

## **Hand Hygiene Practices among Medical Students and Paramedical Staff in a Tertiary Care Hospital, Jamnagar**

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### **ABSTRACT:**

#### **INTRODUCTION:**

Infections acquired in health care setups are among the major causes of death and increased morbidity among hospitalized patients especially in developing countries. Healthcare Associated Infections (HAIs) are a significant cause of patient mortality & morbidity. Hand hygiene is one of the most effective and best ways to prevent Nosocomial infection but unfortunately it is not being practiced effectively by the health care workers, leading to increased incidence of HAIs. Unless hands are visibly soiled, an alcohol-based hand rub is preferred over soap and water in most clinical situations due to evidence of better compliance compared to soap and water. Hand rubs are generally less irritating to hands and, in the absence of a sink, are an effective method of cleaning hands. [4]**OBJECTIVES:**

The objectives of this study were, to assess the knowledge, attitude and practice of hand hygiene practices among medical students and paramedical staff working in a tertiary care hospital, Jamnagar.

#### **MATERIAL AND METHODS:**

A descriptive cross sectional study was conducted at Guru Gobing Singh Hospital, Jamnagar from January 2019 to December 2020. A total of 150 subjects were selected. The target population in the study included Resident doctors, interns, nurses and nursing students who interact with patients regularly. "The World Health Organization (WHO) Hand Hygiene Knowledge Questionnaire for Health-care Workers" was used to assess the knowledge of the subjects.

#### **RESULT:**

The participant's hand hygiene knowledge has been summarized in Table 2. As mentioned in Table 3, about 28% of the participants had a good level of knowledge regarding hand hygiene, 52% had moderate knowledge and 20% had poor knowledge.

#### **CONCLUSION:**

We recommend emphasis on the importance of hand washing before contact with patients and improvement in health care worker to patient ratio. Easy access and adequate supply of hand rub solutions, orientation programs, regular workshops, continuous training, performance feedback and verbal reminders will be needed to sustain adherence to hand hygiene.

**KEY WORDS:** hand Hygiene; hospital acquired infection

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Date of Submission: 06-02-2021

Date of acceptance: 20-02-2021

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### **I. INTRODUCTION:**

Infections acquired in health care setups are among the major causes of death and increased morbidity among hospitalized patients especially in developing countries. Healthcare Associated Infections (HAIs) are a significant cause of patient mortality & morbidity. Hand hygiene is one of the most effective and best ways to prevent Nosocomial infection but unfortunately it is not being practiced effectively by the health care workers, leading to increased incidence of HAIs. Microorganisms responsible for Healthcare Associated Infections can be bacteria, viruses, fungi and parasites. HAIs can be caused either by microorganisms that are already present on the patient's skin and mucosa (endogenous) or by microorganisms transmitted from another patient or health-care worker or from the surrounding environment of the healthcare setup (exogenous).

Hand hygiene is one of the most important healthcare issues worldwide and it is the most cost-effective and practical measure to reduce the incidence of healthcare associated infection (HCAIs) and the spread of antimicrobial resistance. These infections are the most common adverse events resulting from a stay in the

hospital affecting approximately 5%–10% of hospitalized patients in the developed world, and the burden is larger in underdeveloped nations. [1]

However, it has been stated that at least 20% of all are avoidable through infection-control measures applied under normal working conditions.[1] Of these measures, hand hygiene is frequently cited as the single most important means of preventing the transmission of infectious organisms. Despite the relative simplicity of this procedure, adherence to hand washing recommendations is unacceptably low, usually well below 50%. [2] Adherence to hand hygiene recommendations is determined by awareness, availability of hand hygiene agents, workload, kind of working environment and personal preference.

Five Moments for Hand Hygiene has emerged from the WHO Guidelines on Hand Hygiene in Health Care in2009, to add value to any hand hygiene improvement strategy. Not only does the Five Moments align with the evidence base concerning the spread of HAI but it is interwoven with the natural workflow of care and is designed to be easy to learn, logical and applicable in a wide range of settings. [3] The 5 Moments of Hand Hygiene list important moments for a healthcare worker to wash their hands, including: Cleaning hands before touching a patient, before a procedure, after a procedure or exposure to bodily fluids, after touching a patient directly and after touching patient’s surroundings. [3] Unless hands are visibly soiled, an alcohol-based hand rub is preferred over soap and water in most clinical situations due to evidence of better compliance compared to soap and water. Hand rubs are generally less irritating to hands and, in the absence of a sink, are an effective method of cleaning hands. [4]

The objectives of this study were, to assess the knowledge, attitude and practice of hand hygiene practices among medical students and paramedical staff working in a tertiary care hospital, Jamnagar.

## II. MATERIAL & METHODS:

### Research design and setting

A descriptive cross sectional study was conducted at Guru Gobing Singh Hospital, Jamnagar from January 2019 to December 2020.

### Sampling

A total of 150 subjects were selected. The target population in the study included Resident doctors, interns, nurses and nursing students who interact with patients regularly.

### Data Collection

“The World Health Organization (WHO) Hand Hygiene Knowledge Questionnaire for Health-care Workers” was used to assess the knowledge of the subjects.

The questionnaire contained questions on the participants’ age, gender, profession, year of the course, formal training in HH and 27 multiple choice and "yes" or "no" questions to assess hand hygiene knowledge. For each correct answer one point was considered, and an incorrect answer was given zero. Overall scores were expressed in percentage; so that an overall score of >75% was considered as good, 50–74% as moderate and <50% as poor knowledge. [5]

Ethical approval was obtained from the Ethics and Research Committee of the hospital. Formal consent was obtained from the subjects prior to administration of questionnaire.

## III. RESULTS:

A total of 150 hospital staff/medical students were invited to participate in this study. The respondents included 62 residents, 38 interns, 32 nurses and 18 nursing students who were working in emergency wards, general medicine/surgery wards or intensive care units (ICUs). Demographic information is summarized in Table 1.

The participant’s hand hygiene knowledge has been summarized in Table 2. As mentioned in Table 3, about 28% of the participants had a good level of knowledge regarding hand hygiene, 52% had moderate knowledge and 20% had poor knowledge.

Variable		(%)
Gender	Male	54
	Female	46
Job Title	Resident Doctor	41
	Intern	25
	Nursing Staff	21
	Nursing Student	12
Hospital Unit	Emergency Ward	25
	Medicine Ward	28
	Surgery Ward	23
	ICU	24

**Table 1. Demographic information of participants**

Knowledge statements (correct responses)	Resident Doctor (%)	Intern (%)	Nursing Staff (%)	Nursing Student (%)	
Which of the following is the main route of the transmission of potentially harmful germs between the patients? (Healthcare workers hands when not clean)	75	52	70	35	
What is the most frequent source of germs responsible for healthcare associated infections? (Germs already present on or within the patient)	74	62	69	40	
Hand hygiene actions that prevent the transmission of germs to the patient?	52	60	76	22	
Which of the HH actions prevents the transmission of germs to the healthcare worker? (After touching a patient, after a risk of body fluid exposure, After exposure to the immediate surroundings of a patient)	62	56	74	36	
Which of the following statements on alcohol-based hand rub and hand washing with soap and water are true?	Hand rubbing is more rapid for hand cleansing than hand washing (true)	49	70	52	48
	Hand rubbing causes skin dryness more than hand washing (false)	56	52	68	48
	Hand rubbing is more effective against germs than hand washing (false)	75	52	49	58
	Hand washing and hand rubbing are recommended to be performed in sequence (false)	68	60	62	55
What is the minimal time needed for alcohol-based hand rub to kill most germs on your hands? (20 s)	88	54	71	60	
Which type of HH method is required in the following situations?	Before palpation of the abdomen (rubbing)	82	44	56	44
	Before giving an injection (rubbing)	68	42	69	42
	After emptying a bed pan (washing)	79	49	58	51
	After removing the examination gloves (rubbing/washing)	52	70	59	47
	Making the patients bed (rubbing)	55	53	48	60
	After visible exposure to blood (washing)	78	48	71	55
Which of the following should be avoided, as associated with increased likelihood of colonization of hands with harmful germs?	Wearing jewelry (yes)	62	62	65	48
	Damaged skin (yes)	86	60	55	49
	Artificial fingernails (yes)	55	49	58	57
	Regular use of the hand cream (no)	75	70	48	41

**Table 2. Hand Hygiene knowledge of the study participants. Data presented in “(%)”**

Hand Hygiene Knowledge	Total Participants (%)
Good	28%
Moderate	52%
Poor	20%

**Table 3. The comparison of the participants' knowledge level**

#### IV. DISCUSSION:

In our study about 28% of the participants had a good level of knowledge regarding hand hygiene, 52% had moderate knowledge and 20% had poor knowledge. Findings in this study were consistent with the finding in similar studies by Ekwere T, Okafor et al, Raman S. et al, Abd Elaziz KM et al. [6,7,8]

Good/moderate level of knowledge among students and health care workers may be because of the increased level of awareness, regular training programs and workshops conducted by the hospital.

## V. CONCLUSION:

Health care workers in Guru Gobind Singh Hospital, Jamnagar have moderate knowledge and attitude towards hand hygiene. We recommend emphasis on the importance of hand washing before contact with patients and improvement in health care worker to patient ratio. Easy access and adequate supply of hand rub solutions, orientation programs, regular workshops, continuous training, performance feedback and verbal reminders will be needed to sustain adherence to hand hygiene.

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