

Original Research Article

Awareness of Hand Hygiene Practices among Healthcare workers in intensive care unit of a tertiary care Hospital of Odisha

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Abstract: The aim of this study was to assess the awareness and knowledge of hand hygiene practices among healthcare workers in a tertiary care hospital. The present study was conducted to assess the knowledge of the five moments of hand hygiene guideline issued by world health organisation. Healthcare workers including doctors and nurses were given a questionnaire during daily patient visit on random basis. The data was collected and analysis was done using SPSS software version 18. A total of 100 doctors and nurses were questioned during the period of observation. Out of 100, 20 were doctors and 80 were nurses. Among the nursing staff, 30 nurses have no knowledge of moments of hand hygiene so they were excluded from present study. All doctors had knowledge of hand hygiene moments and most of them used alcoholic hand rub. Most of nurses used soap and water compared to waterless-alcohol-based hand rub. Knowledge of hand hygiene practice is low among nursing staff compared to doctors. Use of alcohol-based disinfectant was found to be very low among nursing staff compared to soap and water.

Keywords: hand hygiene, healthcare, soap and water, alcohol hands rub

INTRODUCTION

Bacteria that cause hospital-acquired infections are most commonly transmitted via hands of health care worker. Studies have shown that washing hands between patient visits reduces spread of bacteria in health care. Hand hygiene is the single most important factor in preventing nosocomial infection in intensive care units. So the correct knowledge and practice of hand hygiene is a must for every health care worker.

Lack of knowledge and compliance of hand hygiene can lead to severe hospital acquired infections and cross infections in intensive care units [1]. World health organisation has developed guidelines for hand hygiene in health care and motivating hospital authorities and health care workers to implement the guidelines at every possible level and time of health care. My five moments of hand hygiene is the recommended guideline issued recently. If adherence to hand hygiene recommendations is followed, we can prevent the spread of nosocomial infections in the hospitals. However, knowledge and practice of hand hygiene in the hospitals is poor (40%) worldwide particularly in developing countries [2].

Both WHO and CDC guidelines recommend alcohol-based hand rub as a standard of care compared to soap and water. It is better in place of heavy workloads. It is easier to locate nearby and less irritating to skin and saves time. Hands when visibly dirty soiled with blood or body fluids, soap and water to be used, where as alcohol-containing hand disinfectant is an effective alternative to standard soap and water in other situations. [3]Health care workers don't use soap and water because sinks not conveniently located, no soap and paper towels available, skin irritation from frequent soap/water and it takes too long. Many studies conducted in intensive care units have reported that healthcare workers failed to wash their hands as per the recommended times which is responsible for spread of infection due to multi drug resistant organisms [4]. The aim of this study was to investigate the awareness and practice of hand hygiene among the health care workers in intensive care units in a tertiary care hospital.

MATERIALS & METHODS

This was a cross sectional study where a questionnaire was provided to all health care workers consisting of doctors and nurses working in central

Table-1: 5 moments of hand hygiene

Question-5 moments of hand hygiene	Answer-what to do
Before touching a patient	Do nothing
	Hand wash with soap and water
	Hand hygiene with disinfectant
Before clean or aseptic procedure	Do nothing
	Hand wash with soap and water
	Hand hygiene with disinfectant
After contact with body fluids	Do nothing
	Hand wash with soap and water
	Hand hygiene with disinfectant
After touching a patient	Do nothing
	Hand wash with soap and water
	Hand hygiene with disinfectant
After touching the patient surrounding	Do nothing
	Hand wash with soap and water
	Hand hygiene with disinfectant

Questions were asked about awareness of importance of hand hygiene for infection control and knowledge about all components of five moments of hand hygiene and whether they follow those five moments with every patient visit. Out of 100 health care workers 30 nurses were excluded due lack of knowledge about any one of the component of five moments of hand hygiene. Data was collected from remaining doctors and nurses (70) working in central and medical intensive care units. "My Five moments for hand Hygiene" was promoted by world health Organization (WHO), which identifies the key moments when healthcare workers should perform hand hygiene before and after doing any procedure [5]. The five moments of hand hygiene include, 1- Before touching a patient, 2 -Before clean or aseptic procedure, 3- After contact with body fluids, 4- After touching a patient, and 5- After touching the patient surrounding. As per protocol of our ICU, hand washing sinks were situated nearest to the point of care with soap. Alcohol-based hand rub disinfectants were provided at each bed in the intensive care unit. Data analysis was done using SPSS software version 18.

RESULTS

A total of 100 health care workers were given the questionnaire in the central and medical intensive care units between Aug 2016 to Dec 2016. 50 nurses and 20 doctors had knowledge about My Five moments for hand Hygiene. Healthcare workers were less likely to use soap and water (14%) compared to alcohol-based

hand hygiene disinfectant (34.4%). The awareness of hand hygiene is shown in the Table 2.

Awareness of hand hygiene among nurses was 62% and among doctors is 100%. Nurses preferred to wash their hands with soap and water before touching a patient [44%] rather than using alcohol based hand rub disinfectant [56%]. Secondly before any clean or aseptic procedure 48% nurses preferred hand washing with soap and water and 52% nurses with disinfectant. After contact with body fluids 64% preferred hand washing with soap and water and 36% by alcohol based disinfectant. After touching a patient 70% preferred hand washing with soap and water and 30% with disinfectant. Lastly after contact with the patient surroundings 80% preferred hand washing with soap and water and 20 % preferred hand hygiene with disinfectant.

100% doctors preferred hand hygiene with disinfectant before touching the patient. Before aseptic procedure 10% preferred hand washing where as 90% preferred disinfectant. After contact with body fluids 25% opted for hand washing with soap and water and 75% by use of alcohol based hand rub. After touching a patient 40% opted hand washing with soap and water and 60% preferred use of disinfectant and lastly after touching the patient surroundings 50% preferred hand washing with soap and water and 50% by using alcohol based disinfectant.

Table 2: Awareness of hand hygiene among nurses and doctors

	Total n=70, (%)		Nurses n=50, (%)		Doctors n=20, (%)		P value,
	Hand washing with soap and water	Hand hygiene with disinfectant	Hand washing with soap and water	Hand hygiene with disinfectant	Hand washing with soap and water	Hand hygiene with disinfectant	
Before touching a patient	22(31.4%)	48(68.5%)	22(44%)	28(56%)	0(0%)	20(100%)	0.205
Before clean or aseptic procedure	26(37.1%)	44(62.85%)	24(48%)	26(52%)	2(10%)	18(90%)	0.271
After contact with body fluids	37(52.8%)	33(47.14%)	32(64%)	18(36%)	5(25%)	15(75%)	0.45
After touching a patient	43(61.4%)	27(38.5%)	35(70%)	15(30%)	8(40%)	12(60%)	0.112
After touching the patient surrounding	50(71.4%)	20(28.5%)	40(80%)	10(20%)	10(50%)	10(50%)	0.482

DISCUSSION

Many personnel don't realize when they have germs on their hands and transfer them to the patients while doing, simple tasks like taking a patient's vital signs, touching the patient's clothing or linens and touching equipment and furniture nearby. Mobile phones used by health care workers have become a potential source of nosocomial infections. According to WHO data about 140000 patients suffer from hospital acquired infections in developing countries on daily basis. It adds to increased morbidity, mortality, prolonged ICU stay and the cost of treatment. It is a real challenge in intensive care units [6].

Patients in the intensive care units are more likely to be infected by multidrug-resistant microorganisms. Most of these infections are spread by transmission of microorganisms from the healthcare worker's hands [7]. World health organisation has developed a protocol for hand hygiene for hospitals. It is, to be followed before and after all patient or patient surrounding contact, before aseptic procedures, or after body fluid exposure. Kouni S et al concluded that even after a lot of promotion, compliance with hand washing is still poor due to lack of knowledge and practice[8]. The present study aimed to determine the knowledge of hand hygiene among health workers .Helder O *et al.*; in their study of hand disinfection in neonatal intensive care unit opined that protocolised hand hygiene measures can prevent serious nosocomial infections [9]. Karabey *et al.*; in their study of the frequency of hand washing in intensive care unit concluded that hand washing can prevent transmission of multidrug resistant

organisms to patient. [10]. Sacar *et al.*; suggested that hands must be washed both before and after touching the patient or doing any procedure [11].

Mazi W *et al.*; and Scheithauer S *et al.*; in their studies have shown that compliance with hand hygiene among nurses is better than doctors [12, 13] but the current study reports that the knowledge regarding hand hygiene is better in doctors than nursing staffs. Our study shows lack of knowledge of hand hygiene among nurses. The present study was done to evaluate the awareness of hand hygiene practices based on the WHO my five moments of hand hygiene. We found that most of the healthcare workers preferred to use hand hygiene after the contact with the patient or surrounding, in contrast to before the patient contact. These findings suggest that healthcare workers prefer to protect themselves first rather than their patients.

Mortel T studied about implementation of WHO moments of hand hygiene practices in various critical care units. He suggested direct observation of compliance and measuring the consumption of hand hygiene products for assessment of better implementation [14]. However, there may be bias in directly observed compliance studies. Haas J opined that one of the most important biases is the Hawthorne effect, which is attributed to the tendency of people who behave differently from the way they would otherwise when they are observed [15]. For that reason we opted questionnaire method and asked them regarding knowledge about moments of hand hygiene and whether they follow it or not. Bhumbala *et al.*; in their

study had found that use of mobile phones adding to the hand infection which get transmitted to patients in intensive care unit. He suggested restricting use of mobile phone and washing hand every time one uses mobile phone [16]. Asare A in his study have shown that alcohol based hand rub was better as it provides a residual effect that soap and water do not provide besides its other advantages [17]. Most of doctors in our study have preferred to use alcohol based disinfectant. Nurses thought that alcohol-based disinfectants were not good for them because of the unpleasant irritant effects on the hands.

CONCLUSION

Both awareness of hand hygiene and its practice among nurses was low as compared to doctors. As nursing staffs are the backbone of hygienic practices in any intensive care unit, correct knowledge of hand hygiene is essential. Alcohol based hand rub is an ideal alternative to soap and water in most of the situations as it is simple, equally effective and less time consuming. Regular workshops on hand hygiene programmes must be done for the nursing staff in hospitals, particularly for those working in the intensive care units.

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