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Original Article

Hand washing Compliance - Is It A Reality?

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Abstract:

Background: Transmission of microorganisms from the hands of health care workers is the main source of cross-infection in hospitals and can be prevented by hand washing. The aim of this study was to identify predictors of noncompliance with hand washing during routine patient care. **Materials And Methods:** This is an observational study. The participants in the study were Health Care Workers (HCWs). Doctors, nurses and ward aides working in different wards of the hospital who were observed for compliance with hand washing. **Results:** In 270 observed opportunities for hand washing, average compliance was 63.3%. Noncompliance was highest among doctors followed by nurses. Ward aides were most compliant. **Conclusions:** Compliance with hand washing was moderate. Variation across the hospital ward and type of HCW suggests that targeted educational programs may be useful. Noncompliance suggests that understaffing may decrease quality of patient care.

Key Words: Hand washing, Compliance

Introduction:

Nosocomial infections constitute a major challenge of modern medicine. On an average, infections complicate 7% to 10% of hospital admissions.(1) Transmission of microorganisms from the hands of Health Care Workers (HCWs) is the main cause of nosocomial infections, and hand washing remains the most important preventive measure.(2) Unfortunately, compliance with hand washing is low in most institutions.(3-7) Average compliance is usually below 50%.(3) Many barriers to appropriate hand hygiene have been reported including: hand hygiene agents cause skin irritation and dryness, patient care takes priority over hand hygiene, sinks are inconveniently located or not available, glove use, insufficient time for hand hygiene, high workload and understaffing, inadequate knowledge of guidelines or lack of protocols for hand hygiene, lack of a role model from seniors or peers, lack of recognition of the risk of cross-transmission of microbial pathogens and scientific information showing a definitive impact of improved hand hygiene on nosocomial infection rates, or simply noncompliance.(4-6) Determinates of adequate hand washing in hospitals are not usually investigated. We undertook the present study to investigate the factors associated with noncompliance.

Materials and Methods:

This was an observational study. The authors were the observers who randomly observed the subjects during routine patient care. The study was conducted in December 2004 and the subjects were health care workers working in different units and wards of the hospital which included the Intensive care units (ICUs), general wards and private wards. The observation periods were distributed randomly during the day as well as the night for 30 days. The subjects were unaware that they were being observed. Each subject was observed once and the observation was recorded with the subject number, time of the event, unit or ward and compliance or failure to comply with hand washing. The name, age, gender, years of experience in the hospital, category of employment was obtained by administering an information form to the subject. This also included probable reasons for noncompliance which were categorized as individual level, group level and institutional level. The subjects could tick more than option. Anonymity was preserved for data analysis and no judgment was passed to the subject about the duration or efficacy of the hand washing technique. Hand washing facilities were located throughout the institution. There was also availability of hand washing soap and towels. Dispensers of hand antiseptic solutions were available at high risk areas.

Individual bottles containing alcohol-based preparation were also available at every ward. The potential opportunities for actual performance of hand washing were observed. The categories of HCWs were doctors (n=90), nurses (n=90) and ward aides (n=90). Opportunities of hand washing were all situations in which hand washing is indicated according to guidelines.(2,8) Compliance with hand washing was defined as either washing the hands and wrists with water and plain soap or rubbing with an antiseptic solution. This was the quick hygienic hand disinfection that is advocated in routine care of the patients. In high risk areas and aseptic care of infected patients, a hygienic hand wash was with antiseptic soap and scrubbing hands and wrists for one minute.(2) Departure from the room after patient care without hand washing was regarded as noncompliance. Hand washing was required regardless of whether gloves were used or changed. Failure to remove gloves after patient contact or contact between dirty and clean body site on the same patient was considered noncompliance. Predictors were hospital ward, time of the day, professional category, and type of patient care. Statistical analysis was made using Chi-square and Fisher exact test, 95% Confidence Interval.

Results

In the present study we observed 270 hand washing opportunities. The categories of staff were doctors, nurses and ward aides. The total compliance was 63.3%. Hand washing was done by soap in 41 opportunities (71.9%). The remaining 16 (28.0%) opportunities were by use of hand disinfection. Compliance for hand washing differed among the different categories of HCWs. The demographic characteristics of the study population was doctors (n=90), mean age 29.6 years, average years of experience 5.4 years; nurses (n=90), mean age 32.9 years, average years of experience 11.3 years and ward aides (n=90), mean age 34.2 years, average years of experience 12.7 years. Ward aides were significantly compliant with a compliance level of 76.7% (95% CI=63.38-81.38) followed by nurses 66.7% (95% CI=56.42-75.55). Doctors showed least compliance of 46.7% (95% CI=36.71-56.90). Compliance differed in different wards. There was 54.3% compliance in the general wards as compared to 45.6% in the intensive care units. Females were more 68.4% compliant as compared to males who were 31.5% compliant. Compliance was better during the night 59.6% when compared to 40.3% during the day. The observed risks for noncompliance with hand hygiene are found in Table 1.

Table 1: Risk Factors For Noncompliance To Hand Hygiene

Being a doctor
Male sex
Working in intensive care units
Working in the morning shift

Self reported reasons for noncompliance are given in Table 2. The reasons were classified into individual level, group level and institutional level.

Table 2: Reasons For Noncompliance To Handwashing

Individual Level			
	Doctors	Nurses	Ward Aides
Lack of education	80.0%	40.0%	30.0%
Lack of experience	10.0%	20.0%	10.0%
Being a doctor	80.0%	-	-
Male sex	40.0%	-	40.0%
Lack of knowledge of guidelines	70.0%	60.0%	40.0%
Being refectory non-complier	30.0%	10.0%	20.0%
Group Level			
	Doctors	Nurses	Ward Aides
Lack of education	50.0%	80.0%	100.0%
Working in critical care	50.0%	60.0%	60.0%
High work load	80.0%	90%	90.0%
Downsizing/understaffing	70.0%	90.0%	90.0%
Lack of encouragement	80.0%	70.0%	80.0%
Lack role model from senior staff	60.0%	70.0%	80.0%
Institutional Level			
	Doctors	Nurses	Ward Aides
Lack of written guidelines	100.0%	100.0%	100.0%
Lack of suitable hand hygiene agents	100.0%	100.0%	100.0%
Lack of tradition of compliance	100.0%	100.0%	100.0%
No suitable rewards	100.0%	100.0%	100.0%

Discussion:

Our study confirms that the primary problem with handwashing is the laxity of practice.(3-7) During routine patient care, HCWs disinfected or washed their hands in about half the indicated instances. Studies previously conducted on compliance showed a variation in compliance among the different categories of HCWs.(3) The present study indicated that ward aides complied by 76.7% which is significant. A probable reason for the significant compliance level among ward aides could be because they are under constant scrutiny. Doctors on the other hand showed low compliance levels of 46.7%. There has also been some concern about the substitution of glove use for handwashing.(9,10) This could contribute to the numbers of Nosocomial infections. Studies have shown that high demand for handwashing which reflects high workload was associated with low compliance.(11) Opportunities for handwashing were much more frequent during busier times of the day and during critically ill patient care. The results confirm reports by HCWs that busyness substantially reduces handwashing.(6,9,12) Understaffing of hospital wards decreases compliance and therefore increases the risk of nosocomial infections.(13,14) Voss A et al., 1997 studied the time taken by HCW to walk to the sink, wash their hands and return to the patient took about a minute.(15) If 40 opportunities to wash hands occur per hour of care, the total time spent washing hands becomes prohibitive. In such cases 'no time for handwashing' is more a reality than an excuse. Therefore it becomes necessary to advocate bedside hand sepsis in areas of high risk.(16) Noncompliance with handwashing is a substantial problem in a hospital setting. From the responses indicated by the HCWs, it becomes evident that a behavioral change is warranted. It involves a combination of education, motivation and system change. The factors necessary for change include dissatisfaction with the current situation, the perception of alternatives and the recognition, both at the individual and institutional level, of individual's ability and potential to change. While the institutional level of involvement includes education and motivation, the individual level and group level necessitate primarily a system change. This suggests that interventions aimed at improving

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handwashing practices may be more effective if they are focused on selective wards, categories of HCWs, or patient care situations.

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