

## ORIGINAL RESEARCH ARTICLE

# A STUDY ON HAND HYGIENE COMPLIANCE AMONG HEALTH CARE PROFESSIONALS IN ICU OF A SELECTED HOSPITAL

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### ABSTRACT

Hand Hygiene is one of the best measures to control infection. Through structured questionnaire, the WHO hand hygiene compliance tool and structured teaching programme recommended by the WHO, Pre and post tests were done 1 week after and 1 month after which resulted that adherence to hand hygiene compliance was not satisfactory among Healthcare Professionals. The interventional study through teaching programme was not significantly effective to improve their compliance due to short span of time. To have enduring effect, there is a need of continuous teaching programme on long term basis.

**Key Words:** Hand Hygiene, Compliance, Healthcare Professionals and ABHR.

### INTRODUCTION

Medical hand hygiene pertains to the hygiene practices related to the administration of medicine and medical care that prevents or minimizes disease and the spreading of disease through pathogens (including bacteria or viruses) and chemicals which can cause personal harm or disease.<sup>1</sup>

Noncompliance also has been a major contributor to outbreaks. The prevalence of health-care--associated infections decreases as adherence of HCP to recommended hand hygiene measures improves.<sup>2</sup>

Five Indications/moments are based on those defined by the WHO Guidelines on Hand Hygiene:

A Moment is when there is a perceived or actual risk of pathogen transmission from one surface to another via the hands. Healthcare workers hands will come in contact with many different types of surfaces while undertaking a succession of tasks.

The 5 Moments for HH are:

Moment 1: Before touching a patient

Moment 2: Before a procedure

Moment 3: After a procedure or body fluid exposure risk

Moment 4: After touching a patient

Moment 5: After touching a patient surroundings<sup>3</sup>

Hand hygiene adherence should be a healthcare facility priority requiring leadership, administrative support and financial resources.<sup>4</sup>

An observational study was conducted at an oncology hospital findings highlighted the need to continue to push compliance

with hand hygiene using innovative approaches that go beyond teaching and in-service training.<sup>5</sup>

The exposure to vivid vicarious experience is a potential means to improving the power of existing training methods and increasing the propensity for instilling sustainable adequate hand hygiene habits.<sup>6</sup> A poor self-efficacy or a poor attitude toward time-related barriers appear to be less compliant.<sup>7</sup> Multiple approaches and persistent encouragement are key factors leading to a sustained high level of appropriate hand hygiene practices among nursing personnel.<sup>8,13</sup>

### Definition of an Observed Hand Hygiene Episode

For the purpose of this audit tool an observed hand hygiene episode is defined as the use of alcohol hand rub/gel or washing hands with soap and water immediately before or after a defined hand hygiene opportunity.<sup>11,12</sup>

### Definition of Compliance

Compliance is defined as the total observed hand hygiene episodes divided by the HHO multiplied by 100 and expressed as a percentage.<sup>9,10</sup>

### MATERIALS AND METHODS

The research approach in this study is Descriptive and interventional. It includes collection of information, opinion and attitude directly from the subjects of the study using a Structured Questionnaire Schedule. Primary data has been collected using Structured Questionnaire method from Health care professionals (Nurses, Doctors and other ancillary staffs like radiologist, physiotherapists, perfusionist etc.) and direct

observation using hand hygiene compliance tool. Secondary data has been collected through other relevant hospital records. The population consists of Nurses, Doctors, and other health care professionals in ICU. The data has been collected by using simple random sampling through structured questionnaire and 50 HCPs were observed using HH compliance tool before structured teaching programme recommended by the WHO on HH and post tests were done after 1 week and 1 month intervals. The study was carried out over a period of 7 weeks and results were analyzed through Z test under expert's guidance. The (interventional) structured teaching programme comprised of:

- Hand Hygiene power point presentation
- The WHO Hand Hygiene Video
- Demonstration

**RESULTS**

The data analysis was done from a sample size of 50 healthcare professionals who were given structured questionnaire and were observed using HH compliance measurement tool.

Part 1: Data analysis through structured questionnaire

Part 2: Observation through Hand Hygiene Compliance measurement Tool

**PART: 1**

100% of Nurses, Doctors and other Healthcare professionals: knew about the availability of ABHR in their area; use of soap and water as preferred method of hand hygiene; that ABHR saves time; adequately cleans hands; use of ABHR when hands are visibly soiled; follow 6 steps of Hand wash (soap and water) and 6 steps of Hand wash (ABHR) as recommended by the WHO.

50% of other HCPs knew that they have alcohol impregnated wipes in their area. Used it to wipe the equipment; 86, 50 and 30% of nurses, doctors and others respectively used alcohol impregnated wipes to clean the equipment; 100% of HCPs knew that ABHR supplied in their ICU contained Moisturiser (glycerine); 80% of other HCPs have attended an in- service on hand hygiene in last 12 months. 80% of others perform Hand hygiene before and after donning the gloves on regular basis for the 5 moments of hand hygiene as recommended by the WHO.

**Table 1: Reminder to Colleague about HH**

HCPs	Always (%)	Often (%)	Sometimes (%)	Never (%)
Nurses	20	30	10	40
Doctors	10	10	15	65
Others	5	15	20	60
Total	12	18	15	55

The above Table 1 shows that 12, 18, 15 and 55 percent of Health Care Professionals (HCPs) always, often, sometimes and never respectively remind their colleague to disinfect their hands before touching patients.

**Table 2: Reminder from colleague about HH**

HCPs	Always (%)	Often (%)	Sometimes (%)	Never (%)
Nurses	40	40	5	15
Doctors	60	20	10	10
Others	20	20	30	30
Total	40	27	15	18

The above Table 2 shows that 40, 27, 15 and 18 percent of HCPs mentioned that their colleague always, often, sometimes and never respectively remind them to disinfect their hands before touching a patient.

**Table 3: Reminder from Patients about HH**

HCPs	Always (%)	Often (%)	Sometimes (%)	Never (%)
Nurses	0	0	20	80
Doctors	0	0	10	90
Others	0	0	0	100
Total	0	0	10	90

The above Table 3 shows that 10 Percent HCPs mentioned that patients sometimes remind them to practice Hand Hygiene. 90% of HCPs mentioned that the patients never remind them to practice Hand Hygiene.

30% of Healthcare professionals emphasized on creating awareness through Hand hygiene training programme, 20% on orientation class for new healthcare professionals, 20% suggested that there should be constant reminder and 10% suggested being good example are indispensable to promote Hand Hygiene.

**Table 4: HH compliance before structured teaching programme**

HCPS	Observed HH Episodes	HH Opportunities	Compliance %
Nurses	180	444	40.54
Doctors	66	130	50.77
Others	15	38	39.47
Total	261	612	42.65

The above Table 4 shows that 40.54, 50.77 and 39.47 % of nurses, doctors and other Healthcare professionals were compliant before the structured teaching programme.

**Table 5: HH compliance one week after structured teaching programme**

HCPS	Observed HH Episodes	HH Opportunities	Compliance %
Nurses	190	441	43.08
Doctors	68	133	51.13
Others	19	39	48.72
Total	277	613	45.19

The above Table 5 shows that 43.08, 51.13, and 48.72 % of healthcare professionals (nurses, doctors and others) were compliant 1 week after.

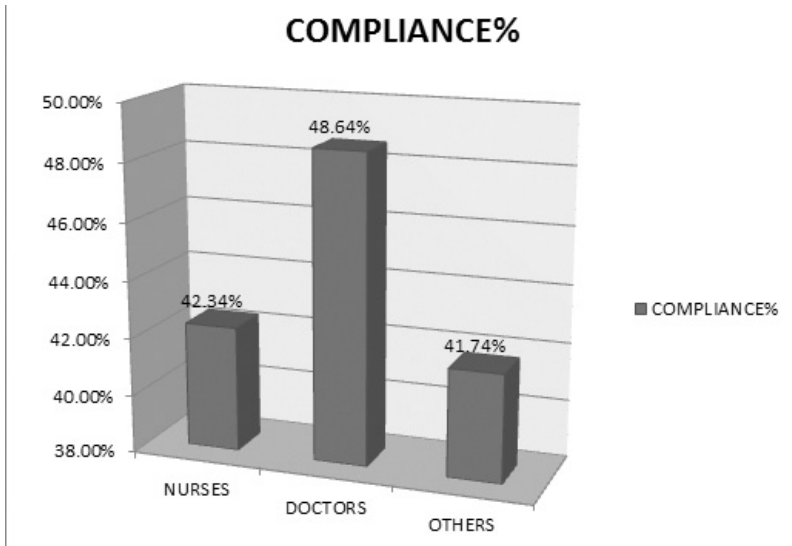
**Table 6: HH compliance one month after structured teaching programme**

HCPS	Observed HH Episodes	HH Opportunities	Compliance%
Nurses	188	433	43.42
Doctors	62	140	44.29
Others	14	38	36.84
Total	264	611	43.21

The above Table 6 shows that 43.42, 44.29 and 36.84 % of healthcare professionals (nurses, doctors and others respectively) were compliant 1 month after.

**Table 7: Overall HH compliance**

HCPS	Observed HH Episodes	HH Opportunities	Compliance%
Nurses	558	1318	42.34
Doctors	196	403	48.64
Others	48	115	41.74
Total	802	1836	43.68

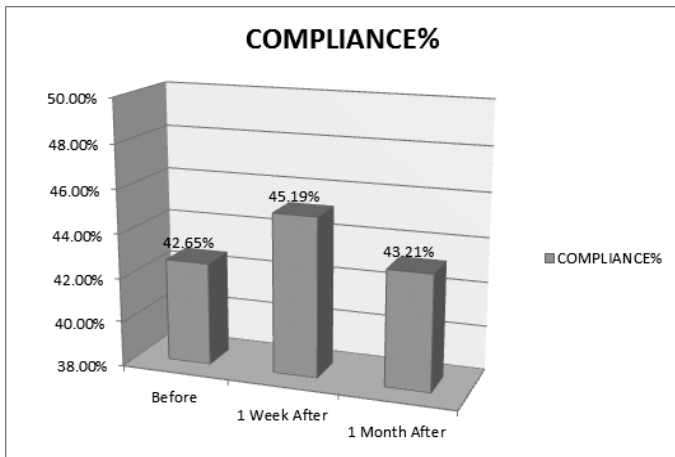


**Figure 1: Overall HH Compliance**

The above Table 7 and Figure 1 shows that 42.34, 48.64 and 41.74 percent of Healthcare Professionals (nurses, doctors and others respectively) were compliant overall.

**Table 8: Overall HH Compliance one month after**

Time	Compliance%
Before	42.65
1 Week After	45.19
1 Month After	43.21



**Figure 2: Overall HH Compliance one month after**

The above Table 8 and Figure 2 shows that 42.65% of HCPs were compliant before, 45.19% 1 week after and 43.21%, 1 month after.

**Note:**

HCPs	Sample Size
Nurses	35
Doctors	10
Others	5
<b>Total</b>	<b>50</b>

**PART: 2****Table 9: Comparison of responses of HH between different duration among HCPs**

S.N	Category of Staff	Time of Evaluation	Observed HH Episodes	Compliance %	Comparison Between Duration	Z Value	P Value
<b>1</b>	<b>Nurses</b>						
		Before	180	40.54	Before and 1 week	0.495	0.62
		1 week after	190	43.08	1 week and 1 month	0.066	0.95
		1 month after	188	43.42	before and 1 month	0.555	0.58
<b>2</b>	<b>Doctors</b>						
		Before	66	50.77	Before and 1 week	0.041	0.97
		1 week after	68	51.13	1 week and 1 month	0.781	0.43
		1 month after	62	44.29	before and 1 month	0.735	0.46
<b>3</b>	<b>Others</b>						
		Before	15	39.47	Before and 1 week	0.542	0.59
		1 week after	19	48.72	1 week and 1 month	0.688	0.49
		1 month after	14	36.84	before and 1 month	0.145	0.88
<b>4</b>	<b>Total</b>						
		Before	261	42.65	before and 1 week	0.593	0.55
		1 week after	277	45.19	1 week and 1 month	0.463	0.64
		1 month after	264	43.21	before and 1 month	0.129	0.90

The above Table 9 shows that Hand Hygiene compliance among Doctors between 1 week and 1 month after, before and 1 month after. Since the p value is  $>0.05$ , the differences in compliance rates are not significant.

**DISCUSSION**

The study was focused on Hand Hygiene compliance among HCPs in ICU. The data were collected through structured questionnaire and hand hygiene compliance tool the WHO and structured teaching programme recommended by the WHO was also administered and post tests were done 1 week after and 1 month after. It was found that adherence to hand hygiene compliance was not satisfactory. The interventional study through teaching programme was not effective to improve their compliance. To have enduring effect, there is a need of continuous teaching programme on long term basis.

Hand hygiene compliance among HCPs can be improved by following measures:

## A. Education and motivation programs:

- Monitor HCPs adherence with recommended HH practices and give feedback.
- Implement a multidisciplinary program to improve adherence to recommended practices.
- Encourage patients and their families to remind HCPs to practice HH.

## B. Administrative measures to Improve HH:

- Make improve HH an institutional priority.
- Place ABHRs at entrance to patient room or at bedside.
- Provide HCPs with pocket-sized containers.

## CONCLUSION

Adherence to recommended hand hygiene practices by healthcare professionals is the most effective way to reduce healthcare-associated infections. Yet adherence remains low and many hand hygiene improvement initiatives are neither sustainable nor standardized. The study done on Hand hygiene compliance shows that the training and awareness programme should be promoted and its continuity is the key to success. The quote "ROME WAS NOT BUILT IN A DAY" is apt because hand hygiene compliance is a long-term goal which should be nurtured and grown through ongoing interventional programme for HCPs, feedback, setting good example and awareness programme in a continuous basis.

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