

Hand Hygiene: Impact of Educational Training and Awareness Programme

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Abstract: Hand Hygiene is a cost-effective method in preventing infection transmission. Improper Hand Hygiene by healthcare workers (HCWs) is responsible for about 40% of nosocomial infections resulting in prolonged illnesses, hospital stays, long-term disability and unexpected high costs on patients and their families, and also lead to a massive additional financial burden on the health-care system. Hand Hygiene practices have been found to be faulty in most healthcare settings. We conducted a cross sectional, questionnaire and observation based study to evaluate the knowledge and compliance of Hand Hygiene among Health care professionals in one of the health care facilities in Gujarat. Among which 100 Health care professionals were observed working in Internal Medicine and Obstetrics and Gynaecology (OBGYN), Neonatal health care care of the hospital. The rate of Hand Hygiene compliance before hand hygiene educational programme was 37.14, 65.51 and 36 % of Nurses/ Brothers, doctors & other Health care professionals respectively. That was increased to 38.65, 72.72 and 45.28 % in healthcare professionals (Nurses/ Brothers, doctors and others respectively) after a 1 week of teaching programme, which was subsequently decreased at the end of 2 weeks and one month. So the training and awareness programme should be promoted and its continuity is the key to success.

Key words: Hand Hygiene, Health care Professional, Compliance, ABHR, WHO guideline,

I. Introduction

Hand Hygiene is universally acknowledged to be the single most important measure to prevent cross-transmission of microorganisms from one patient to another^[1]. The transfer of microorganisms by the hands of hospital staff has been identified as a major factor in the transmission of hospital-acquired infections^[2-4]. Hand Hygiene is the cornerstone measure of prevention of health care-associated infection and to ensure safe client care. However, health care workers' compliance with good practice is low in most settings^[5,6]. Multiple factors influence Hand Hygiene performance, and its promotion is particularly complex in developing countries where limited resources and culture-specific issues can strongly influence practices^[6-9].

Five Indications 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 Indications for Hand Hygiene are:

1: Before touching a patient, 2: Before a procedure, 3: After a procedure or body fluid exposure risk, 4: After touching a patient, 5: After touching a patient surroundings^[10].

Hand Hygiene adherence should be a healthcare facility priority requiring leadership, administrative support and financial resources.^[11] 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.^[12] 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.^[13] A poor self-efficacy or a poor attitude toward time-related barriers appear to be less compliant.^[14] Multiple approaches and persistent encouragement are key factors leading to a sustained high level of appropriate Hand Hygiene practices among nursing personnel.^[15,16]

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.^[17,18]

Definition of Compliance : Compliance is defined as the total observed Hand Hygiene episodes divided by the Hand Hygiene recommended multiplied by 100 and expressed as a percentage^[19,20].

II. Methodology

A cross sectional, questionnaire and observation based study was carried out in one of the Hospital of Gujarat in 8 weeks period from June in 2013. Among which 100 health care workers working in Internal Medicine and Obstetrics and Gynaecology (OBGYN), Neonatal health care of the hospital were used as the survey centres. Among them 62 - Nurses/ Brothers, 18- Doctors, 20- other staff were observed for Hand hygiene.

They were observed for performing their usual duties for clinical patients care. Details regarding patient contact, hand hygiene compliance, and hand washing technique among the health workers were noted.

Some data has been collected using Structured Questionnaire method from Health care professionals (Nurses/ Brothers, Doctors and other staffs etc.) and direct observation using Hand Hygiene compliance tool.

Other data has been collected through other relevant hospital records. Structured Questionnaire was asked for patients contact, Hand Hygiene compliance, attitude and hand washing technique among the health workers including doctors, Nurses/ Brothers were noted. The data has been collected by using simple random sampling. As recommended by the WHO, Hand Hygiene compliance tool was observed before structured teaching programme and 1week, 2 weeks and 1month after completion of teaching programme. The interventional structured teaching programme comprised of various type of trainings on Hand Hygiene by different mode. The study results were analyzed statistically under expert's guidance.

III. Results

The data analysis was done from a sample size of 100 healthcare professionals who were given structured questionnaire and were observed using Hand Hygiene compliance measurement tool. Among them 95% of Nurses/ Brothers, 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) as recommended by the WHO. 60% of other healthcare professionals knew that they have alcohol impregnated wipes in their area. Used it to wipe the equipment; 65, 70 and 22% of Nurses/ Brothers, doctors and others staff respectively used alcohol impregnated wipes to clean the equipment; 100% of healthcare professionals knew that ABHR supplied in their facility contained Moisturiser (glycerine). 60% 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 3.1.1 : Hand Hygiene compliance before structured teaching programme

HCPS	Hand Hygiene performed Episodes	Hand Hygiene Recommended	Compliance %
Nurses/ Brothers	195	525	37.14%
Doctors	95	145	65.51%
Others	18	50	36%
Total	308	720	42.77%

The shown in above Table, 37.14, 65.51 and 36 % of Nurses/ Brothers, doctors and other Healthcare professionals were compliant before the structured teaching programme.

Table 3.1.2: Hand Hygiene compliance one week after structured teaching programme

HCPS	Hand Hygiene performed Episodes	Hand Hygiene Recommended	Compliance %
Nurses/ Brothers	300	520	57.69%
Doctors	104	143	72.72%
Others	24	53	45.28%
Total	428	716	59.77%

The shown in above Table, 57.69, 72.72 and 45.28 % of healthcare professionals (Nurses/ Brothers , doctors and others) were compliant 1 week after.

Table 3.1. 3 : Hand Hygiene compliance two week after structured teaching programme

HCPS	Hand Hygiene performed Episodes	Hand Hygiene Recommended	Compliance %
Nurses/ Brothers	255	522	48.85%
Doctors	98	140	70%
Others	22	55	40%
Total	375	717	52.30%

The shown in above Table, 48.85, 70, and 40 % of healthcare professionals (Nurses/ Brothers, doctors and others) were compliant 2 week after

Table 3. 1. 4: Hand Hygiene compliance one month after structured teaching programme

HCPS	Hand Hygiene	Hand Hygiene	Compliance %
Nurses/ Brothers	221	525	42.09%
Doctors	90	141	63.82%
Others	18	54	33.33%
Total	329	720	45.69%

The shown in above Table, 42.09, 63.82 and 33.33 % of healthcare professionals (Nurses/ Brothers, doctors and others respectively) were compliant 1 month after.

HCPS	Hand Hygiene performed Episodes	Hand Hygiene Recommended	Compliance %
Nurses/ Brothers	971	2092	46.41
Doctors	387	569	68.01
Others	82	212	38.67
Total	1440	2873	50.12

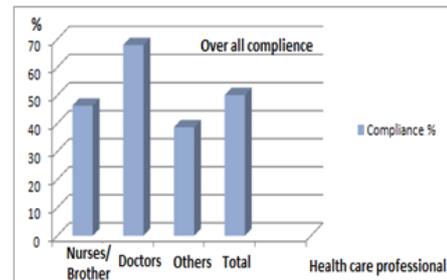
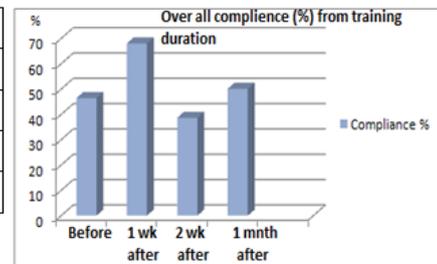


Table 3.1.5 and Figure 3.2.1 shows Overall Hand Hygiene Compliance, 46.41, 68.01 and 38.67 % of Healthcare Professionals (Nurses/ Brothers, doctors and others respectively) were compliant overall.

Time	Compliance %
Before	42.77
1 Week After	59.77
2 Weeks After	52.30
1 Month After	45.69



3.1.6 & Fig 3.2.2: -Overall Hand Hygiene compliance in relation to duration from training on Hand Hygiene

The above Table 3.1.6 and Figure 3.2.2 shows that 42.77% of healthcare professionals were compliant before, 59.77% 1 week after, 52.30% 2 week after and 45.69 % 1 month after.

IV. Discussion

In this the study we have focused on Hand Hygiene compliance among healthcare professionals in selected hospital. 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. Post tests analysis was done at the end of 1 week, 2 weeks and 1 month. Adherence to Hand Hygiene compliance was not as satisfactory as recommended. From study it was indicated that hand hygiene compliance of doctors and Nurses/ Brothers were low. This finding agrees with those of other baseline surveys which indicated that health worker compliance with hand hygiene recommendations at baseline was low.^[21-27] The interventional through teaching programme was not so effective to improve their compliance. To have expected effect, we need to have continuous teaching programme ongoing for long term basis.

Hand Hygiene compliance among healthcare professionals can be improved by following measures:

A. Education and motivation programs: Monitor HCPs adherence with recommended Hand Hygiene practices and give feedback, Implement a multidisciplinary program to improve adherence to recommended practices, Encourage patients and their families to remind healthcare professionals to practice Hand Hygiene .

B. Administrative measures to Improve Hand Hygiene :Make improve Hand Hygiene an institutional priority, Place ABHRs at entrance to patient room or at bedside, Provide healthcare professionals with pocket-sized containers.

We also have some limitations of this observational assessment. Because of the relatively short duration of the study period, the inventory of Hand Hygiene resources and observation of practices was conducted at a single point in time and may not represent the true availability of resources over time. Over that, the data was collected by observers watching large, busy health professional groups, there may have been an under-recording of Hand Hygiene events. With this limitations, our baseline assessment may provides a guide to future efforts in improving Hand Hygiene in the further study.

V. 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. This study provides evidence that care-related Hand Hygiene compliance among doctors, Nurses/ Brothers and others in this large hospital is low; therefore, there is a need to design Hand Hygiene promotion intervention programmes in all service provision centres. These programs should emphasise Hand Hygiene practices as the foundation of universal basic precautions in reducing nosocomial infections, reducing complications, and improving quality of health-care delivery. In addition, Hand Hygiene education and promotion in the hospital (and other health facilities) should include the introduction of alcohol-based hand rubs as an accessible and effective Hand Hygiene option. The study shows that the training and awareness programme should be promoted with continuity. And it is the key to success for prevention of healthcare-associated infections. Hand Hygiene compliance is a long-term goal which should be nurtured and grown through ongoing interventional programme for healthcare professionals, feedback, setting good example and awareness programme in a continuous basis.

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