



## Research Article

# Study to Assess the Effectiveness of Hand Hygiene Practice among School Going Students

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### ABSTRACT:

**Introduction :** Hand hygiene is a milestone of infectious disease control, and promotion of improved hand hygiene has been recognized as an important public health measure. It has long been recognized to be a convenient, effective, and also cost-effective means of preventing communicable diseases. According to the definition of World Health Organization, hand hygiene is a general term referring to any action of hand cleansing, i.e. it is the act of cleaning one's hands with or without the use of water or another liquid, or with the use of soap, for the purpose of removing soil, dirt, and/or microorganisms. The aim was to assess the effectiveness of hand hygiene technique demonstration on hand hygiene practices of Primary School going children. **Methodology :** Data was collected from the Govt. Middle School Chak Bhagta, J&K, India. The study design used was one group Pre-test, post-test design. 100 primary school going children aged 7 yrs-8 yrs were selected by simple random sampling technique. On the 1st day, Pre demonstration was conducted by using modified observational checklist and demonstration of hand hygiene technique was administered. After 7 days post-demonstration test was conducted. Descriptive and inferential statistics were used for data analysis. **Result:** The result showed that the mean Pre-demonstration value was 4.181 and mean post-demonstration value was 7.023. The paired 't' test value was 19.634, ( $p < 0.0001$ ) showing a significant gain in the improvement of hand hygiene practice of primary school going children. Chi-square test shows that there was a significant association of Pre- demonstration practice score of primary school going children with mothers' education ( $\chi^2 = 13.216$ ,  $p < 0.05$ ), father's education ( $\chi^2 = 17.014$ ,  $p < 0.05$ ). **Discussion:** The study was concluded that the demonstration of hand hygiene technique regarding hand hygiene was effective in improving the hand hygiene practices of school going children and steps of hand hygiene technique was easy to understand.

**KEYWORDS:** Hand Hygiene Practices, Primary School Children, Infectious disease, Prevention of infectious disease.

### INTRODUCTION:

Young children are more susceptible to infectious diseases such as respiratory tract infections, hand, foot and mouth disease (HFMD), gastroenteritis, and many more due to the naivety of their immune system and comprehension of personal hygiene. These diseases often are transmitted via droplets, aerosol, and faeco-oral route. Contact with nasal discharge, saliva, faeces, urine, and blisters require vigilant transmission precaution. Worldwide about 400 million children are infected with worms due to poor hand washing practices. These worms cause: malnutrition, abdominal malfunction and impaired learning capacity

For maintaining health Hand Washing with Soap (HWWS) is effective, investing in HWWS is easy and minimal. For school children the practice is significant, who might suffer from more severe hygiene related diseases as compared to adults. In the home and everyday life setting hand hygiene is central to prevent the spread of infectious diseases. School going children are spending more time in school and they are close contact with each other, sharing school materials everything from chairs to the desk, to crayons, to germs, and touching their faces. On surfaces, up to eight hours germs from sneeze and cough droplets can survive. So hand washing is an effective way to prevent the spread of common school illnesses like cold, pinkeye and flu and much more. Teaching children hand washing is important to keep them clean and healthy. It is easy to teach step by step guiding to the child how to wash their hand properly. Especially teach the child to hand wash often, before eating, after blowing nose and after the use of the bathroom. As a matter of habit, it is very good idea to make sure washing hand becomes something automatically. There is improper fencing of government schools in developing countries allowing the domestic animals to enter inside the school premises that makes children vulnerable to many zoonotic infections. Children playing at such ground with animal dung contaminate their hands and eventually spread contamination to their friends and the classroom environment. The school environment thus gets converted into a reservoir for many kinds of health hazards due to poor hand hygiene. Knowledge is contagious once infected transmits to others. Health education program is very much fruitful for children's upcoming future. School children communicate hand washing knowledge to their colleagues, parents and siblings thus becoming a change agent by improving their hand washing knowledge and practice.

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**Objectives :**

1. To assess the Pre- demonstration Hand hygiene practices among the Primary school children.
2. To evaluate the Hand hygiene technique effectiveness of Primary School going Children.
3. To find the Association between the Pre-demonstration score with selected demographic variables.

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**MATERIALS AND METHODS:****Research approach:**

The research approach used for this study is quantitative approach.

**Research design:**

A pre -experimental research design was adopted for this study.

**Target population:**

The target population was School going students of GMS,Chak Bhagta J&K.

**Research setting:**

The study was conducted at GMS,Chak Bhagta ,J&K

**Sampling technique**

In this study, samples were the students of GMS ,Chak Bhagta. The sample size for this study was arbitrarily determined to be 100. The simple random sampling technique was used to select the samples..

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**CRITERIA FOR SAMPLE SELECTION:****Inclusion criteria:**

The students' population who were:

- ✓ Students were willing to participate in the study
- ✓ Students with age group was between 7 yrs-8yrs.

**Exclusion criteria:**

- ✓ Students those who were absent at the time of data collection.

**Hypothesis**

**H1:** After hand washing techniques demonstration, Primary School going children will improve their hand washing practice.

**H2:** There will be a significant association between Pre-test score with selected demographic variables.

**Variables:****Independent variable:**

Hand hygiene Practice

**Dependent variable:**

Hand hygiene Practice among students

**Tool and method of data collection:**

**Section A:** Demographic variable – Age, gender, Father's education ,Mother's education ,father's occupation , habitat.

**Section B:** Demonstration of Hand hygiene technique.

**Instructions For Children**

- Instructed to children to keep clean hand-towel with them during the hand washing to dry hands.
- Instructed to keep nails short & round .
- 5 min was given to each child for hand washing.

**Steps of Hand Hygiene Technique to be followed:-**

- 1) Wet hand with tap water.
- 2) Apply appropriate soap on hand.
- 3) Rub palm to palm 5 times.
- 4) Rub right palm over the back of the left hand up to wrist level 5 times and vice versa.
- 5) Rub palm to palm with finger interlaced.
- 6) Backs of fingers to opposing palms with fingers interlocked.

- 7) Wash thumb of each hand separately using a rotating movement.
- 8) Rub the tips of fingers against the opposite palm using a circular motion.
- 9) Rinse hand thoroughly under running water to remove all traces of soap.
- 10) Thoroughly dry hands and wrists with a hand-towel.

**Section C:** Modified observational checklist.

**Inclusion Criteria**

- ✓ Children were willing to participate in the study
- ✓ Children with age group was between 7 yrs-8 yrs.

**SCORING PROCEDURE:**

**Part II:**

The questions were of multiple choice formats. The multiple choice questions has one right answer, which was allotted a score of “one” for right answer and wrong answer was given the score of “zero”. The total attainable score in the knowledge questionnaire was 30.

The level knowledge score was classified as follows

- Good (7-10) – Above
- Average (5-6) – Between
- Poor (0-4) – Below

**PILOT STUDY:**

The pilot study was conducted during the month of September 2019 at Govt.Middle School, Panthal among 10 students to evaluate the effectiveness of planned teaching programme and to find out the feasibility of conducting the main study.

**RELIABILITY OF THE TOOL:**

Reliability was checked by using the Karl Pearson’s coefficient of correlation , Spearman Brown prophecy formula was computed and the reliability was found as 0.8 so the tool found reliable.

**Data Collection Procedure:**

To conduct the study the permission was obtained from the Principal of Govt.Middle School Chak Bhagta, J&K,India on 14/03/21. Informed consent and explanation of demonstration of hand hygiene technique were obtained from parents. Daily 25 children for 1 hour were assessed for hand hygiene practices. 5 minutes had given for each child for hand hygiene and intervention of demonstration of hand hygiene was given. After pretest, administration of demonstration of hand hygiene technique was given by step by step and after 7 days post-test was taken by using same observational checklist.

**Plan for Data Analysis:**

The data was analyzed in terms of the objectives of the study using descriptive and inferential statistics. The plan of data analysis was follows

1. Organize the data in a master data sheet
2. Frequency and percentage distribution were used to analyze the demographic data for Students.
3. Computed frequency, percentage, mean, standard deviation, and range to describe the data.
4. Chi-square test was used to determine the association between the knowledge of students with selected demographic variables.

**The Data Findings have been Presented under the Following Section**

Section A: It Shows the analysis of Socio demographic variables

Section B: it Shows the analysis of data related to practice score regarding Pre-Demonstration score and post-demonstration score under percentage distribution, mean, median, standard deviation, range, mean difference and t’ value.

Section C: It shows the analysis of data to find out the association between Pre-Demonstration score with selected Socio- Demographic variables.

**Results**

**Section A:** Distribution of children according to demographic variables. The data presented in Table 1 reveals the distribution of according to demographic variables.

Table 1. Frequency and percentage distribution of children according to demographic variables

Sr. No	Demographic Variables	N	%
<b>1.</b>	<b>Age</b>		
a)	7 yrs	58	58%
b)	8yrs	42	42%
<b>2.</b>	<b>Gender</b>		
a)	Male	55	55%
b)	Female	45	45%
c)	Others	0	0
<b>3.</b>	<b>Father education</b>		
a)	Illiterate	4	4%
b)	Primary education	24	24%
c)	Secondary education	48	48%
d)	Graduate and above	34	34%
<b>4.</b>	<b>Mother education</b>		
a)	Illiterate	6	6%
b)	Primary education	38	38%
c)	Secondary education	42	44%
d)	Graduate and above	14	14%
<b>5.</b>	<b>Father Occupation</b>		
a)	Govt. Service	32	32%
b)	Business	22	22%
c)	Farmer	17	17%
d)	Any other	29	29%
<b>6.</b>	<b>Habitat</b>		
a)	Rural	82	82%
b)	Urban	18	18%

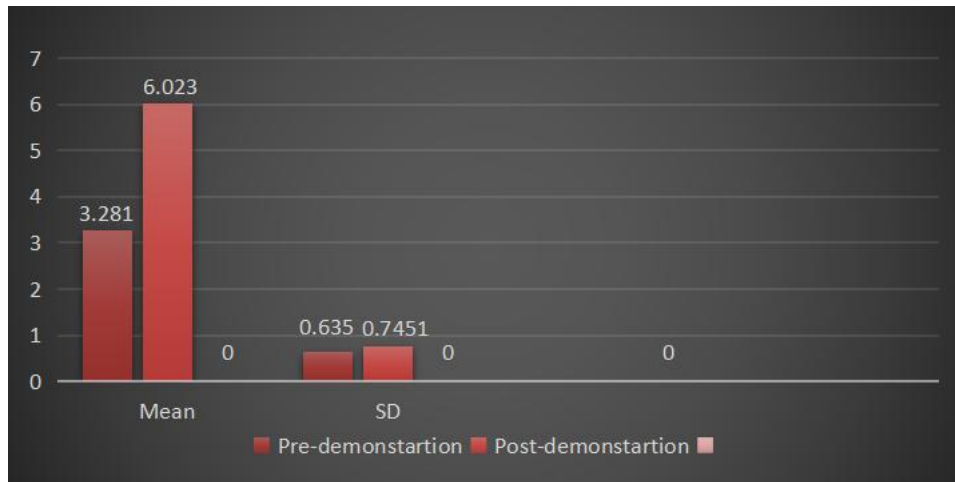
A maximum number of 58 (58%) of primary school going children, belonged to the age group of 7yrs. and 42(42%) were in 8 yrs. And 55 (55%) was males and minimum 45(45%) were females. The majority of the Fathers 48 (48%) education status belonged to secondary and minimum 4(4%) were illiterate. The majority of Mother's education 42(44%) belong to secondary education, 38(38%) had primary education, 14(14%) Graduate and above maximum 6(6%) were illiterate. The majority of father's occupation 32(32%) had govt. job, 22(22%) had the business, 17(17%) were the farmer, 29(29 %) were in any other.

**Section B:** it shows that the analysis of data related to practice score regarding Pre-demonstration score and post-demonstration score under percentage distribution, mean, median, standard deviation, range, mean difference and t' value.

Table 2: Frequency and Percentage practice score of primary school going children

Scores	N=100			Chi-square	P-value	Inference
	Good	Average	Poor			
Pre-test	6(10%)	94(90%)	0(0%)	88.151	0.0001	Significant
Post -test	100(100%)	0(0%)	0(0%)			

**Table 2** :-Reveals that in Pre test majority 94(90%) had average practice, 6(10%) had a good practice and 0(0%) none of them had poor practice. Whereas in the post-test majority 100(100%) had a good practice and none of them had average and poor practice regarding hand hygiene practices before and after the demonstration.



**Figure 1** shows that practice regarding hand hygiene practices Pre- and Post-demonstration of 100 observations Mean, standard deviation and range of practice score of primary school going children regarding hand hygiene (N=100).with the difference means of -2.540. SD of -0.0111 and the computed t' test statistic value is 19.634. Since the p-value for the test was less than 0.05. H1 was accepted. i.e., there was a significant difference between the pretest and post test practice score and mean post test practice score was higher than their mean pretest practice at 0.05 level of significance. It was shown that the demonstration of hand hygiene technique was effective in improving practice regarding hand hygiene Pre and Post.

**Section C:** It deals with the analysis of data to find out the association between Pre- Demonstration score with selected Socio- demographic variables. There was significant association between Pre-Demonstration practice score and demographic variable such as Father's education and Mother's education as  $P < 0.05$  and there was no significant association between Pre-demonstration practice score such as age, gender, father's occupation & habitat as  $P > 0.05$ .

## Result

The result showed that the mean Pre-demonstration value was 4.181 and mean post-demonstration value was 7.023. The paired t' test value was 19.634, ( $p < 0.0001$ ) showing a significant gain in the improvement of hand hygiene practice of primary school going children. Chi-square test shows that there was a significant association of Pre demonstration practice score of primary school going children with mothers' education ( $\chi^2 = 13.216$ ,  $p < 0.05$ ), father's education ( $\chi^2 = 17.014$ ,  $p < 0.05$ )

## Discussion

The study hand hygiene technique demonstration on hand hygiene practices among primary school going children. The primary aim of the study was to assess the effectiveness of hand hygiene technique demonstration on hand hygiene practices. The results showed that the demonstration of hand hygiene technique was simple, inexpensive and effective as the paired t' test value was 19.634, ( $p < 0.001$ ) showing the significant difference between the Pre-Demonstration score of primary school going children and post-demonstration score. The present study concludes that post demonstration practice score showed significant difference than the Pre demonstration practice score, which is a net benefit due to the effectiveness of demonstration of hand hygiene was effortless, affordable and effective to improve children's knowledge and practices regarding hand hygiene.

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