	
Yes	175(92.1)
No	15(7.9)
Why hand washingis important?	
Removes germs from hands	132(69.5)
Keeps healthy	35(18.4)
Remove Dirt from hand	23(12.1)
Is there any relationship between personal hygiene and infectious disease?	
Yes	140(73.7)
No	50(26.3)
Do you know the ill effects of poor personal hygiene?	
Yes	175(92.1)
No	15(7.9)
What is the effect on health?	
Causes different diseases in the body	160(91.42)
Not known	15(08.58)

Table-3: Psychomotor assessment of personal hygiene (n=190)

Do you wash your hands before Dinner?	n(%)
Yes No	182(95.8) 8(4.2)
What do you use during hand washing before dinner?	
Water+soap Water and others	42(23.07%)) 140(76.93)
Do you usually wash your hands before lunch?	
Yes No	180(94.7) 10(5.3)
What do you use during hand washing before lunch?	
Water + soap Water and others	48(26.66) 132(73.34)
Do you use open air field for defecation?	
Yes No	17(8.9) 173(91.1)
What do you use during hand washing after defecation?	
Water + soap Water and others	68(35.78) 122(64.22)
How long do you rub your hands during hand washing?	
<10 sec ≥10 sec	117(61.57) 73(38.43)
How do you dry your hands after hand washing?	
Air dry Wiping with clean cloth Do not dry at all	29(15.3) 152(80.0) 9(4.7)

Table 4: Bivariate and multivariable logistic regression regarding knowledge and practice of hand washing (n-190).

Co-Variates		Good knowledge			Good practice		
		n(%) 50(100)	OR (95%CI)	AOR (95%CI)	n(%) 148(100)	OR (95%CI)	AOR (95%CI)
Age Group	<11 yrs.	12(24)	1	1	60(40.5)	1	1
	≥11 yrs.	38(76)	3.16 (1.53-6.56)*	2.81 (1.206-6.573)*	88(59.5)	1.61 (0.81-3.21)	1.69 (0.70-4.10)
Sex	Female	23(46)	1	1	79(53.4)	1	1
	Male	27(54)	1.41 (0.597-2.180)	1.27 (0.652-2.499)	69(46.6)	0.39 (0.19-0.80)*	0.04 (0.20-0.85)*
Class	V & VI	28(56)	1	1	102(68.9)	1	1
	VII	22(44)	2.27 (1.156-4.457)*	1.31 (0.600-2.898)	46(31.1)	1.12 (0.53-2.39)	0.79 (0.30-2.08)

*Significant

DISCUSSION

The findings of our study revealed that the majority of students knew the requirement (92.2%), and the importance (88.4) of hand washing for prevention of disease and infection, on the other hand, finding of the study of Sheren NA et al[10] were 71% and 83% respectively. Among them 95.8% washed their hands before dinner and 94.7% before lunch which almost support the study of Hoy Set al [11] which were 99.7% and 98.8%, respectively. In our study 47.4% used water only and 35.8% used soap after defecation. On the other hand Snow M et al [12] in their study showed 45% and 17% respectively. Among the total study population 87.9% said that they get knowledge from their parents and 81.6% used tube well water and they used soap at home(82.1%) and school (92.1%).Most of them (73.7%) knew that there is a relation between health and hand washing and 84% said that improper hand washing produced disease and other illness and 69.5% student said that proper hand washing kept them free from germs. On the other hand Sheren NA et al [10]in their study revealed that 80% get knowledge from parents, 55% used tube-well water, 56% said improper hand washing caused diseases and 60% said that hand washing kept them free from diseases. This indicates that the student had got good information

about hand washing from both school and family sources. This supports the principle that health education should be included in the curriculum of primary to class 12 in school and should be continued in the community through adult education program [13].

Limitations of the study were that the observations were based on self-reported data by the students and it was single time observation and the study design did not include any controls.

CONCLUSIONS:

Majority of the students were washing their hands, they knew the requirement of personal hygiene, their knowledge about the importance of hand washing were focused on the fact that hand washing keeps them free from disease, keeps them healthy. Age was significant factor about knowledge and practice of personal hygiene. Higher the age better was the practice and knowledge. Sex had effect on their knowledge and practice about personal hygiene and infectious disease.

RECOMMENDATIONS

- Health education should be done for students in all primary schools on personal hygiene and disease prevention.
- All teachers in primary schools should be trained and convinced regarding the importance of hand washing, so that they disseminated their knowledge to students. Education for middle and high school students should be done by the science teachers.
- Emphasis should be given to child to child learning process by building up some energetic and enthusiastic students who will be act as leaders in percolating the correct knowledge and practice regarding hand washing.
- Organize relationships between the school health program and school administrations to provide personal hygiene need for these schools.
- There must be coordination between school administrations and student's family to achieve public hygiene.
- All children should have access to items (i.e. liquid soap, paper towels or preferably warm air blow dryers and toilet tissue) or alternative methods like hand sanitizer and opportunities to maintain personal hygiene in school settings.
- Posters to remind students to wash their hands in the correct method should be hanging on the wall above basin and water tap. The latter should provide continuous water supply
- Education to promote hand washing should be routinely given each year for each class and continuous monitoring by teachers and staff will ensure the awareness and practice of hand washing.

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