

“WHO” cares about hand hygiene: A cross sectional study

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Abstract

Background: Hand hygiene is single, most cost-effective measure to reduce the incidence of healthcare-associated infections. Awareness about Hand Hygiene is variable. WHO guidelines (2009) mention ‘The Five moments, precautions, methodology of Hand Hygiene with soap water and alcohol based hand rub’. We conducted this study to check the awareness about hand hygiene in Healthcare workers (HCW). **Aim:** To evaluate the awareness about WHO Hand Hygiene guidelines amongst Health Care Workers caring for Neonates at Tertiary Care Hospital. **Materials and Methods:** A cross sectional study with qualitative interpretative design was conducted in January 1 to February 15, 2015. Subjects included HCW caring for newborns including Doctors, Nurses and ancillary staff. All HCW were assessed using a questionnaire based on WHO guidelines (2009) and interviewed during Objective Structured Clinical Examination. Data was collected and analyzed. **Results:** 172HCW including Doctors (37.7%), Nurses (41.2%) and Ancillary staff (20.9%) participated. All five moments of hand hygiene were enumerated by 9/172. All precautions for hand hygiene were enumerated by 5/172. All six steps of hand wash were performed by 34.8%. **Conclusion:** Awareness regarding hand hygiene is very low and needs to be reinforced amongst the HCW.

Keywords: Hand hygiene, Hand Rub, WHO, awareness.

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Received Date: 14/12/2015 Revised Date: 04/01/2016 Accepted Date: 10/02/2016

Access this article online

Quick Response Code:



Website:

www.medpulse.in

DOI: 14 February
2016

INTRODUCTION

Hand hygiene is single, most cost-effective, and practical measure to reduce the incidence of healthcare-associated infection¹ in neonates. The spread of multi drug resistant organisms in health-care settings is common and occurs mostly via health care workers¹ (HCW) contaminated hands³. Awareness about Hand Hygiene (HH) is variable. The compliance of HH among HCW is < 40% though very simple. Hence World Health Organization¹ has introduced evidence-based concept of “My five moments for hand hygiene”. These five moments include “before touching a patient, before performing aseptic and clean procedures, after being at risk of exposure to body fluids, after touching a patient, and after touching patient

surroundings”. Current guidelines recommend the use of alcohol-based hand rub formulations as the new standard of care, thus requiring a system change in most hospitals. For improving hand hygiene compliance in HCW, positive change of behavior is necessary, which is a gradual process. First step is to educate the HCW about hand hygiene and then to determine the gap in awareness and knowledge about hand hygiene. Hence this study was carried out.

MATERIALS AND METHODS

A cross sectional study with qualitative interpretative design was conducted in January 1 to February 15, 2015. Subjects included all HCW engaged in Newborn care, working in departments of Neonatology, Pediatrics and Obstetrics. HCW involved in newborn care directly viz Doctors and Nursing staff or indirectly (Ancillary staff) viz sweeper and ward boy were assessed using a predesigned Questionnaire based on WHO (2009) guidelines. The participation of HCW was voluntary, and the respondents’ questionnaires were kept confidential. HCW were interviewed individually in the language they understand. Verbal consent was taken. All HCW were interviewed and assessed during Objective Structured Clinical Examination in person by assessor trained in

Hand Hygiene. The assessment was not possible at the point of care. No Leading questions asked and responses were noted in the preformat by the assessor, under following topics:

1. About 5 moments of Hand Hygiene
2. Precautions for Surgical Hand wash
3. Method (6 steps recommended, duration)
4. About use of Hand rub

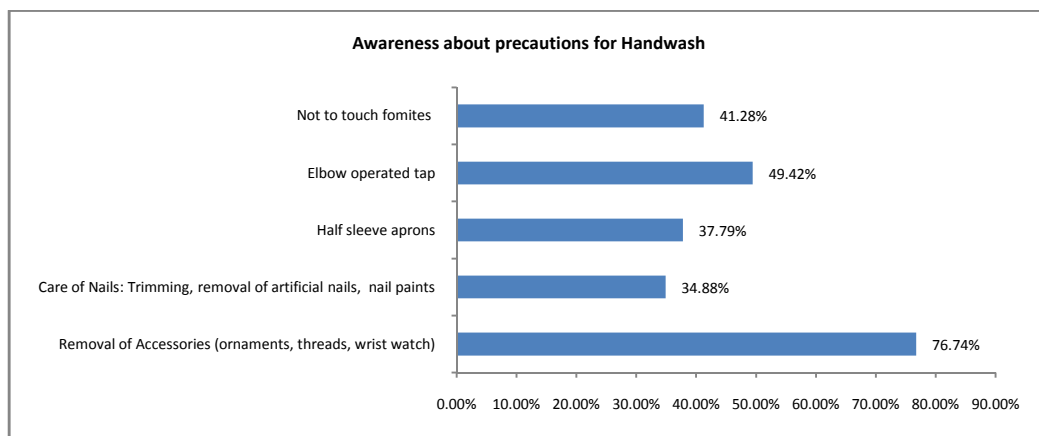
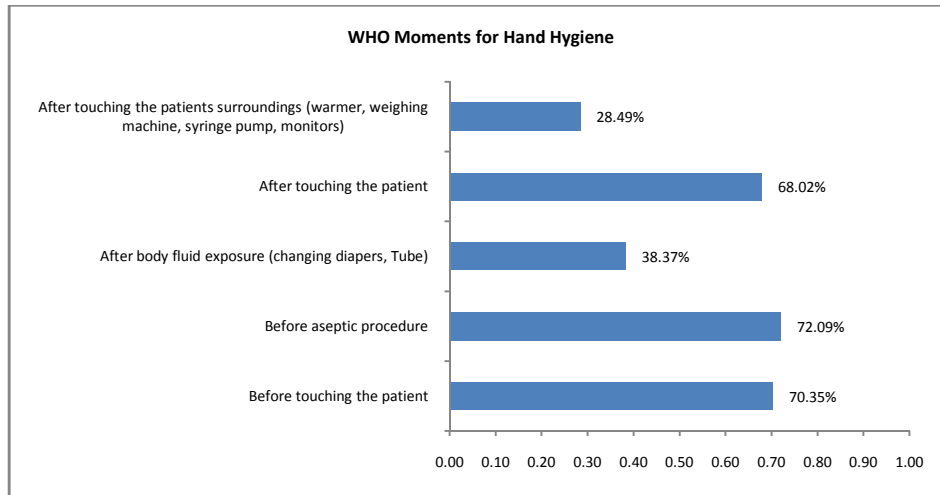
Data was collected, processed, and analyzed.

RESULTS

172 HCW participated in the study with response rate of 100%. Mean age and years of service were 31.8 and 6.7 years respectively. The average length of work at a facility was 6.7 years. Of total 172 participants from the Doctors were (37.7%), Nursing staff (41.2%) and Ancillary staff (20.9%).

Table 1:

Hand Hygiene topic	Sub topic	Correct responses (Out of 172)
5 moments of Hand Hygiene	Before touching the patient	121(70.35%)
	Before aseptic procedure	124(72.09%)
	After body fluid exposure (changing diapers, Tube)	66 (38.37%)
	After touching the patient	117(68.02%)
	After touching the patients surroundings (warmer, weighing machine, syringe pump, monitors)	49(28.49%)
Precautions for Surgical Hand wash	Removal of Accessories (ornaments, threads, wrist watch)	132(76.74%)
	Care of Nails: Trimming, removal of artificial nails, nail paints	60(34.88%)
	Half sleeve aprons	65(37.79%)
	Elbow operated tap	85(49.42%)
	Not to touch fomites (mobile, pen, case paper, door knobs) after hand wash.	71(41.28%)
Method	6 steps recommended	
	I. Palm to palm	170(98.84%)
	II. Back of hands(Right palm over left dorsum with interlaced fingers and vice versa)	160(93.02%)
	III. Fingers and knuckles(Backs of fingers to opposing palms with fingers interlocked)	107(62.21%)
	IV. Thumbs(Rotational rubbing of left thumb clasped in right palm and vice versa)	111(64.53%)
	V. Finger Tips(Rotational rubbing, backwards and forwards with clasped fingers of right hand in left palm and vice versa)	108(62.79%)
	VI. Palm to palm with fingers interlaced	145(84.30%)
Use of Alcohol based Hand rub	Duration > /= 1 min	102(29.65%)
	6 steps recommended	
	I. Palm to palm	162(94.19%)
	II. Back of hands (Right palm over left dorsum with interlaced fingers and vice versa)	145(84.30%)
	III. Fingers and knuckles (Backs of fingers to opposing palms with fingers interlocked)	88(51.16%)
	IV. Thumbs (Rotational rubbing of left thumb clasped in right palm and vice versa)	84(48.84%)
	V. Finger Tips (Rotational rubbing, backwards and forwards with clasped fingers of right hand in left palm and vice versa)	90(52.33%)
VI. Palm to palm with fingers interlaced	106(61.63%)	
	Duration > /= 30 seconds	48(27.91%)



1. All five Indications of hand wash were enumerated by only 9.
2. Most commonly missed moment of Hand Hygiene was “After touching patients’ surroundings, monitors”.
3. Only 5 could enumerate all precautions to be taken for surgical hand wash.
4. Most commonly missed precaution was “Care of Nails: Trimming, removal of artificial nails, nail paints”
5. Most commonly missed step during hand wash was “fingers tips and knuckles” while that missed during Hand rub was “Thumbs”.
6. All six steps of Hand wash were demonstrated by 60(34.88%).

DISCUSSION

All categories of HCW were included in the study, as directly or indirectly involved in newborn care, irrespective of education, experience and expertise. It is expected that HH is known to any person entering the nursery¹. Assessment of hand hygiene technique¹, timing and compliance can be judged better by direct

observation of different HCW types. Hand hygiene compliance was 41.7% before procedure, in study by Korniewicz DM *et al*¹ and Erasmus V *et al*¹. Staff education is a key element of all multimodal approaches and requires relatively limited efforts. It is now recognized that the basic principles of infection control including “Universal Precautions” should be included in the curricula of medical, nursing, and other healthcare professions. Students are bound to develop faulty hand hygiene practice if the curriculum was not enforced with hand hygiene concepts and skills. One such series is reported by Anwar *et al*¹ from a leading medical training center in Pakistan where only 17% of interns and postgraduate medical students were aware of WHO recommendations on hand hygiene and only 4.7% reported to observe correct hygiene before having direct contact with the patients. In our study 2.9% were observed to have correct HH knowledge, which may be comparable to Anwar *et al* considering mixed population of HCW in our study. It is for this lower awareness, a valid reason that the Hygiene Liaison Group, UK, strongly advocates teaching elementary hygiene practices at medical schools. Even in developed countries, hand

hygiene may not get adequate coverage as has been shown by Mann and Wood who examined the infection control knowledge of third year medical students at the University of Birmingham Medical School in UK using a semistructured questionnaire which included a hand hygiene component. The mean hand hygiene knowledge score was 52.3%, while 58% did not know the correct indications for the use of alcohol hand rub. In our study 5.23% knew all Five Moments of HH. 71.2% knew 4 out of 5 indications. The most commonly missed indication was ‘After touching patients surroundings, viz, monitors’. In a study by Sarah J. Middlemas¹ the postgraduate year-1 residents’ demonstration of correct HH on completion of an aseptic procedure, was found to be 18%. In our study 34.8% demonstrated correct methodology of HH.

LIMITATION OF THE STUDY

This was a pilot study in a limited population of HCW. In this study, Awareness and Knowledge about barrier Nursing, wearing gloves (Indications, methodology, precautions) was not tested. And assessment was not possible at the point of care.

CONCLUSION

The hand hygiene awareness among the HCW was found to be very low. Six steps of Hand Hygiene though performed correctly by sizable number of respondents would not be effective considering the missed out precautions.

RECOMMENDATION

Assessing the gap in knowledge, training and re-evaluation should be a continuous repetitive process, to be performed biannually as per the WHO guidelines (2009) for HH, in all hospitals. Active surveillance of Health Care Associated Infections (HCAI)¹ of the institute for improving patient outcome should include “Universal Precautions” and criteria for awareness about hand hygiene in HCW, viz, Number of HH workshops held per year, Number of HCW attending the workshops, similar HH awareness surveillance, supply demand gap of HH products including Alcohol based Hand Rub solution, Soap, water for HH, Sterile Gloves, etc. Being a Tertiary care institute, there is possible intra and interdepartmental shuffling of population of HCW. Hence, inter-

departmental coordination is necessary. Involvement of Mothers in critical care nursing of newborns cannot be overemphasized. Hence, Hand hygiene knowledge and practice in mothers is equally important as is in HCW.

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Source of Support: None Declared
Conflict of Interest: None Declared