



**ORIGINAL RESEARCH PAPER**

**Pharma**

**HAND HYGINE AND HOSPITAL ACQUIRED INFECTIONS – A PROSPECTIVE OBSERVATIONAL STUDY AMONG MEDICAL STUDENTS**

**KEY WORDS:** hand hygiene , medical students , infection control, hospital

<b>Dr. R. Rijayarani</b>	M.D DLO, Assistant Professor, Department Of Pharmacology , Government Sivagangai Medical College ,Sivagangai,Tamilnadu.
<b>Dr. R. Atul Vigneshwar*</b>	M.D, Assistant Professor , Department Of Radiation Oncology , Government Pudukottai Medical College Hospital, Pudukottai, Tamilnadu. *Corresponding Author
<b>Dr.S.Vasanth</b>	M.D DNB Mnams C.Diab ,Assistant Surgeon , Government Community Health Center,Thirupukuzhi,Kanchipuram,Tamilnadu.

**ABSTRACT**

The most effective way to lower the prevalence of illnesses linked to healthcare are through hand hygiene (HAIs).Despite the simplicity of the processes employed, there is a lack of compliance globally.The purpose of this study was to ascertain medical students' level of hand hygiene knowledge so that suitable action might be taken to encourage compliance. Using the WHO hand hygiene questionnaire, a study on medical students was carried out in June and July 2018 at Bangalore Medical College and Research Institute. 78% of students reported having received hand hygiene instruction, and everyone concurred that such instruction is essential. Hand rubs are regularly utilized in patient care by 85%. Correct responses were given by 33% and 44%, respectively, regarding the 20-second contact time and the least amount of alcohol-based hand rub required to destroy the microbes. Students believed that alcohol-based hand rubs are more effective than hand washes and produce dryness in 63% and 46% of cases, respectively. 58% of people said that washing and rubbing your hands should come first. Nine percent gave the incorrect response when asked if hand rubbing was necessary after visible blood exposure. Posters about hand hygiene are visible at point-of-care, as observed by 93% of respondents. The general level of knowledge on hand hygiene techniques was 65% . In summary, teaching medical students proper hand hygiene is crucial since it lowers the risk of healthcare-associated infections.

**INTRODUCTION**

Health care-associated infections are a serious problem in health care services as they may cause prolonged hospital stay, high mortality, long-term disability, and excess health care costs. Most health care-associated infections can be transmitted from patient to patient via the hands of health care workers. In other words, hand hygiene is recognized as the leading measure to prevent cross-transmission of microorganisms and to reduce the incidence of health care associated infections Hand hygiene is a general term referring to any action of hand cleansing by using water and detergent and/or the use of alcohol-based hand sanitizers for the removal of transient microorganisms from hands It is one of the least expensive and easy to train procedure which can substantially decrease these infections. Despite the relative simplicity of this procedure, compliance with hand hygiene among health care providers is as low as 40%.Numerous studies have shown that adherence to hand hygiene recommendations remains low and that improvement efforts frequently lack sustainability This is may be due to several constraints such as heavy work load, high number of clinical procedures, and skin conditions of health care workers . In developing countries, the prevalence of hand hygiene-associated infections has been found to be as high as 19%. It is commonly observed that in a health care setup, nurses are the most compliant to the practice of hand hygiene; in contrast, the doctors are usually less compliant .In order to improve compliance of the doctor community, medical students ought to be sensitized with aspects of infection control during undergraduate level itself. Despite these concepts have been emphasized, there has been lack in knowledge and practice of hand hygiene among the health care workers.

**AIM:**

This study was undertaken to know the knowledge among the medical students regarding hand hygiene so that appropriate measures can be taken to train them and promote hand hygiene compliance.

**MATERIALS AND METHODS**

This cross sectional and questionnaire based study was conducted in Sivagangai Medical College. The purpose of

the study was explained and informed consent was obtained. A WHO hand hygiene questionnaire comprising of 15 questions (Annexure) was distributed to each participant and asked to answer and return immediately. This Questionnaire comprised of 15 questions which included multiple choice and “yes” or “no” questions. Knowledge was assessed using WHO guidelines on Hand hygiene in health care Each correct answer was given one point, and an incorrect answer zero.The maximum score obtainable for knowledge was 15. The scores were calculated and expressed in percentage. Statistical analysis Data was analysed using Microsoft excel software. Descriptive statistics was used to calculate the percentage of each response given and associations between variables were tested using Chi- square test. The values were mentioned as mean ± Standard Deviation (SD). A score of more than 75% was considered good, 50–74% moderate and less than 50% as poor.

**RESULTS AND DISCUSSION**

**Table no 1**  
**Level of knowledge**

Level of knowledge	percentage
Poor	33
Moderate	65
good	2

Overall 100 medical students were included in the study Only 78% of the students had received formal training in hand hygiene. Almost everyone agreed that it is necessary for them to be trained in hand hygiene practices as it prevents health care associated infections and agreed that observation of hand hygiene compliance is needed. 85% of the students routinely used alcohol based hand rub in the patient care. Only 33% of the students answered correctly that 20 seconds contact time with an alcohol- based hand rub was essential to destroy most micro organisms, 39% answered it to be 10 seconds, 23% answered it to be 1 minute and 5% answered it to be 3 seconds. 44% of the students answered that 3 mL was the minimum amount of alcohol- based hand rub required, 38% answered it to be 5 mL, 15% answered 1 mL and 5% answered it to be 15 mL. 63% and 46% of the students

respectively had misconception that alcohol based hand rub causes dryness and more effective than hand wash. 58% of the students thought hand rubbing and hand washing are recommended to be performed in sequence. 9% of the students answered wrongly that hand rubbing was the method required after visible exposure to blood. 93% have noticed that hand hygiene posters are displayed at point-of-care as reminders The knowledge among the medical students regarding hand hygiene practices was moderate (65%). Only 2% had good knowledge Hands are the main source of transmission of infections during healthcare. Hand hygiene is therefore the most important measure to avoid the transmission of harmful microbes and prevent healthcare-associated infections. Any healthcare worker involved in direct or indirect patient care needs to be concerned about hand hygiene and should be able to perform it correctly and at the right time. In the present study, the level of knowledge about hand hygiene among the medical students was moderate (65%), which was a positive finding. It was seen in accordance with the studies conducted by Nair et al., Kamble et al., Nabavi et al., among the medical students where the level of knowledge was moderate. Majority of medical students (78%) had claimed to have received formal training on hand hygiene and almost everyone agreed that it is necessary for them to be trained in it, which is a good sign of awareness. In the studies by Nair et al., and Kamble et al., 79% and 84.5% of students whereas in Prabhakumar et al., ( and Thakker et al., only 40% and 14.2% of students respectively had received formal training in hand hygiene practices. The present study showed 85% of the students routinely used alcohol based hand rub compared to studies by Kamble VS et al., where only 58.1% used hand rub. In our study, only 33% and 44% respectively answered correctly that 20s and 3 ml as the minimal time and amount of hand rub required to destroy most of the micro organisms on hand. This was similar to the study conducted by Prabhakumar et al., in which 29% and 48% students respectively answered both the questions right. Majority of students (81%) agreed that hand rubbing is more rapid than hand washing. Whereas, Modi et al., reported only 61.4% students agreed for it. 63% of students had misconception that alcohol based hand rub causes more dryness compared to hand washing which was similar to the study conducted by Kamble et al., 54% of students were aware that hand washing is more effective against micro organisms than hand rubbing in comparison with studies by Kamble et al., and Modi et al., (61.8%). 42% of students were aware that hand washing and hand rubbing are not recommended to be performed in sequence which was better than study by Kamble et al., where only 21.8% students were aware of it. Majority of students (91%) knew that hand washing is the required method following visible exposure to blood which was in accordance to majority of studies on hand hygiene. Most of the students (93%) agreed that observation of hand hygiene compliance is needed and they had observed that hand hygiene posters are displayed at point-of-care as reminders it is very much essential to include training in hand hygiene practices both theoretically and practically in the undergraduate level itself, as it helps in reducing the Health-care associated infections in future and to improve the patient care.

**Conflict Of Interest :** Nil

**Funding Support :** Nil

**REFERENCES**

1. Nair SS, Hanumantappa R, Hiremath SG, Siraj MA, Raghunath P. Knowledge, attitude, and practice of hand hygiene among medical and nursing students at a tertiary health care centre in Raichur, India. *ISRN Prevent Med.* 2014; 1: 1-4.
2. Kamble VS, Biradar SM, Takpere A, Reddy S. Knowledge of hand hygiene practices among students of ESIC medical college, Gulbarga, Karnataka, India. *Int J Community Med Public Health* 2016; 3: 94-8.
3. Nabavi M et al., Knowledge, Attitude, and Practices Study on Hand Hygiene

Among Imam Hossein Hospital's Residents in 2013. *Iran Red Crescent Med J.* 2015 October; 17(10):1-8.

4. Prabhakumar D, Chakravarthy M, Nayak S, Hosur R, Padgaonkar S, Harivelam C, et al., Knowledge levels of medical students about hand hygiene. *J Nat Accred Board Hosp Healthcare Providers* 2016; 3: 27-31.
5. Thakker VS, Jadhav PR. Knowledge of hand hygiene in undergraduate medical, dental, and nursing students: A cross sectional survey. *J Family Med Prim Care* 2015; 4: 582-6.
6. Modi et al., Hand Hygiene Practices Among Indian Medical Undergraduates: A Questionnaire-Based Survey. *Cureus* 2017; 9(7): e1463. DOI 10.7759/cureus.1463.