



Original article

Hand Hygiene: Perception and Practices of School Going Children from Rural Government Schools of Nalgonda, Andhra Pradesh

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ABSTRACT

Background: Although hand washing with soap is among the most effective and inexpensive ways to prevent diarrhoeal diseases and pneumonia, which together are responsible for the majority of child deaths globally each year, it is seldom practiced. Schools have an important role to play in teaching and encouraging hand washing from an early age. **Materials and methods:** School based cross sectional observational was conducted among school going children (6th, 7th & 8th standard) of two rural Government High school involving all 168 students. Data collected by using GSHS self administered questionnaire and assessment of knowledge was done by using grading system. **Results:** Out of 168 school children, 58.3% were boys and 41.7% girls. About 80% were washing hands regularly before eating and 87.5% after using the toilet / latrine while in school. About 73% of students were washing their hands under running water. Only 40.0% school children were using soap along with water before eating. Knowledge level observed to be high in the areas of ideal hand washing time (up to 90.0%) and use of soap (87.5%) **Conclusion:** Though the frequency of hand washing practices among students was found to be high, soap usage was found to be suboptimal. Also there is a wide gap between knowledge and hand washing practices that needs to be addressed.

KEYWORDS: Hand hygiene, Hand washing practices, Rural schools, School children

INTRODUCTION

For more than a century, hand washing especially with soap has been universally accepted and one of the most important ways of preventing these infections. It is observed that hand washing with soap alone prevents about 30–47% of child diarrhoeas and 23% of respiratory infections [1].

The first-ever Global Hand washing Day, launched in October 2008, revolved around schools and children, as children suffer disproportionately from diarrhoea and respiratory diseases and deaths. Schools have an important role to play in teaching and encouraging hand washing from an early age. Hand washing habits

learnt at school can last a lifetime. Washing hands after using the toilet and before eating, along with thorough and regular cleaning of surfaces that harbour germs from faeces, colds and flu (door handles, taps and toilet flush handles are particular hot spots for harbouring germs), are important measures for reducing sickness rates for all schools [2].

A survey among school children in India revealed that about half of the ailments found are related to unsanitary conditions and lack of personal hygiene. Such survey results show the need for a focus on children [3]. Also, it is generally recognized that childhood is the best time for children to learn hygiene behaviours. Children are future parents and what they learn is likely to be applied in the rest of their lives. They have important roles in the household, taking care of younger brothers and sisters, and depending on the culture, they may also question existing practices in the household [3].

Although hand washing with soap is among the most effective and inexpensive ways to prevent diarrhoeal diseases and pneumonia, which together are responsible for the majority of child deaths globally each year, it is seldom practiced and not always easy to promote, despite its lifesaving potential [2].

Bearing in mind that schoolchildren have been consistently implicated in the spread of communicable diseases and that the school has been recognized as a vital setting for health promotion, we carried out the study with objective to assess the hand-washing behavior among school children of rural area in Andhra Pradesh.

MATERIALS AND METHODS

A cross sectional study was conducted among school going children of two Government High schools in Cherlapally and Dandamapally villages in the field practice area of Department of Community Medicine, Kamineni Institute of Medical Sciences, Narketpally. The study subjects included were all school going children of 6th, 7th and 8th standard who were willing to participate and provide required information. The study

instrument used is 'Core expanded Questionnaire on Global School-based Student Health Survey' (GSHS) [4]. GSHS is a core expanded questionnaire on hygiene module. It includes questions related to hand hygiene of students especially in school environment. It is designed by CDC, Atlanta specially for assessing different aspects of health module.

After seeking permission from the Principal of the respective schools, a team involving the faculties of Community Medicine, interns, undergraduate and postgraduate students along with medical social workers visited the school. Those who were absent due to illness or some other reason were not included in our study. All the participants were informed about the study and GSHS self administered questionnaire was administered for collection of data. The Single best response against each question was obtained. The data thus collected was entered in MS excel sheet and analysis was carried out (chi-square, odds ratio) by using SPSS statistical software 19.0 version. In addition to GSHS, a self administered knowledge questionnaire was used to assess knowledge of students regarding hand hygiene, ideal time, effects of improper hand washing and measures of prevention of illness. Health education session was conducted in the class room after collection of the data in the areas of hand hygiene and health.

RESULTS

Out of 168 school children, 58.3% were boys and 41.7% girls. The parental illiteracy rate was higher among mothers (49.4%) than fathers (31.5%) of the children. Education status of majority of mothers of children was only up to primary level (30.9%) (Table 1). The association between parental education and knowledge of students was found significant ($p < 0.05$). Majority of the students responded that they were washing hands regularly before eating (80.4%) and after using toilet/latrine (87.5%). 1.8% of children had never washed their hands before eating and 2.4% after using toilets at school place (Table 2).

Table 1: Sociodemographic information of the students (n=168)

Grade/Standard		
	Number	Percentage
6 th	55	32.7
7 th	56	33.4
8 th	57	33.9
Sex		
Male	98	58.3
Female	70	41.7
Educational status of parents:		
Educational status	Mother * Number (%)	Father + Number (%)
Illiterate	83(49.4%)	53(31.5%)
Primary	52(30.9%)	37(22.0%)
Secondary	31(18.5%)	68(40.5%)
Higher secondary	02(1.2%)	07(4.2%)
Graduate	00	03(1.8%)

* $X^2=77.35$, $df=2$; $P<0.001$, + $X^2=21.30$, $df=2$; $P<0.001$

Table 2: Frequency of Hand washing at School (n=168)

	Number	Percentage
Before eating:		
Always	135	80.4
Sometimes	30	17.8
Never	03	1.8
After using the toilet/latrine:		
Always	147	87.5
Sometimes	17	10.1
Never	04	2.4

Almost one third i.e. 73.3% students washing their hands under running water and 12.7% were washing hands in a dish of water that is shared by other students. Only 40.0% of the school children were practicing hand washing with soap and water and 41.2% had never used soap (Table 3). Majority students (90.5%) felt that ideal hand

washing time is just before eating. Almost 88.1% also responded that ideal hand washing time is after defecation. Almost one third of the total students i.e. 76.8% and 70.8% were aware that diarrhoea/dysentery and fever respectively can be caused by improper or inadequate hand washing. Almost 87.5% knew that simple hand washing with soap and water is the best practice to avoid the related health problems (Table 4).

Table 3: Distribution of methods of hand washing practices(n=165)

	Number	Percentage
Method of hand washing:		
In a dish of water used by others	21	12.7
In a dish of water used by me only	13	7.9
Under running water	121	73.3
Other ways	10	6.1
Use of soap:		
Never used soap	68	41.2
Sometimes	31	18.8
Always	66	40.0

Table 4: Knowledge of the students regarding different aspects of hand washing(n=168)

1. Ideal time of hand washing				
	Yes	No	Odds Ratio (95% C.I.)	
Before eating	152(90.5%)	16(9.5%)	0.1(0.06-0.16)	p< 0.05
After eating	105(62.8%)	63(37.5%)		
After defecation	148(88.1%)	20(11.9%)	0.007 (0.001-0.048)	p< 0.05
2. Health effects of inadequate hand washing				
Diarrhoea/dysentery	129(76.8%)	39(23.2%)	0.04(0.02-0.09)	p< 0.05
Worm infestation	97(57.7%)	71(42.3%)	0.28(0.21-0.36)	p< 0.05

Cough	84(50.0%)	84(50.0%)	0.37(0.30-0.46)	p< 0.05
Cold	47(27.9%)	121(72.1%)	0.65(0.58-0.74)	p< 0.05
Fever	119(70.8%)	49(29.2%)	0.11(0.07-0.18)	p< 0.05
3. Ideal practice of hand washing				
Hand washing with soap and adequate water	147(87.5%)	21(12.5%)	2.75(1.75-4.31)	p< 0.05
Hand washing under running water	104(61.9%)	64(38.1%)	0.23(0.16-0.31)	p< 0.05

DISCUSSION

Schools have a central place in the health of a community. Children are often targeted for hygiene behavior as it is felt that habits developed at this age would continue into their adulthood. Inappropriate hygiene in schools can cause many diseases. If there are no school sanitation and hygiene facilities, or if they aren't maintained and used adequately, schools become places where diseases are likely transmitted since major part of the day was spent in school [5].

Socio-demographic information:

It revealed that the maternal and paternal literacy rates were 50.6% and 68.5% respectively and even among literate mothers, majority(30.9%) were studied only up to primary level. It is significantly associated with the knowledge of students regarding hand hygiene (p<0.05)

Frequency of hand washing behavior:

Varied behaviour related to hand washing was observed. 87.5% and 80.4% of the students were regularly washing their hands after using toilet/latrines and before eating respectively. Our findings are consistent with study findings by Deb S et al [5], O'Reilly et al [6] and Lopez QC [7]. However Ray SK et al [8] in a study done in urban schools of Bangalore and Kolkata observed that 97.6% were practicing hand washing after defecation and 86% before eating their lunch at school which was higher compared to our study that can be attributed to study set up being urban schools and certain socio-demographic factors like urban-rural differences, knowledge level and

literacy status of parents has direct impact on hand washing behaviour.

Hand washing methods:

Majority (73.3%) students practice hand washing under running water. Forty percent of school children practice regular hand washing with soap and water and 41.2% never used soap with hand washing. A study by Pete M [9] among high school student shows same results as of our study findings. Deb S et al [5] observed very less hand washing rate with soap and water in his study (16.9%) though 82.3% were washing hands under running water at school. Ray SK et al [8] also observed very less hand washing rate especially with soap and water in his study (21.3%) and 47.3% never used soap for hand washing. Our study findings regarding hand washing under running water by school children are comparable with findings of Pete M [9], Deb S et al [5] and Ray SK et al [8].

However Vivas A et al [10] carried out a study in rural school children of Ethiopia where almost 99.0% students reported hand washing before meals. It is because of provision of separate and adequate space, availability of more number of taps along with adequate water for hand washing. Vivas A et al [10] also reported that only 36.2% of school children using soap for hand washing which is almost comparable with our study findings (40%).

Though our study findings are similar as far as hand washing with soap on regular basis is not promising, but still it is higher as compared to the

above mentioned Indian studies [5,8,9]. However, globally, the rates at which hands are washed with soap range from only 0-34% of the time [2]. A study conducted by the Global Public-Private Partnership for Hand Washing (PPPHW) which included several sub-Saharan African countries (i.e. Kenya, Senegal, Tanzania, and Uganda) reported that 17% of participants washed their hands with soap after using the toilet, while 45% used only water[4].

Knowledge regarding different aspects of hand hygiene:

Majority students (90.5%) felt that ideal hand washing time is just before eating. Almost 88.1% also responded that ideal hand washing time is after defecation. But it was observed that 80.4% and 87.5% were regularly washing their hands before eating and after defecation ($p < 0.05$). Majority of the students i.e. 76.8% and 70.8% were aware that diarrhoea/dysentery and fever respectively can be caused by improper or inadequate hand washing ($p < 0.05$). Awareness about other health ailments due to improper hand washing was observed to be inadequate. About 88% of students are aware that simple hand washing with soap and water is the best practice to avoid the related health problems, but less than half subjects i.e. only 40.0% were using soap for hand washing.

Ideal hand washing time is at least before eating and immediately after toilet and latrine use. It is the duty of school authorities to implement and ensure the correct behaviour related to hand hygiene while in school.

CONCLUSION

In our study it is observed that there is a wide gap between knowledge of the students and their hand washing practices. Though knowledge level is high (up to 90.0%) but actual practicing with soap is only 40.0% and same number of students (41.2%) had never used soap for hand washing in their life. Biological barriers to hand washing with soap do exist in our study that include lack of time, busy hours of schooling, unavailability of soap on sustainable basis and also laziness by students. So we conclude that there is a wide scope for improvement of knowledge as well as

practices of hand washing. Our study findings underscore the need for more hand washing and hygiene education in schools.

Simple primordial and primary preventive measures like Health Education of students, teachers and also parents are recommended. Though it is one of the components of school health programme, it needs to be strengthened in order to achieve the expected result in terms of improved hand hygiene skills on long term sustainable basis.

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