

**Original article:**

## **KAP STUDY OF HAND HYGIENE PRACTICES AMONG INTERNS DURING COVID19 OSMANIA MEDICAL COLLEGE, HYDERABAD**

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### **Abstract:**

**Introduction:** Hand hygiene being a simple action, compliance among health care workers is < 40%.<sup>1</sup> one such effort is introduction of “my moments for hand hygiene.”

**Aim & Objective:** To assess the Knowledge, Attitude and Practise of hand hygiene practices among interns.

**Material & Methods:** Study was conducted during Covid19 period (April to June 2020.) A questionnaire based on WHO’s concept of “Five Moments for Hand Hygiene” was used to evaluate awareness of indications for hand hygiene and compliance was observed during Objective Structured Clinical Examination (OSCE) sessions.

**Observations & Results:** 105 interns were taken for the study. 66 males (63%) and 39 females (37%) participated voluntarily. 5 interneers three males and two females have not cooperated during the study.

**Discussion:** 57.3% of positive indications for hand hygiene were correctly identified & 42.53% students were not sure about these moments which had similar findings with Mann and Wood<sup>2</sup>.

**Conclusion:** Serious efforts are needed to improve hand hygiene practices among interns and needs to be stressed upon during under graduation.

**Key Words:** COVID 19, Hand hygiene.

### **Introduction:**

Hand hygiene serves many purposes in the health care setting<sup>4</sup>. It prevents both endogenous and exogenous infections in patients, contamination of the hospital environment with potential pathogens, and cross-transmission of microorganisms between patients. When used in conjunction with the appropriate protective equipment, it also protects health care workers from the hazards of occupational infections. Health-care associated infections are a threat to patient safety and the most Common adverse events resulting from a stay in the hospital. Approximately 5 to 10% of hospitalized patients in the developed world acquire such infections, and the burden of disease is even higher in developing countries. Proper use of hand hygiene is a critical to the prevention of these infections, but compliance among health care workers is most often below 40%.<sup>1</sup>

Indications for hand hygiene are clearly defined by authoritative bodies, including the Centers for Disease Control and Prevention<sup>3</sup> and the World Health Organization (WHO).<sup>1</sup> To better

understand these indications, it is necessary to have a knowledge of the basic principles of microbial pathogen cross-transmission in the health care setting. The skin and mucous membranes of humans are colonized by various microbial species. When hospitalized, patients gradually shed these microorganisms onto inanimate objects in their immediate surroundings (e.g., bed linens and bedside furniture). Consequently, hospitals contain a multitude of microbial environments. Some, dubbed “patient zones,” consist of a patient and the patient’s immediate surroundings. Others, such as corridors and public areas, are also colonized with microorganisms as a result of contamination by health care workers, patients, and even visitors. Cross-transmission of potential pathogens from one environment to another occurs mainly through health care workers’ hands.

Hand hygiene should also be performed just after leaving the patient and before touching any object located outside the patient zone. Completion of this step will limit the risk of germ dissemination to the health care environment. Since the patient’s immediate surroundings are also contaminated by the patient’s skin flora, contact with objects located in the patient’s environment, such as a monitor, bedside table, or bed rail, must be followed by the use of hand hygiene even if there is no direct contact with the patient.

Mann and Wood (2006) examined the infection control knowledge of third year medical students using a semi-structured questionnaire which included a HH component. The mean HH knowledge score was 52.3%. Five percent of students reported receiving no instruction on HH and 58% did not know the correct indications for the use of alcohol-based hand gel. The studies conducted by Karaffa<sup>5</sup> (1989), Sangkard (1991), and Mann and Wood (2006) all relied on self-report but did not use a means to detect socially desirable responding (van de Mortel 2008)

**Aim and Objective:**

- To assess the Knowledge, Attitude and Practice of hand hygiene practices among interns/house surgeon’s of Osmania Medical College, Hyderabad.

**Materials and Methods:**

- The study was conducted during the Covid19 period between April-June 2020 among 105 interns attending Community Medicine postings during internship in Osmania Medical College, Hyderabad.
- A questionnaire based on World Health Organization’s concept of “Five Moments for Hand Hygiene” was used to evaluate the awareness of the indications for hand hygiene and compliance was observed during Objective Structured Clinical Examination (OSCE) sessions.
- Randomly 105 interns were taken for the present study. 66 males (63%) and 39 females (37%) participated voluntarily. 5 internees three males and two females have not cooperated during the study.

### Observations & Results:

In the present study 63 male and 37 female interns were subjected to the objective structured detailed questionnaire. On an average 62.2% of males were practicing moments of hand hygiene and 37.46% of male interns are not practicing moments of hand hygiene. Out of 37 female interneers on an average 52.4% of female interneers are practicing moments of hand hygiene and 47.6% of female interneers are not practicing moments of hand hygiene.

Most (80.9%) of the male interneers practicing moments of hand hygiene before sample collection. Only 19.1% of male interns are not practicing moments of hand hygiene. In contrary female interns only 45.9% are practicing moments of hand hygiene before sample Collection and 54.1% are not practicing moments of hand hygiene before sample collection. Many (76.1%) of the male interneers are practicing moments of hand hygiene after sample collection. Only 23.9% of male interns are not practicing moments of hand hygiene after sample collection. Among female interns 45.9% are practicing moments of hand hygiene after sample collection and 54.1% are not practicing moments of hand hygiene after sample collection. Whereas only 33.3% are practicing moments of hand hygiene after interacting with patients and 65.07% are not practicing moments of hand hygiene after interacting with patients among male interns. Among female interns 43.2% are practicing moments of hand hygiene after interacting with patient and 56.8% are not practicing moments of hand hygiene after interacting with patients.

- The average awareness regarding the positive indications of hand hygiene was 57.3%. Rest of the 42.53% of interns was either not sure or unaware of the indications of hygiene.

Figure 1)

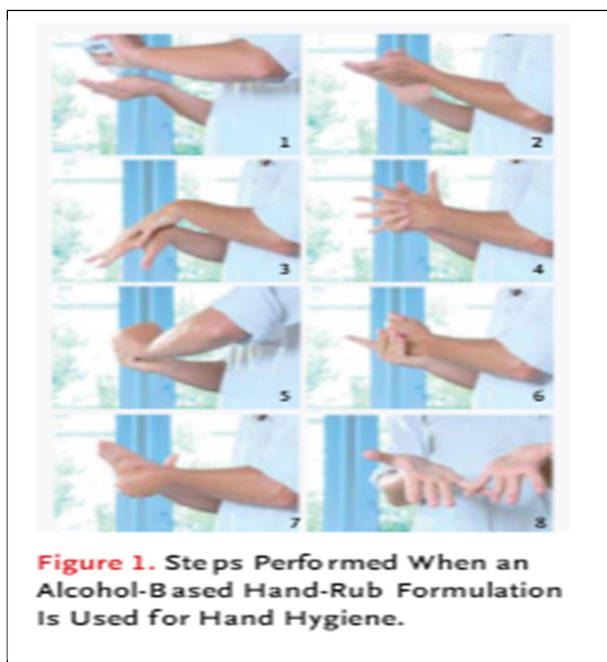


Table 1)

Moments of hand hygiene	Males (63) Yes	No	Females (37) Yes	No
Before examination	54 (85.7%)	9 (14.3%)	27 (72.9 %)	10 (27.1%)
Before sample collection	51 (80.9%)	12(19.1%)	17 (45.9%)	20 (54.1%)
After sample collection	48 (76.1%)	15(23.9%)	17 (45.9%)	20 (54.1%)
After interacting with patient	21 (33.3%)	41(65.07%)	16 (43.2%)	21 (56.8%)
After touching patients belongings	22 (34.9%)	41(65.07%)	20 (54.1%)	17 (45.9%)
Average	62.2%	37.46%	52.4%	47.6%

**Discussion:**

A possible limitation of a self-report questionnaire is the reliability of participants' answers on items with a high social desirability value (van de Mortel 2008). Self-reported scores are susceptible to distortion due to self-deception or faking by participants on items that are linked to social approval (King and Bruner 2000). In our study, 57.3% of positive indications for hand hygiene were correctly identified & 42.53% students were either unaware or not sure about these moments which had similar findings with Mann and Wood<sup>2</sup> reported 56%.

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. The reasons given by authors for these apparently paradoxical results include limited patient care responsibilities and better undergraduate education and motivation of students

on infection control issues and decreasing awareness or conviction with increasing schedules and patients responsibilities as healthcare workers attain seniority.

There are two recognized techniques for performing hand hygiene: hand rubbing with an alcohol-based hand-rub formulation and hand washing with soap and water. To perform hand rubbing, apply a palm full of alcohol-based hand rub to a cupped hand and rub hands together to cover all surfaces. Then rub hands again, palm to palm. To reach the dorsal interdigital area of the hand, rub the fingers of one hand over the dorsum of the other hand and interlace the fingers. Repeat the procedure on the palmar side of the hands to reach the palmar interdigital area. To cleanse the dorsal aspect of the distal phalanges, rub the back of the fingers across the palm of the other hand with fingers interlocked. Decontaminate fingertips and the subungual region by rotating them in the palm of the other hand. To cleanse the base of the thumb, clasp it in the palm of the other hand and rotate the thumb. Each sequence should be repeated on both hands. The entire procedure should take 20 to 30 seconds to complete (Fig. 1). Hands should be rubbed until dry to ensure maximum efficacy. Complete drying of the hands in less than 20 seconds is usually due to insufficient application of the product.<sup>1,4</sup>

Indications for hand hygiene are clearly defined by authoritative bodies; including the Centres for Disease Control and Prevention and the World Health Organization (WHO). To better understand these indications, it is necessary to have knowledge of the basic principles of microbial pathogen cross-transmission in the health care setting. The skin and mucous membranes of humans are colonized by various microbial species. When hospitalized, patients gradually shed these microorganisms onto inanimate objects in their immediate surroundings (e.g., bed linens and bedside furniture). Consequently, hospitals contain a multitude of microbial environments. Some, dubbed “patient zones,” consist of a patient and the patient’s immediate surroundings. Others, such as corridors and public areas, are also colonized with microorganisms as a result of contamination by health care workers, patients, and even visitors. Cross-transmission of potential pathogens from one environment to another occurs mainly through health care workers’ hands.

To prevent cross-transmission from one patient to another, health care workers must perform hand hygiene immediately before touching a patient or when entering a patient zone. The correct moment to perform hand hygiene before touching a patient is critical. Hand hygiene should be performed close to the site of care to avoid recontamination if hands come into contact with an object distant from the patient, such as a doorknob. Hand hygiene must be performed between the last hand-to-surface contact with an object located outside the patient zone and the first within the patient zone ideally, immediately before touching the patient. Hand hygiene should also be performed just after leaving the patient and before touching any object located outside the patient zone. Completion of this step will limit the risk of germ dissemination to the health care environment. Since the patient’s immediate surroundings are also contaminated by the patient’s skin flora, contact with objects located in the patient’s environment, such as a monitor, bedside table, or

bed rail, must be followed by the use of hand hygiene even if there is no direct contact with the patient. Certain body regions must also be kept as free as possible of microorganisms. These include zones of impaired host defense, such as mucous membranes and breaks in skin (e.g., surgical wounds) and sites of invasive device insertion (e.g., vascular or urinary catheters and endotracheal tubes). Microorganisms that colonize the health care worker's hands, the patient's skin, or the immediate surroundings must not be introduced into these zones of lowered immune protection. For these reasons, it is essential to perform hand hygiene immediately before touching non intact skin and mucous membranes and before manipulating invasive devices to prevent colonization that may subsequently lead to infection. Finally, hand hygiene protects health care workers. Some patient care activities expose workers to potentially infectious body fluids, such as blood or respiratory secretions. To prevent infection and colonization, hand hygiene must be performed immediately after completing a task associated with a risk of hand exposure to body fluids, even in the absence of visible soiling and when gloves have been used. According to the WHO, the 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 patient surroundings.

**Conclusion:**

57.3% of positive indications for hand hygiene were correctly identified & 42.53% students were not sure about these moments.

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