

A quantitative study on Hand Hygiene

Dr. Maitri Chaudhuri

Principal,
Agartala Government Nursing College,
Tripura, India.

Abstract

Approximately 52.3% of patients undergoing treatment in an intensive care unit and 24% of patients with healthcare-associated sepsis pass away each year.

to raise awareness of the significance of hand hygiene in healthcare and to unite individuals in support of better hand hygiene.

to promote steady improvements in hand hygiene in the healthcare industry. The current investigation was carried out using an observational study approach. The majority of research participants—56, or 59.6%—were female, with 38, or 40.4%, being male. The majority of participants—64, or 68.1%—had knowledge levels in the 5-8 group, followed by 21 (22.3%) in the 9–12 level and 9 (9.6%) in the 0–4 level. The median, mode, and standard deviation are 6.9, 6.7, and 2.3, respectively, whereas the mean knowledge score is 7. The bulk of research participants—56, or 59.6%—were female, with 38, or 40.4%, being male. The majority of participants—64, or 68.1%—had knowledge levels in the 5-8 group, followed by 21 (22.3%) in the 9–12 level and 9 (9.6%) in the 0–4 level. The median, mode, and standard deviation are 6.9, 6.7, and 2.3, respectively, whereas the mean knowledge score is 7. A commitment to the water supply, soap, clean towels, and alcohol-based hand soap results in hands that are safe and clean.

Introduction

According to WHO (2019), "Quality care is Clean Care: it's on your Hand." Hand hygiene (HH), or washing hands to reduce the microbial burden, is one of the primary methods for stopping the spread of respiratory diseases. HH can be carried out by applying an alcohol-based hand rub (ABHR) or washing your hands with soap. [1].

In addition to making the work of those providing care easier, hygiene and cleanliness give dignity and show respect to those who are seeking it. Proper hand hygiene also acts as an important role in Infection Prevention and Control (IPC).

Five justifications for IPC investment:

- 1) ensures the safety and quality of treatment of patients and healthcare personnel;
- 2) immediately improves critical health outcomes and saves lives;
- 3) reduces medical expenditures and out-of-pocket expenses;

- 4) contains tried-and-true tactics and tools for execution;
- 5) Scalable and responsive to local context [2].

Background of the study: Approximately 52.3% of patients treated in an intensive care unit and 24% of patients with healthcare-associated sepsis pass away each year. [2].

At least one health care-associated infection will occur in acute-care hospitals for seven out of every 100 patients in high-income nations and fifteen out of every 100 patients in low- and middle-income countries. Approximately 10% of those impacted will pass away as a result of their healthcare-associated illness. [3].

Newborns and those in critical care are especially vulnerable. Up to 70% of HAIs may be avoided with good infection prevention and control practices, such as practicing good hand hygiene. IPC therapies lower morbidity, mortality, and human suffering by preventing infections and being incredibly cost-effective. [4].

Aim and objectives of the study: To raise awareness of the significance of hand hygiene in healthcare and to unite individuals in support of better hand hygiene. to encourage consistent hand hygiene advancements in the medical field.

Healthcare workers run the risk of spreading infection-causing germs from one patient to another when they don't wash their hands properly and at the right times. Hand hygiene is a crucial health care intervention that ought to be used at key moments. Hand cleanliness improves patient safety, lowers health care-associated diseases (HAI), and lessens the spread of bacteria, particularly those resistant to medications. Hand washing must be done promptly and efficiently in order to prevent and manage infections.

Study design: The current investigation was carried out using an observational study approach. In addition to determining the general public's level of knowledge and HH Behaviour, this study aims to identify gender disparities in these areas. We examined the variations in handwashing and hand-drying practices between the sexes. The results of this cross-sectional study may significantly improve our comprehension of the information gap and public attitudes towards HH, which will guide gender-specific health promotion initiatives and campaigns aimed at boosting HH compliance.

Residents of Tripura and at least 18 years old.

Sample and Sampling: The random sampling method was used to find respondents who were

Methodology and Instrument used for this present study

An extensive review of the literature pertaining to handwashing and drying served as the

foundation for the creation of the hand-washing and drying questionnaire. There were three sections to this survey. Part 1 primarily gathers respondents' socio-economic information.

Knowledge of Hand Hygiene (12 items) that require true or false answers is the main focus of Part 2.

The tool was created to address local perceptions, such as the false beliefs about how long it takes to rub hands before rinsing and that hands should be kept submerged in water while soap is lathering. A high score indicated a significant level of Hand Hygiene knowledge. The score ranged from 0 to 12.

Majority of the respondents were female which arouse interest of the researcher to find out the correlation in practice of hand hygiene among both sex and it is depicted by Part 3 of the tool. The researcher conducted face to face interview and direct observation to ascertain the data according to the pretested questionnaire.



Source: WHO guideline (2019).

Result: Descriptive statistics adopted for the present research. The results of this study have the potential to significantly advance the researcher's understanding of the knowledge gap and public attitudes regarding Hand Hygiene, which will inform gender-specific health promotion initiatives and campaigns aimed at increasing Hand Hygiene compliance.

Part 1

Table 1: Socio- economic variables of the study participants

N=94

Sl. No.	Socio-economic variables	Socio-economic categories	Frequency	
			Values	%
1	Age	18-28	42	44.7
		29-38	35	37.2
		39-48	17	18.1
2	Sex	Male	37	39.4
		Female	57	60.6
3	Religion	Hindu	70	74.5
		Muslim	17	18.1
		Christian	6	6.4
		Others	0	0
4	Education	Illiterate	12	12.8
		Primary	18	19.1
		High School	42	44.7
		Graduate	22	23.4
5	Monthly Income	<5000	12	12.8
		5000-10,000	36	38.3
		>10,000	39	41.5
6	Place of living	Urban	62	66.0
		Rural	32	34.0

The **Table 1** revealed that, majority 42(44.7%) study participants were belongs to the age group of 18 to 28 years followed by 35(37.25%) in the 29 to 38 years and 17(18.1%) under 39 to 48 years. Majority 57(60.6%) participants were female and 37(39.4%) were male.

Majority 70(74.5 %) study participants were belonging to the Hinduism followed by 17(18.1%) Muslim and 6(6.4%) Christian community.

Majority 42(44.7%) study participants' educational level is up to High School followed by 22(23.4%) were graduate, 18(19.1%) under primary level and 12(12.8%) illiterates.

Majority 39(41.5%) study participants' monthly income is more than 10,000/- followed by 36(38.3%) under 5000/- to 10,000/- and 12(12.8%) having less than 5000/-.

Majority 62(66.0%) study participants were from urban area followed by 32(34.0%) were rural habitat.

Table 2:

Mean, Median, Mode and Standard Deviation of study participants' according to their Age group.

N=94

Sl. No.	Age group	Values	Mean Age	Median	Mode	Standard Deviation
1.	18-28	42	30.6	29.9	28.5	7.725
2.	29-38	35				
3.	39-48	17				

Table 2 shows the mean age of the study participants that is 30.6years, median 29.9, mode 28.5 and standard deviation 7.73.

Part 2

Table 3: Knowledge Score on Hand Hygiene

N=94

Knowledge item=12.

Knowledge Score=12.

Knowledge level	Values			Mean	Median	Mode	SD
	M n=38 (%)	F n=56 (%)	Total (%)	7	6.9	6.7	2.3
0-4	6(15.8%)	3(5.2%)	9(9.6%)				
5-8	24(63.2%)	40(71.4%)	64(68.1%)				
9-12	8(21.0%)	13(23.2%)	21(22.3%)				
Total	38(40.4%)	56(59.6%)	94				

Data presented in the table 3 revealed that, majority 56(59.6%) study participants were female followed by 38(40.4%) were male. Majority 64(68.1%) participants' knowledge level was under 5-8 category followed by 21(22.3%) in level 9 to 12 and 9(9.6%) is under 0 to 4 level. The mean knowledge score is 7 whereas median, mode and standard deviation are 6.9, 6.7 & 2.3.

Part 3

Table 4: Correlation between male and female participants on practice of Hand Hygiene.

N=94

Male=37, Female=57.

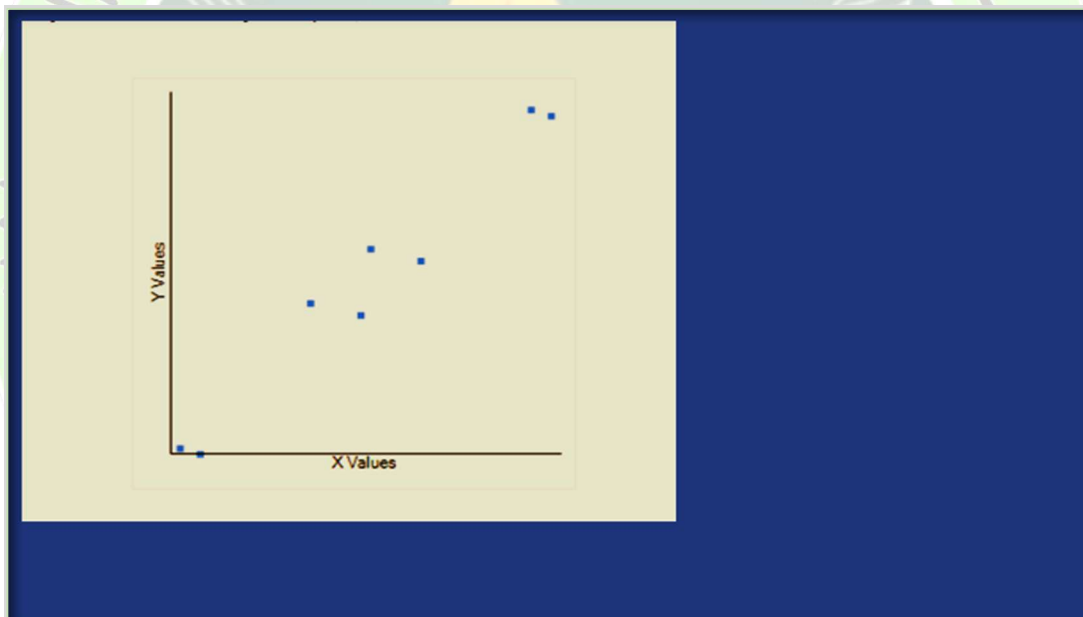
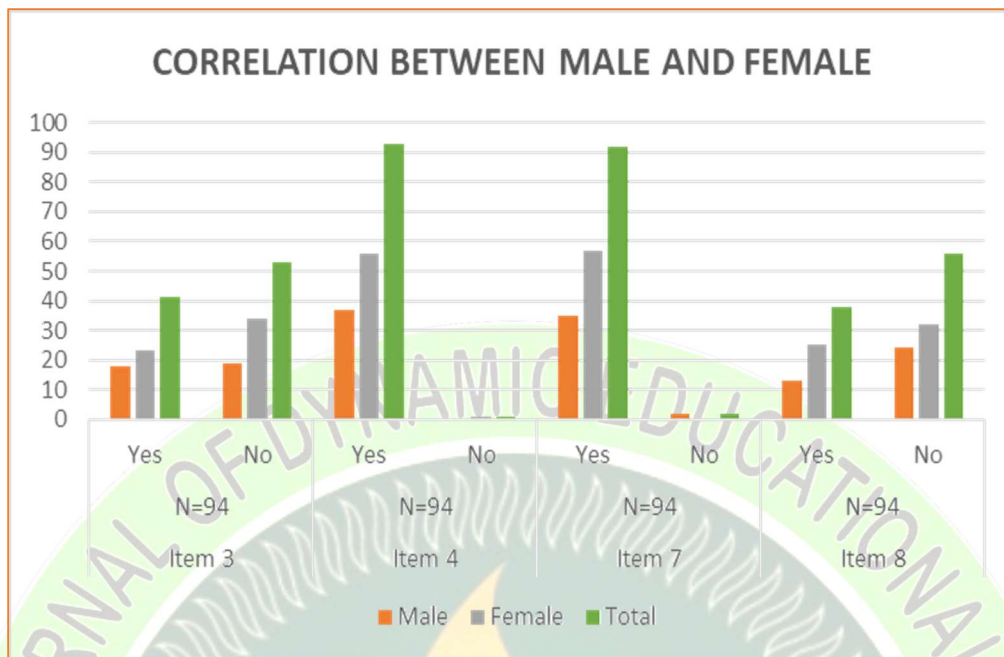
Practice item=4.

Practice of hand hygiene	Item 3 N=94		Item 4 N=94		Item 7 N=94		Item 8 N=94	
	Yes	No	Yes	No	Yes	No	Yes	No
Male	18	19	37	0	35	2	13	24
Female	23	34	56	1	57	0	25	32
Total	41	53	93	1	92	2	38	56

Pearson Correlation Coefficient

$$r = \frac{\sum_i (x_i - \bar{x})(y_i - \bar{y})}{\sqrt{\sum_i (x_i - \bar{x})^2} \sqrt{\sum_i (y_i - \bar{y})^2}}$$

The r value is 0.982. p value is < .00001. The result is significant at $p < .05$ indicates a strong positive correlation.



Discussion: Numerous studies assessed how well hand hygiene practices can prevent or manage childhood illnesses. Wolf et al.'s(2022)systematic review and meta-analysis examined and compiled data on the efficacy of interventions to enhance handwashing, sanitation, and drinking water with soap on children's risk of diarrheal illness in low- and middle-income environments. According to the study, hand hygiene-promoting interventions effectively reduced the risk of diarrheal illness in children under five by 30%.

Muramatsu-Noguchi et al. (2022) examined the relationship between socioeconomic status and the availability of soap at Laotian handwashing stations in a cross-sectional study. The presence of soap and household wealth and educational attainment were found to be significantly correlated in a linear fashion.

Conclusion: Keeping your hands clean is not a luxury. During every medical interaction, patients, healthcare providers, and their families must practise good hand hygiene.

Even in areas with limited resources and infrastructure, you may avoid infections by using hand rubs with alcohol or washing your hands with soap and water.

Where treatment is given, hand hygiene supplies and equipment should be easily accessible to patients, healthcare professionals, and guests. Safe and clean hands are the product of a dedication to the water supply, soap, clean towels, and alcohol-based hand massage.

Reference:

World Health Organisation. “World Hand Hygiene Day 2023.” *www.who.int*, 2023, www.who.int/campaigns/world-hand-hygiene-day/2023 .

WHO. “Key Facts and Figures.” *www.who.int*, 2023, www.who.int/campaigns/world-hand-hygiene-day/2023/key-facts-and-figures.

World Health Organization. “First-Ever WHO Research Agenda on Hand Hygiene in Health Care to Improve Quality and Safety of Care.” *Www.who.int*, 12 May 2023, www.who.int/news/item/12-05-2023-first-ever-who-research-agenda-on-hand-hygiene-in-health-care-to-improve-quality-and-safety-of-care.

Gozdzielewska, Lucyna, et al. “The Effectiveness of Hand Hygiene Interventions for Preventing Community Transmission or Acquisition of Novel Coronavirus or Influenza Infections: A Systematic Review.” *BMC Public Health*, vol. 22, no. 1, 2 July 2022, www.ncbi.nlm.nih.gov/pmc/articles/PMC9250256/, <https://doi.org/10.1186/s12889-022-13667-y> .

Tartari, E., Garlasco, J., Mezerville, M.Hd. et al. Ten years of hand hygiene excellence: a summary of outcomes, and a comparison of indicators, from award-winning hospitals worldwide. *Antimicrob Resist Infect Control* 13, 45 (2024). <https://doi.org/10.1186/s13756-024-01399-0> .

Suen LKP, So ZYY, Yeung SKW, Lo KYK, Lam SC. Epidemiological investigation on hand hygiene knowledge and behaviour: a cross-sectional study on gender disparity. *BMC Public Health*. 2019 Apr 11;19(1):401. DOI: 10.1186/s12889-019-6705-5. PMID: 30975130; PMCID: PMC6460727.