

Knowledge, Attitude, and Practice of Hand Hygiene among Medical and Nursing Students at a Tertiary Health Care Centre in Bihar, India

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Abstract

Aim: To assess the knowledge, attitude and practices of hand hygiene among the medical and nursing students of our college.

Methodology: The present study was conducted at Indira Gandhi Institute of Medical Sciences, Patna, which is a multispecialty centre. This was a questionnaire based cross sectional study performed between August 2019 and July 2020. The medical and the nursing students willing to take part in the study were included in the study. Knowledge was assessed using 8 questions which included multiple choice and “yes” or “no” questions. Attitudes was measured using 10 statements, where the respondents were asked if they agree or disagree to it. Practice was assessed similarly, using 6 questions. A scoring system was used where 1 point was given for each correct response to knowledge, positive attitudes and good practices. 0 was given for incorrect knowledge, negative attitudes and poor practices. A score of more than 75% was considered “good”, 50-74% “moderate” and less than 50% “poor”.

Results: Out of 210 participants, 160 (76.2%) were medical students and 50 (23.8%) were nursing students. 136 (64.8%) were females and 74 (35.2%) were males. All the participants belonged to final year. On assessing the knowledge questionnaire, 114 (54.3%) participants had good knowledge, 57 (27.1%) had moderate, while 39 (18.6%) had poor knowledge. Maximum of medical and nursing students (90.6% and 90% respectively) believed that they have sufficient knowledge about hand hygiene. 82% nursing students believed that sometimes they have more things to do than hand hygiene and only 47.5% medical students agreed to this. 90% medical students agree that wearing gloves reduce the need for hand hygiene while only 58% nursing students agree to this. Only 51.4% students agree that adhering to hand hygiene practices is easy in the current ICU setup. 190 (90.5%) participants confirms that hand hygiene is an essential part of their role but 52 (24.8%) also confirmed that sometimes they miss out hand hygiene simply because they forget it and 126 (60%) agreed that it is difficult for them to attend hand hygiene courses due to time pressure.

Conclusion: The students had good knowledge on hand hygiene, but attitudes and practices of medical and nursing students were unsatisfactory to that level. The study shows the need for further improvement of the existing hand hygiene training programs to address the gaps in knowledge, attitudes and practices.

Keywords: Infections, hygiene, morbidities, training.

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Introduction

Health care associated infections (HAIs) pose a major threat to the patients' safety worldwide, causing high mortality, long term disability, prolonged hospital stays and excess health care costs. Most of the HAIs are known to spread from person to person through the hands of the health care providers. [1] Simply following an effective hand hygiene protocol in a health care setup can drastically reduce the prevalence of HAIs and may play a major role in curtailing the massive health expenditures involved. [2] Also, there is a potential risk of health-care workers getting colonized or infected by organisms acquired from the patients. Good hand hygiene practices protects both the care givers as well as the patients at the same time. [3]

Effective hand hygiene can lower the prevalence of healthcare associated infections. Unfortunately, the prevalence of these infections continues to rise and poses a challenge to healthcare providers. Healthcare associated infections due to poor hand hygiene has been linked to an unacceptably high level of morbidity, mortality and healthcare costs [4]. In developing countries it's prevalence is found to be as high as 19% [5]. Previous studies have shown that hand hygiene compliance among healthcare workers is generally low [6].

Further increase in compliance is difficult to sustain, although the World Health Organization (WHO) has compiled guidelines in this regard in order to reduce the prevalence of health care associated infections [6]. Furthermore, many studies done to assess the knowledge, attitudes, compliance and reasons for non-adherence to hand hygiene guidelines have found that compliance with hand hygiene protocols by health care workers (HCW) is poor [7-

9] due to several constraints, including heavy workload, high number of clinical procedures and skin conditions of the HCW [10, 11]. An alarming revelation was that compliance was found to be worst before high-risk procedures [12].

Knowledge, attitude and practice (KAP) surveys reveal the misconceptions or misunderstandings that create obstacles to the activities that we would like to implement and are potential barriers to the intended behavioral changes [13]. Nurses represent the largest category of health care workers who provide 80% of direct patient care. If we can assess their deficit of knowledge, attitudes and practices towards hand hygiene at their undergraduate levels, they can be aptly trained at that level itself. Their compliance with hand washing guidelines would prove to be more vital in preventing the disease transmission among patients. There is a paucity of studies which have tried to assess the KAP of hand hygiene in India [14-17]. Medical and nursing students are the main pillars of the health care system, but only few studies have focused them [15, 17]. Till date, we could not find any similar study in the literature from Bihar. So, at this juncture, there is a dire need for conducting this type of study and more similar types in near future, so that we may assess and develop the protocols for strict hand hygiene in our country.

Material and Methods

The present study was conducted at Indira Gandhi Institute of Medical Sciences, Patna, which is a multispecialty centre. Along with quality medical care to thousands of patients, it also imparts medical teaching to the undergraduate and

post-graduate M.B.B.S students along with B.Sc. nursing students.

This was a questionnaire based cross sectional study. After obtaining ethical clearance from the Institutional Ethics Committee, this study was performed between August 2019 and July 2020.

Inclusion and exclusion criteria:

The medical and the nursing students willing to take part in the study were included in the study, while the unwilling ones were excluded. Informed written consent was taken from the participants.

Methodology

A self-administered questionnaire based on Centre for Disease Control (CDC) hand hygiene guidelines [3, 19] was used. A brief written introduction was given to the participants by explaining the aims and benefits of the study. Anonymity and confidentiality of data were maintained throughout the study. After noting down the demographic information of the participants, the knowledge, attitude and practices associated with hand hygiene were assessed. Knowledge was assessed using 8 questions which included multiple choice and “yes” or “no” questions. Attitudes was measured using 10 statements, where the respondents were asked if they agree or disagree to it. Practice was assessed similarly, using 6 questions. A scoring system was used where 1 point was given for each correct response to knowledge, positive attitudes

and good practices. 0 was given for incorrect knowledge, negative attitudes and poor practices. A score of more than 75% was considered “good”, 50-74% “moderate” and less than 50% “poor”.

Once the participants completed the questionnaires, an effort was also made to sensitize the participants towards the importance of hand hygiene. A printed sheet containing the recommendations for hand hygiene by CDC was distributed among the participants with an intention to create more awareness.

Statistical Analysis

The results obtained were analyzed statistically using Chi square test with the help of latest SPSS software version 25. Percentages for each of the given responses were calculated and the various parameters of hand hygiene were assessed for drawing conclusions. Comparison of the percentage of correct responses between medical and nursing students were done along with calculation of pvalue (less than 0.05 was considered significant).

Results:

Out of 210 participants, 160 (76.2%) were medical students and 50 (23.8%) were nursing students. 136 (64.8%) were females and 74 (35.2%) were males. All the participants belonged to final year. On assessing the knowledge questionnaire, 114 (54.3%) participants had good knowledge, 57 (27.1%) had moderate, while 39 (18.6%) had poor knowledge.

Table 1: Data for assessing Knowledge

	Medical students (n=160)	Nursing students (n=50)	Total
GOOD	80 (50%)	34 (68%)	114 (54.3%)
MODERATE	45 (28.2%)	12 (24%)	57 (27.1%)
POOR	35 (21.8%)	04 (8%)	39 (18.6%)
p-value	<0.05 (Sig.)		

Test applied: chi-square test

Maximum of medical and nursing students (90.6% and 90% respectively) believed

that they have sufficient knowledge about hand hygiene. 82% nursing students

believed that sometimes they have more things to do than hand hygiene and only 47.5% medical students agreed to this. 90% medical students agree that wearing gloves reduce the need for hand hygiene

while only 58% nursing students agree to this. Only 51.4% students agree that adhering to hand hygiene practices is easy in the current ICU setup.

Table 2: Data for assessing Attitude

Questions for Knowing the Attitude	Medical students	Nursing students
	Agree	Agree
a. I have sufficient knowledge about hand hygiene	145 (90.6%)	45 (90%)
b. Adhere to correct hand hygiene practice at all times	120 (75%)	36 (72%)
c. Sometimes I have more things to do than hand hygiene	76 (47.5%)	41 (82%)
d. Emergencies and other priorities make hygiene more difficult at times	130 (81.25%)	32 (64%)
e. Wearing gloves reduce the need for hand hygiene	144 (90%)	29 (58%)
f. I feel frustrated when others omit hand hygiene	125 (78.2%)	32 (64%)
g. I am reluctant to ask others to engage in hand hygiene	105 (65.6%)	28 (56%)
h. Newly qualified staff has not been properly instructed in hand hygiene in their training	120 (75%)	16 (32%)
i. I feel guilty if I omit hand hygiene	145 (90.6%)	43 (86%)
j. Adhering to hand hygiene practices is easy in the current ICU setup	76 (47.5%)	32 (64%)
p-value	<0.05 (Sig.)	

Test applied: chi-square test

190 (90.5%) participants confirms that hand hygiene is an essential part of their role but 52 (24.8%) also confirmed that sometimes they miss out hand hygiene simply because they forget it and 126 (60%) agreed that it is difficult for them to attend hand hygiene courses due to time pressure.

Table 3: Data for assessing Practices

Questions for Knowing the Practices	Medical students	Nursing students
	YES	YES
a. Hand hygiene is an essential part of my role	142 (88.75%)	48 (96%)
b. The frequency of hand hygiene required makes it difficult for me to carry it out as often as necessary	89 (55.6%)	22 (44%)
c. Infection prevention team have a positive influence on my hand hygiene	155 (96.8%)	47 (94%)
d. Infection prevention notice boards remind me to do hand hygiene	126 (78.75%)	44 (88%)

e. It is difficult for me to attend hand hygiene courses due to time pressure	98 (61.25%)	28 (56%)
f. Sometimes I miss out hand hygiene simply because I forget it	37 (23.12%)	15 (30%)
p-value	<0.05 (Sig.)	

Test applied: chi-square test

Discussion:

Hand hygiene is a single most effective preventive measure against hospital acquired infections, and can contribute to shorter hospital stay, reduction in patient morbidity and health care costs [20]. It is important to carry out training programmes on hand hygiene regularly for health care workers as it has been associated with increased compliance to hand hygiene practices and reduction of infection [21, 22]. Our study group consisted of final year medical and nursing students undergoing primary training. It is important to instill correct hand hygiene practices, good attitudes and correct knowledge regarding hand hygiene during the primary training. In our study, both study groups had moderate knowledge on hand hygiene, which was a positive finding. However it is important to address the gaps of knowledge with regard to sources and transmission of germs and appropriate methods of hand hygiene during their training.

In our study, medical students showed the highest compliance to hand washing in comparison to nurses and this disagrees with lipsett [23] who reported a higher compliance among nurses (50%) compared to doctors (15%). Minimizing the gap found between the knowledge and attitude in nurses as found in medical studnets could improve the compliance rates to hand washing in nurses. Good hand washing technique, ensuring that all surfaces of the hands receive contact with the decontaminating agent, has been accepted for many years [24].

Both medical and nursing students had a good knowledge (69%, 83% respectively) of the proper method of hygiene following removal of examination gloves. However the overall correct responses regarding appropriate use of hand rub and hand washing was unsatisfactory and there were several gaps in their knowledge with regard to the accurate procedure. [25] One of the reasons may be due to unavailability of hand rub solution in the hospital for medical and nursing students. It has been shown that increased compliance to hand hygiene can be achieved by making the hand rub solutions available at the bedside of patient [21].

52 (24.8%) students confirmed that sometimes they miss out hand hygiene simply because they forget it and 126 (60%) agreed that it is difficult for them to attend hand hygiene courses due to time pressure. In order for the students to develop good practices regarding hand hygiene, it is important to make proper hand hygiene facilities available. When these students are facing situations requiring urgent patient care, they are more likely to omit hand hygiene practices when facilities are not easily accessible to them.

Increasing the supplies necessary for hand washing and institutional support is essential in combating substandard practices in hand hygiene. We propose that a quantitative measure of hand hygiene facilities be done to better assess the available resources. An ideal follow-up of this study would be to implement certain

interventions and reassess the same groups to look for an improvement.

Conclusion

The students had good knowledge on hand hygiene but attitudes and practices of medical and nursing students were unsatisfactory to that level. The study shows the need for further improvement of the existing hand hygiene training programs to address the gaps in knowledge, attitudes and practices. Implementation of hand washing training programs for undergraduate doctors, house officers and nurses would improve Hand hygiene practices. Those training programs should be implemented at intervals and assessed for the improvement of hand washing practices in the hospital.

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