

THE KNOWLEDGE OF HEALTH CARE WORKERS AND DOCTORS REGARDING HAND SCRUB

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ABSTRACT

BACKGROUND

Hand hygiene practices of health care workers has been shown to be an effective measure in preventing hospital acquired infections. This concept has been aptly used to improve understanding, training, monitoring, and reporting hand hygiene among healthcare workers. We conducted this study to assess the knowledge of doctors and health care workers regarding hand scrub.

METHODS

A study was conducted among doctors and health care workers in a tertiary care hospital. Knowledge was evaluated by using self-structured questionnaire based on the guidelines of hand hygiene prescribed by WHO.

RESULTS

The awareness and knowledge of preoperative surgical hand scrubbing was moderate in doctors, but unfortunately poor in HCWs.

CONCLUSION

Our study highlights the need for introducing measures in order to increase the knowledge of preoperative hand scrub in teaching hospital which may translate into good practices.

KEYWORDS

Hand Scrub, Infection, Hospital Acquired.

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INTRODUCTION: A properly conducted hand scrub is often cited as a primary weapon in infection control. It has been since the 18th century that high rate of perinatal mortality was recognised to be associated with nosocomial infection.⁽¹⁾ Since then effective hand washing was attributed as one of the most important measures to reduce such risk. Along with the acceptance of the 'Germ' theory (Which states that germ could be passed between patients and healthcare workers), it has also been established as a standard medical precaution.⁽²⁾ Despite the emphasis on importance of effective hand washing in prevention of nosocomial infection, not all doctors or health care workers are compliant to it where they either fail to wash their hands properly or fail to follow the correct steps in effective hand washing,⁽³⁾ which ultimately leads to surgical site infection (SSI).⁽⁴⁾

Nurses constitute the largest percentage of the health care workers (HCWs).⁽⁵⁾ and they are the "nucleus of the healthcare system".⁽⁶⁾ Because they spend more time with patients than any other HCWs, their compliance with hand

washing guidelines seems to be more vital in preventing the disease transmission among patients.

Hand Hygiene in Health Care: Nurses' hands come into close contact with patients and are frequently contaminated during routine patient care: e.g. auscultation and palpation or while touching contaminated surfaces, devices or materials such as changing of dressing.⁽⁷⁾ Therefore, hand hygiene is considered an essential, cheap and most effective means of preventing cross transmission. This method is designed to save lives and provide a safe treatment atmosphere for all patients and HCWs, regardless of the setting.⁽⁸⁾ use different terms for hand hygiene, such as hand antisepsis, disinfection, degerming, decontamination or sanitising. In this paper, hand hygiene refers to either hand washing with antimicrobial soap or hand disinfecting with an alcohol-based hand-rub. The aim of hand hygiene is to remove dirt and limit the microbial counts on the skin, to prevent cross transmission of pathogens between patients.⁽⁹⁾ Since nurses are present 24 hours a day, 7 days a week in the healthcare setting, it is essential to comply with hand hygiene policy and maintain patient safety.

Hand Hygiene and Infection Control Policies: Hand hygiene needs a multiple interventions approach in order to make it a sustainable practice within healthcare. Campbell.⁽¹⁰⁾ argues that hand hygiene is not only the responsibility of the Infection Control Department and recommends a multidisciplinary approach. Hospital

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administration, other key leaders and nursing leaders are the key to success for hand hygiene compliance within a hospital.

Moreover, Maxfield.⁽¹¹⁾ suggests that HCWs' culture and hospital atmosphere should consider the Infection Control Department as a resource and partner rather than an enforcer. Thus, infection control staff can play a vital role in hand hygiene compliance by encouraging patients' monitoring of hand hygiene by observation. Ott French.⁽¹²⁾ claims that hand hygiene adherence goes beyond education and training, as it involves continuous motivation towards change and how that change can be sustained. We conducted a survey in order to determine the actual knowledge of effective hand washing among health care workers and doctors with hypothesis that their awareness and knowledge about its importance are high as formal education is already introduced from early part of their training.

METHODS: We carried out a survey, in order to determine the knowledge of effective hand washing practice in health care workers and doctors. Consent was taken before inclusion of the subjects to be observed into the study. We kept the identity of participant secret by not asking them to write their name on the questionnaire. The subjects were those health care workers who have already attended formal sessions during their pre-clinical year. Knowledge was assessed using WHO hand hygiene questionnaire for doctors and health care workers. This proforma of 15 questions includes multiple choices and "yes" or "no" questions. The questionnaire was validated after testing on a small group of health care workers before the actual distribution. We conducted this study amongst 50 doctors and 25 health care workers of Lata Mangeshkar Hospital, Nagpur who consented for the survey. The questionnaire was given to all the participants.

STATISTICAL ANALYSIS: All the collected data was analysed using SPSS version 15.0 and Microsoft Excel. Frequencies and percentages were computed for all the information and were gathered in a tabular form. Observations were done to look at the knowledge and awareness about preoperative hand scrub.

OBSERVATIONS: Using descriptive and inferential statistics and comparing the responses given by the doctors and health care workers computed the results with the WHO prescribed guidelines. (Table 1). We compared the responses given by doctors and health care workers (HCWs) with the ideal norms of surgical hand scrubbing prescribed by WHO (WHO structured questionnaire of 15 questions included in the study). The grading was done as follows:
 Good Knowledge: 10 or more correct answers.
 Moderate Knowledge: 7 or more correct answers.
 Poor Knowledge: Less than 6 correct answers.

In Doctors: Out of 50 doctors 23 (46%) had good knowledge about preoperative hand scrubbing while 18 (36%) had moderate knowledge about preoperative surgical hand scrubbing and remaining 9 (18%) had poor knowledge.

So overall, the awareness about surgical hand scrubbing was moderate amongst doctors. In HCWs:-Out of 25 health care workers (HCWs), only 9 (36%) had good knowledge about surgical hand scrubbing and 6 (24%) had moderate knowledge about surgical hand scrubbing and the rest 10 (40%) had poor knowledge. So the knowledge of doctors and HCWs in preoperative surgical hand scrubbing was poor amongst HCWs (Nurses, ward boys).

Sl. No.	Questions	Response		Correct Response
		Doctors n=50	HCWs n=25	
1)	General practices			
	Is hand washing indicated even if Sterile gloves are used?	Y=48(96%) N=2(4%)	Y=8(32%) N=17(68%)	Yes
2)	Is hand drying after a surgical hand wash important?	Y=44(88%) N=6(12%)	Y=8(32%) N=17(68%)	Yes
Effective Hand Washing Is Done				
3)	To reduce the risk of contracting the disease or other infections yourself?	Agree=39(78%) Disagree=11(22%)	Agree=9(36%) Disagree=16(64%)	Agree
4)	To reduce spread of infection among patients?	Agree=43(86%) Disagree=8(14%)	Agree=10(40%) Disagree=15(60%)	Agree
5)	Does proper hand washing lowers nosocomial infections than any other measure?	Y=47(94%) N=3(6%)	Y=14(66%) N=11(44%)	Yes
6)	Effective hand washing involves the usage of soap and water or alcohol sanitizer with the action of rubbing of each part of the hands systematically?	Agree=48(96%) Disagree=2(4%)	Agree=7(28%) Disagree=18(72%)	Agree
7)	The usage of water only (without soap) to wash is NOT considered as effective hand washing?	Agree=38(76%) Disagree=12(24%)	Agree=8(32%) Disagree=17(68%)	Agree

8)	Central disease control (CDC) recommended at least 60% of alcohol?	Agree=37(74%) Disagree=13(26%)	Agree=12(48%) Disagree=13(52%)	Agree
9)	The combination of scrubbing your hands with soap (antimicrobial or not) and rinsing them with water loosens and removes bacteria from your hands?	Agree=35(70%) Disagree=15(30%)	Agree=19(76%) Disagree=6(24%)	Disagree
10)	Alcohol based antimicrobial should be used on dry hands?	Agree=41(82%) Disagree=9(18%)	Y=9(36%) N=16(64%)	Agree
11)	Antimicrobial mostly preferred?	(A) 21(42%)	(A) 13(52%)	7% Povidone iodine
12)	Minimum time required for surgical hand scrubbing?	(B) 19(38%)	(B) 9(36%)	2-3 Minutes
13)	Type of alcohol used in surgical hand scrub?	(A) 29(58%)	(A) 6(36%)	Ethanol
14)	Percentage of alcohol in hand wash?	(B) 35(70%)	(B) 7(28%)	70%
15)	Infection that can be transmitted from hand to hand contact is?	(C) 37(74%)	(C) 4(16%)	Infectious Diarrhoea
Table 1				

DISCUSSION: In our study, we found that the doctors had moderate knowledge which was a positive finding while the HCWs had poor knowledge. Feather et al⁽¹³⁾ studied the hand hygiene practices of 187 candidates during final MBBS OSCE (Objective Structured Clinical Examination) at The Royal London Hospital School of Medicine and Dentistry in UK and found that only 8.5% of candidates washed their hands after patient contact, although the figure rose to 18.3% when hand hygiene signs were displayed. The situation in healthcare centres of developing countries is even more unacceptable.⁽¹⁴⁾ In an earlier study from Saudi Arabia, adherence to hand hygiene was seen in 70% of medical students, 18.8% of nurses, and 9.1% of senior medical staff, but the technique was suboptimal in all.

Hand hygiene is a simple procedure which is instrumental in reducing hospital acquired infections and cross transmission of pathogens in the hospitals. To improve HCWs' compliance with hand hygiene, it is necessary to consider the hindering factors mentioned above and attempt to turn them to enhancer factors. For example, staff education and proper followup training in hand hygiene practice is important to identify situations where hand hygiene is reasonable; the infection control team can be involved in attaining this. Equally important is to clarify nurses' misconceptions in terms of glove usage and skin problems in order to achieve a better adherence to hand hygiene practice.

The present study shows that majority of the respondents had good knowledge while few had very good knowledge about surgical hand scrubbing. Despite the fact that hand hygiene is considered as the single best measure for infection control, compliance of health care workers regarding hand hygiene remains consistently poor. Our results suggest that there is wide scope for improvement in hand hygiene practices in Teaching hospital. It is important to encourage the infection control team to play a more active role in hand hygiene awareness and training in the hospitals. They should be encouraged to interact with the staff members and thereby exert a positive

influence on their attitudes and practices regarding hand hygiene.

The hospital should have displays of infection prevention practices. Further studies are needed to evaluate the actual practice of hand hygiene among health care workers.

CONCLUSION: Our study highlights the urgent need for introducing measures in order to increase the knowledge and awareness in Teaching Hospital, which may play a very important role in increasing hand hygiene compliance among the staff and doctors reducing cross transmission of infections among patients.

REFERENCES

1. Sulaiha SA, Ling WY, Chin LJ, et al. The lack of effective hand washing practice despite of high level of knowledge and awareness. *IeJSME* 2010;4(2):18-26.
2. Kihlstrom JF. Hand washing by healthcare provider. 2009. http://www.institutehot.com/hand_washing_by_health_care_providers.htm.
3. Mayo Clinic. Hand washing: an easy way to prevent infection. 2009. <http://www.mayoclinic.com/health/hand-washing/HQ00407>.
4. Lee KY, Coleman K, Paech D, et al. The epidemiology and cost of surgical site infections in Korea: a systematic review. *J Korean Surg Soc* 2011;81(5):295-307.
5. Buerhaus PI, Auerbach DI, Staiger DO. Recent trends in the registered nurse labor market in the US: short-run swings on top of long-term trends. *Nursing Economics* 2007;25(2):59-66.
6. Abualrub RF. Nursing shortage in Jordan: what is the solution? *Journal of Professional Nursing* 2007;23(2):117-120.

7. Kampf G, Loffler H. Hand disinfection in hospitals- benefits and risks. *Journal of the German Society of Dermatology* 2010;8(12):978-983.
8. Nazarko L. Potential pitfalls in adherence to hand washing in the community. *Br J Community Nursing* 2009;14(2):64-68.
9. Karabay O, Sencan I, Sahin I, et al. Compliance and efficacy of scrubbing and-rubbing during in-hospital practice. *Medical Principles and Practice* 2005;14(5):313-317.
10. Longtin Y, Sax H, Allegranzi B, et al. Videos in clinical medicine. Hand hygiene. *The New England Journal of Medicine* 2011;364:e24.
11. Maxfield D, Dull D. Influencing hand hygiene at spectrum health. *Physician Executive Journal* 2011;37(3):30-34.
12. Anwar MA, Rabbi S, Majeed F, et al. Self-reported practices of hand hygiene among trainers at a teaching hospital in a resource limited country. *Journal of Pakistan Med Assoc* 2009;59(9):631-634.
13. Feather A, Stone SP, Wessier A, et al. Now please wash your hands: the handwashing behaviour of final MBBS candidates. *Journal of Hospital Infection* 2000;45(1):62-64.
14. Basurrah MM, Madani TA. Hand washing and gloving practice among health care workers in medical and surgical wards in a tertiary care centre in Riyadh, Saudi Arabia. *Scandinavian Journal of Infectious Diseases* 2006;38(8):620-624.