

Original article:

Study to Assess Knowledge, Attitude and Practice of Hand Hygiene among Medical and Nursing Students at Gauhati Medical College & Hospital, Guwahati, Assam

Dr Kumaril Goswami¹, Dr (Mrs.) Rupali Baruah²

Post Graduate Trainee¹, Professor², Department of Community Medicine, Gauhati Medical College, Guwahati, India

Corresponding author: Dr Kumaril Goswami

Abstract

Context: Hand hygiene is recognized as the leading measure to prevent cross-transmission of microorganisms and to reduce the incidence of health care associated infections (HCAI). Millions of patients are affected by health care-associated infections worldwide each year, leading to significant mortality and financial losses for health systems. Despite the relative simplicity of this procedure, compliance with hand hygiene among health care providers is very low.

Aims: Assess knowledge, attitude and practice of hand hygiene among medical and nursing students at Gauhati Medical College & Hospital, Guwahati, India.

Settings and Design: Cross-sectional study is conducted among final year MBBS and final year nursing students of Gauhati Medical College, Guwahati. **Materials and Methods:** Sixty students are selected randomly each from final year MBBS and final year nursing students of Gauhati Medical College & Hospital. Then the knowledge, attitude and practice of hand hygiene among both medical and nursing students are assessed by using pretested, structured and self-administered questionnaire. By using INSTAT GRAPH PAD, p value <0.05 is taken as significant. **Results:** 93% of medical and 88% of nursing students had knowledge on correct method of hand washing, 95% of medical and 96% of nursing students agreed that hand washing is protective to them, 98% of medical and 95% of nursing students used to wash their hands more often after patient contact or bedside procedure. There is no significant difference in practices among medical and nursing students after patient contact or bedside procedure (p>0.05)

Conclusions: Majority of Medical and Nursing Students had good knowledge and attitudes towards hand hygiene and also majority follows the proper hand hygiene practicing procedures. But there is a lack of knowledge and practice regarding all the six steps of hand washing.

Keywords: Hand hygiene, Health care associated infections, Compliance, Questionnaire

Introduction

Hand hygiene is recognized as the leading measure to prevent cross-transmission of microorganisms and to reduce the incidence of health care associated infections (HCAI)¹. Health care associated infections complicate 7-10% of hospital admissions². Though Hand hygiene (HH) is an important measure to prevent HCAI but despite relative simplicity of Hand Hygiene procedures and recommendations; compliance with hand washing is still poor.³ The high prevalence of these infections, as high as 19%, in developing countries poses a challenge to health care providers.⁴

The World Health Organization (WHO) has issued guidelines for procedural hand washing in order to reduce the prevalence of hospital associated infections but lack of knowledge amongst health care workers is associated with poor compliance [5]. An alarming revelation was that compliance was found to be worst before high risk procedures.⁵ Doctors and Nurses constitute the largest percentage of the health care workers (HCW). Nurses are the “nucleus of the health care system”⁶. Because they spend more time with patients than any other HCWs, their compliance with hand washing guidelines seems to be more vital in preventing the disease transmission among patients.

Medical students and nursing students are going to perform their important role as health care worker in preventing disease transmission among patients. In Asia there is a paucity of studies exploring this subject, although the prevalence of health care associated infections is high in this region; especially medical and nursing student’s knowledge of standard precautions is rarely compared. Therefore, it is absolutely essential to investigate and know medical and nursing students’ knowledge, attitudes, and practices about hand washing so that appropriate strategies can be developed to promote hand washing compliance. Present study is aimed to know the Knowledge, Attitude, and Practice of Hand Hygiene among Medical and Nursing Students at Gauhati Medical College & Hospital, Guwahati, India.

Materials and methods:

The study is a cross sectional study which was conducted at Gauhati Medical College and Hospital. This is a tertiary care institute providing patient care to residents from all over Assam and also from neighboring states. The College also provides medical and nursing course. There were 145 final year medical students and 72 final year nursing students enrolled in this college. They were first explained the content and nature of the study. Those who gave consent to participate in the study constituted the sampling frame. Then sixty medical and sixty nursing students are selected randomly from the sampling frame. Knowledge, attitude and practices of hand hygiene among both medical and nursing students were assessed by using a pretested, structured and self-administered questionnaire. Knowledge and practices of hand hygiene including hand drying methods among medical and nursing students were compared and attitudes towards hand hygiene among all those students were also assessed. Data collection was done from 1st August to 30th August, 2015 for a period of one month.

The questionnaire consists of six, six and four number of questions on knowledge, attitude and practice respectively. Assessment of hand drying method and perception of dirty areas of hand were also assessed among medical and nursing students. Data is analyzed by using INSTAT GRAPH PAD. Descriptive statistics was used to calculate percentages for each of the responses given and p value <0.05 is taken as significant.

Results

Of the 120 questionnaires distributed, all the questionnaires were adequately filled and returned. This gave a response rate of 100%, out of which 60 were from final year medical students and 60 were from final year nursing students.

Knowledge:

Majority of medical and nursing students had good knowledge on hand hygiene technique. Among medical students 93% and among nursing students 88% were of the opinion that use of running water with antiseptic soap

is the correct method of hand washing. All the medical students (100%) had knowledge that contaminated hand is a vehicle for transmitting infection. Only 58% of medical students and 70% of nursing students had knowledge on all the six steps of hand washing methods. The percentage of correct responses of the two groups of students to the individual questions on hand hygiene knowledge and the comparison are given in table 1. On applying Chi-square test, no response was found to be statistically significant. ($p > 0.05$)

Table 1: Comparison of knowledge among final year medical and nursing students on each question.

Questions (Answer)	Medical	Nursing	P value
Students (n=60)			
1 Which is the correct method of Hand Washing? (Use of running water with antiseptic soap)	55(93%)	53(88%)	0.54
2 Whether contaminated hand is a vehicle for transmitting infection? (Yes)	60(100%)	58(97%)	0.15
3 Whether effective hand washing should last for minimum 15 seconds?(yes)	43(72%)	37(62%)	0.25
4 What is the impact of nosocomial infection on patient clinical outcome? (High)	57(95%)	55(92%)	0.46
5 What is the effectiveness of hand washing in preventing nosocomial infection? (High)	59(98%)	55(92%)	0.09
6 Are there six steps in proper hand washing method? (yes)	35(58%)	42(70%)	0.18

Attitude:

Majority of medical and nursing students showed positive attitude on hand hygiene technique. The percentage responses of the two groups to the individual questions on hand hygiene attitudes are given in tables 2 and 3. Perception of dirty areas of hand is also assessed among the students and they are represented as bar diagram in figure 1.

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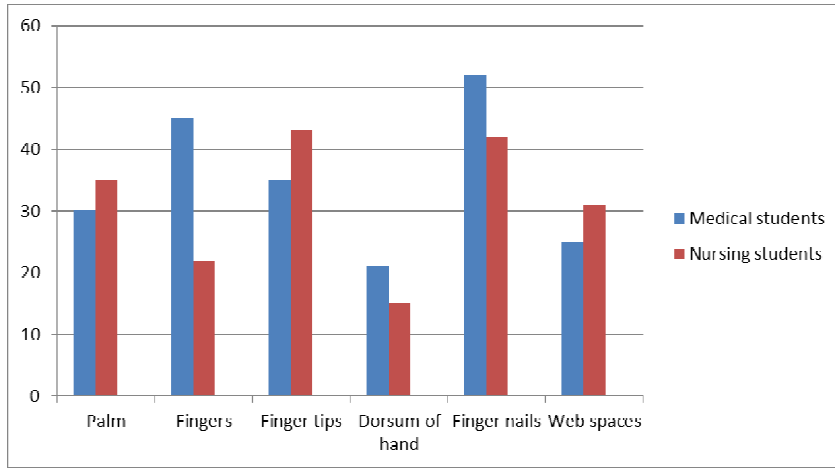
Table 2: Attitudes of medical students towards hand hygiene

Statements	Agree	Disagree	Indifferent	Total
1. Correct hand hygiene practices should be followed at all times	58(97%)	2(3%)	0	60(100%)
2. Hand washing can be protective to health care workers (HCWs)	57(95%)	1(2%)	2(3%)	60(100%)
3. Hand washing should be done when in contact with patients and their surroundings	55(92%)	1(2%)	4(6%)	60(100%)
4. HCWs are motivated to wash their hands because of fear of contracting diseases	49(82%)	6(10%)	5(8%)	60(100%)
5. HCWs should enroll in regular training sessions regarding hand hygiene practices	52(87%)	3(5%)	5(8%)	60(100%)
6. Hand washing can be improved by administrative order and continuous health education	50(76%)	5(8%)	10(16%)	60(100%)

Table 3: Attitudes of nursing students towards hand hygiene

Statements	Agree	Disagree	Indifferent	Total
1. Correct hand hygiene practices should be followed at all times	52(88%)	4(6%)	4(6%)	60(100%)
2. Hand washing can be protective to health care workers (HCWs)	58(96%)	1(2%)	1(2%)	60(100%)
3. Hand washing should be done when in contact with patients and their surroundings	53(89%)	2(3%)	5(8%)	60(100%)
4. HCWs are motivated to wash their hands because of fear of contracting diseases	56(94%)	0	4(6%)	60(100%)
5. HCWs should enroll in regular training sessions regarding hand hygiene practices	49(82%)	3(5%)	8(13%)	60(100%)
6. Hand washing can be improved by administrative order and continuous health education	53(89%)	2(3%)	5(8%)	60(100%)

Figure 1: Perception of dirty areas of hand



Practices:

Majority of medical and nursing students did not follow all the six steps of hand washing practices. The percentage responses of the two groups to the individual questions on hand hygiene practices and the comparison of the two groups are given in tables 4. The hand drying methods after hand washing are also given in table 5. Majority of medical and nursing students used common towel as the hand drying method. On applying chi-square test, difference of hand washing before patient contact and following of six steps of hand washing among medical and nursing students were found to be statistically significant. (p value <0.05)

Table 4: Comparison of correct practicing method among final year medical and nursing students on each question.

Questions (Answers)	Medical	Nursing	p value
1 Washing of hands before patient contact and bedside procedure	48(80%)	36(60%)	0.016
2 Washing of hands after patient contact or bedside procedure	59(98%)	57(95%)	0.31
3 Following of six steps of hand washing 1	4((23%)	24(40%)	0.049
4 Hand drying after hand washing	55(92%)	59(98%)	0.09

Table 5: Hand drying methods among medical and nursing students

Methods	Medical Students	Nursing Students	Total	P Value
1. Common towel	47(78%)	55(92%)	102	0.041
2. Air dry	4(7%)	2(3%)	6	0.402
3. Personal handkerchief	6(10%)	2(3%)	8	0.14
4. Others	3(5%)	1(2%)	4	0.31
Total	60(100%)	60(100%)	120	

Discussion

The above study has revealed that both the medical and nursing students had good knowledge on hand hygiene. This finding is similar to that reported among healthcare staff in ICU of a Multispecialty hospital in India.⁷ Regarding minimum time of 15 seconds for effective hand washing only 72% of medical students and 62% of nursing students had good knowledge on it. Only 58% of medical students and 70% of nursing students had the knowledge of all the six steps of hand washing techniques. On applying statistical test difference of the responses of hand washing knowledge among medical and nursing students was not found to be significant.

A positive attitude towards hand hygiene is also demonstrated in this study. Similar findings have been reported in other study also.⁸ This positive attitude towards hand washing exhibited by the respondents may be attributed to their knowledge of the consequences of poor hand hygiene. Regarding dirty area of hand maximum percentages of students have the perception that finger nail is the dirtiest area of hand followed by finger tips.

Regarding practicing method very few percentage of medical (23%) and nursing (40%) students followed the six steps during hand washing. Regarding hand drying maximum percentage of students used common towel as the hand drying method after hand washing. On applying statistical test significant difference (< 0.05) is seen among medical and nursing students regarding use of common towel as the hand drying method. Many studies have shown that hand drying is as important as hand washing in maintaining a good hand hygiene.^{9,10} A study conducted in Canada to assess the various hand drying techniques revealed that no matter what hand washing agents were used, a higher reduction of contamination was observed when using electric warm air hand dryer than using either disposable paper towel or cloth towel. Likewise, there was a higher reduction of contamination with the use of disposable paper towel than with the use of cloth towel.¹⁰

Conclusion

Health care workers (HCWs) in Gauhati Medical College have good knowledge and attitude towards hand hygiene. But still there is lack of knowledge and practices in few points regarding hand hygiene among the students. Knowledge regarding six steps of hand washing practices is poor. This study shows the importance of improving the current training programs targeting hand hygiene knowledge and practices among medical and nursing students. Hand hygiene training sessions may need to be conducted more frequently for medical students

with continuous monitoring and performance feedback to encourage them to follow correct hand hygiene practices. The World Health Organization (WHO) contributes to this effort through the Patient Safety Program with its First Global Patient Safety Challenge “Clean Care is Safer Care” (CCiSC), launched in 2005 and dedicated to the prevention of HCAI.

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