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Assessment of Knowledge, Attitude and Practice of Hand Washing Among Health Care Workers in a Tertiary Care Hospital

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ABSTRACT

Background and Objectives: Health care workers hands are exposed to infectious agents acquired from the patients. Many of these potentially harmful micro-organisms pose an increased risk of cross transmission between the patients and also to the health care workers.. A simple and an effective hand hygiene is the leading strategy to ensure personal as well as patients safety and ultimately reduces the burden of infection in a health care facility. The aim of the study was to assess the knowledge, attitude and practice of hand washing among different categories of health care providers in our tertiary care hospital.Materials and methods:A self-administered questionnaire was issued to a total of 200 health care workers which included 50 doctors, 50 nurses, 50 medical Students and 50 lab technicians. The KAP Scores were calculated and according to the score the grades poor fair good and excellent were given.Results:The results of the study indicated that health care providers had reasonable knowledge about hand washing and the risk of nosocomial infections, but suboptimal practices especially with hand-drying. Their attitude towards hand hygiene is also not appreciable.Conclusion: The Health Care Workers have to build a positive attitude that Hand Hygiene is an important part of their work in preventing the risk of cross transmission of potentially harmful multi drug resistant nosocomial pathogens. Proper measures have to be taken to provide proper hand drying facilities, reduce work load and organize training on infection control on a regular basis.

KEYWORDS : Health care workers, Hand hygiene, Knowledge, attitude and practice of hand washing

Introduction

Modern medicine still has to contend with the major problem of infections resulting from patient care. Despite considerable evidence that appropriate hand hygiene is the leading measure to reduce cross-infection, compliance remains notoriously low among health-care workers. In high-demand situations, hand cleansing with an alcohol-based hand rub (ABHR) solution seems to be the most practical means of improving compliance. It requires less time, acts faster, irritates hands less often, and is superior to traditional hand washing [1]

Bacteria recovered from the hands could be divided into two categories, namely transient or resident. The resident flora consists of *Staphylococci* followed by *Coryneform* bacteria. Transient flora, which colonizes the superficial layers of the skin, is more amenable to removal by routine hand washing. It includes pathogenic *Staphylococcus aureus* and gram-negative bacilli [2] They are often acquired by health care workers during direct contact with patients or contaminated environmental surfaces adjacent to the patient, and are the organisms most frequently associated with Health Care-Associated Infections (HCAIs)

The reasons for noncompliance to hand washing include lack of awareness and knowledge among health care workers (HCWs)about the importance, techniques and quality of hand washing. Other factors are low staff to patient ratios, allergies to hand washing products, insufficient supply of materials and resources required for good hand hygiene maintenance. Attitude is a significant predictor of intention to perform hand hygiene.

Improved compliance with hand washing has been shown to be associated with significant decrease in overall rates of hospital acquired infection[3]The study was conducted to assess the knowledge, attitude and practice (KAP) of hand washing among different categories of health care providers in the hospital, to identify the hand drying methods commonly used by them and to identify the factors which motivate ,facilitate or hinder hand washing.

Material and Methods:

Study Area and Design:

This was a cross sectional descriptive study, designed to assess the knowledge, attitude and practice of hand washing and hand drying methods from April 2014 to September 2014 at Tirunelveli Medical College, Tirunelveli, Tamil Nadu and to identify the factors which motivate, facilitate or hinder proper hand washing and hand drying among different categories of health care workers in a tertiary care hospital. The study protocol was carried out after approval by the Institutional Scientific and Ethics Committee.

Data collection:

A self-administered questionnaire was issued to a total of 200 health care workers which included 50 doctors, 50 nurses, 50 Medical Students and 50 Lab Technicians. The KAP Scores were calculated and the respondents were divided into various grades. Each point was given to the 20 knowledge questions 5 attitude and 5 practice questions. The total points was thus 30. According to the score the grades poor fair good and excellent were given as follows.

- 0-14 - poor
- 15-23 – Fair
- 24-26 – Good
- 27-30 – Excellent

Results:

The study group included 50 doctors ,50 nurses, 50 medical students and 50 lab technicians. The mean age of the doctors was 29.18, nurses 29.60, medical students 19.46, lab technicians 25.18.

Among doctors 38% were males 62 % were females, among nurses all were females, among medical Students 54% were males and 46%

were females, among lab technicians 18 % were males, 82% were females.5% of the doctors, 22% of Medical students had excellent KAP scores. 26% of doctors, 36% of nurses, 10% of medical students, 32% of lab technicians had good KAP scores.. 56% of doctors, 64% of nurses, 42% of medical students 60% of lab technicians had fair KAP scores. About 8% of doctors, 26% of medical students, 8% of lab technicians had poor KAP scores. **Table 1** shows the KAP scores among the different groups of health care workers.

A maximum number of doctors (84%) nurses (74%) Lab technicians (68%) and Medical Students (46%) felt guilty when they omitted hand hygiene.39 doctors (78%), 38 nurses (76%), 38 medical students (76%) and 45 lab technicians (90%) used one of the wrong methods of hand drying after hand washing with a soap**.(Table 2)**70% of doctors,46% of nurses,34% of medical students and 30% of lab technicians had attended a formal training in hand washing.84% of doctors,44% of nurses,44% of medical students and 84% of lab technicians regularly use an Alcohol Based Hand Rub(ABHR). The percentage of doctors and lab technicians who used ABHR was equal.

Discussion:

Hand hygiene is the single most important and a cost-effective strategy to prevent Health care-Associated infection (HCAI) [4]. With the emergence of antibiotic-resistant organisms, the importance of hand hygiene within the hospitals has re-emerged as a priority for the health care providers [5].

To assess this issue, updated guidelines intended to stimulate improvement in hand hygiene practices have been developed [6] [7] and one of such efforts is the introduction of evidence-based concept of "My five moments of Hand Hygiene" by WHO.

These five moments that call for the use of hand hygiene include the moment 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 a patient's surroundings[7].

It is a proven fact that organisms that cause nosocomial infections are most commonly transmitted by the hands of health care workers [8]. In spite of being a very simple action, compliance with hand hygiene among health care providers is as low as less than 40% [9].

An effective hand washing is defined as washing of hands with soap and water according to the WHO Alcohol based hand rubs may be used easily in all circumstances except after visible soiling of the hands[7].In this study a total of 200 health care workers including 50 doctors, 50 nurses, 50 medical students and 50 lab technicians were involved. .

It is evident from the Table 1 that about 5% of the doctors, 22% of Medical students had excellent KAP scores. In each group majority of the respondents have fair KAP scores. Among medical students 22% had excellent KAP scores and 26% of them have a poor KAP scores. This clearly establishes the fact that considerable disparity exists even within the same group.

In this study, doctors and nurses have good KAP scores (23-27) and medical students and lab technicians on the whole have average (7-22) KAP scores. This is similar to the study results of Snow et al.,[9] which revealed that Medical Students have a relatively low overall rate of Hand Hygiene status and that of De Mortel et al., who reported that nurses Hand Hygiene Knowledge and self-reported practices are significantly better than that of Medical Students[10]. A majority of health care workers felt guilty when they omitted hand hygiene. This could be considered as a positive attitude .

Regarding the hand drying methods, shockingly a maximum number of HCWs used one of the wrong methods of hand drying after hand washing with a soap. Among them 58% of Medical Students used their personal handkerchiefs to dry their hands after hand hygiene. Drying hands on a hand kerchief which may be used otherwise to swipe of the sweat, used to cover the mouth during sneezing, coughing and nose blowing can absolutely compromise the benefits of hand washing [11]. The correct method of hand drying by using a disposable paper towel was practised by only a few HCWs. The added advantage of using a disposable paper towel is that they dry the skin faster and the friction that they create can help to get rid of germs missed by washing.

Almost all the participants readily identified that wearing a jewellery (ring), damaged skin, a long finger nails can colonise micro-organisms due to the moisture they retain.

At each group level the barriers to the practice of hand hygiene was attributed to the lack of proper education, high workload especially when the wards are fully occupied .Pettit et al., documented that a high workload was associated with poor compliance to hand washing[11].

The limitations of this study is that this self-response to our questionnaire need not correlate with their actual practice. Direct observation of the Hand Hygiene behaviour of Health care workers is the "Gold Standard"[11] [12].

Thus an overwhelming lack of proper and perfect practice among Health care workers was observed despite of reasonable knowledge about the importance of hand hygiene in preventing nosocomial infection. [13]

Conclusion

Every health care worker has to be encouraged to take an alcohol base hand rub gel with them so that it can be used effectively at the right time. The Health Care Workers have to build a positive attitude that Hand Hygiene is an important part of their work in preventing the risk of cross transmission of potentially harmful multi drug resistant nosocomial pathogens.

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Table 1: KAP score among different groups

	PROFESSION	EXCELLENT (27 – 30)	GOOD (23-26)	FAIR (15 -22)	POOR (0-14)
1.	Doctors	5(10%)	13(26%)	28(56%)	4(8%)
2	Nurses	0(0%)	18(36%)	32 (64%)	0 (0%)
3.	Medical Students	11(22%)	5(10%)	21(42%)	13(26%)
4.	Lab Technicians	0(0%)	16(32%)	30(60%)	4(8%)

Table 2 : Hand Drying Methods Used By Health Care Workers

	METHOD OF HAND DRYING	DOCTORS	NURSES	MEDICAL STUDENTS	LAB TECHNICIANS
1.	Common Towel	4	21	7	3
2	Hand to Air dry	28	9	9	27
3.	Disposable Paper Towel	3	10	1	5
4.	Personal Handkerchief	7	8	29	8
5.	Hand drier	3	2	2	1
6.	Others	5	0	2	6
	TOTAL	50	50	50	50

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