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BARRIERS FOR EFFECTIVE HAND HYGIENE AMONG DOCTORS- DO WE NEED TO CHANGE THE EXISTING CURRICULUM

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ABSTRACT **Background and aims:** Hand hygiene is simplest, cheapest and most effective step to reduce the health care associated infection. Unfortunately the compliance for this simple step is low among doctors despite the efforts done to improve it. Our viewpoint is that if certain small changes are made in the curriculum of medical students, it can go a long way in improving the compliance towards hand hygiene later in their carrier. We also suggested the various methods which can be applied right from the beginning of their medical graduation curriculum towards achieving this goal.

Methods: A quantitative study was done among 48 doctors of different specialties in a tertiary care medical college to know the knowledge, attitude and practices regarding hand hygiene. An anonymous questionnaire based on CDC guidelines was used. The main focus was to enquire whether they are following WHO's five moments of hand hygiene and the reasons for not adhering to it. Being a prevalence study collected data was expressed as percentages.

Results: Of the 48 doctors surveyed 79% knew what is hand hygiene, 54% answered correctly regarding WHO's 5 moments of hand hygiene but only 17% were correctly following it. Insufficient time (34%), forgetfulness (29%) and non availability of the hand hygiene agent (19%) were the main reasons for poor compliance.

Conclusion: There is a gross gap between knowledge, attitude and practices regarding hand hygiene. Changes are needed at various levels including the changes in the curriculum of medical students to improve the compliance.

KEYWORDS : hand hygiene, infection control, curriculum, medical students

Background and aims

Infection control is the need of hour. Everyday millions of people across the globe are suffering from morbidity and mortality because of infection. Healthcare associated infection is one of them. According to an estimate around 1.4 million people are suffering from hospital acquired infections at any given point of time [1]. It is also a significant financial burden on the patient as well as on the healthcare system of the country. A patient may be admitted to the hospital for a different reason but ultimately falls prey to healthcare associated infection. This infection could be anywhere like catheter related blood stream infection, catheter related urinary tract infection, ventilator associated pneumonia or surgical site infection. One of the important routes for transmission of infection is through the hands of health care workers. The Hippocratic Oath "first, do no harm" is frequently violated though unintentionally. A health care worker's hands may be a carrier of different organisms like Staphylococcus aureus, Enterococcus, E.coli, Serratia, Pseudomonas, Streptococcus, Enterobacter, Acinetobacter etc. which can cause various infections ranging from simple boil to serious infections [2]. The burden of health care associated infection is more alarming in developing countries with figures ranging from 11-83% for different health care infections in different studies in India [3]. Many personnel don't realize that simple tasks like taking a patient's vital signs, touching the patient's clothing or linens or touching the equipment nearby can contaminate their hands. At least 20% of the nosocomial infections are preventable [4]. Along with the other measures to reduce health care associated infections, hand hygiene is simplest, cheapest and most effective and a fundamental step. It has been proven in many studies that effective hand hygiene can definitely reduce the transmission of infection and in particular cross infection from one patient to another [5]. Unfortunately the compliance or adherence to this simple practice is very low in most of the settings among health care workers [6]. The reasons could be varied like insufficient time, lack of availability of the agent, lack of knowledge or overcrowding etc. But once this simple practice of hand hygiene becomes a reflex action it can go a long way in prevention of health care associated infections. We carried out a survey in a tertiary care hospital regarding awareness of hand hygiene, how it is performed, the agents used, and barriers for poor adherence. We also suggested that in addition to the various methods, there is a need of change in the existing curriculum of medical students to make them compliant regarding hand hygiene.

Material and methods

This study was performed in a tertiary care medical college Oct.17-Nov.17. Our study was done using questionnaire based on Centers for Disease Control and Prevention(CDC) guidelines which included 10 questions. The doctors including consultants, senior residents and junior residents from different departments participated in the study. They were given questionnaire regarding hand hygiene knowledge, attitude and practices. The evidence based World Health Organisation's five moments of hand hygiene were specifically asked which included hand hygiene before touching a patient, before a aseptic procedure, after body fluid exposure risk, after touching a patient and after touching patient's surroundings. The participants were also asked about the reason for non adherence to this practice and how to improve it. Strict confidentiality was maintained throughout the survey. Since this was a prevalence study the collected data was expressed as percentage.

Results

During the study period 48 health care workers (HCW) were surveyed. The surveyed HCW were consultants, senior residents and junior residents working in different specialities. The mean age was 45.4 years and there were more males (75%). 79% HCW knew what is hand hygiene and 82% were able to tell correctly why it is important. 54% of personnel told correctly when to perform hand hygiene i.e. 5 moments for hand hygiene. But when it comes to practical application only 17% participants told that they are correctly following the WHO's hand hygiene protocol. The main deficiency was that they were not washing hands before touching a patient and after touching patient's surroundings. There was very good compliance after body fluid exposure risk (100%). Regarding hand hygiene agents most people 62% preferred soap and water. The theatre and emergency staff preferred antimicrobial solutions. Insufficient time (34%), forgetfulness (29%) and non availability of the hand hygiene agent (19%) were the main reasons for poor adherence. Another common reason for poor compliance was substitution of gloves for hand hygiene. There were no major side effects experienced by any of the health worker. The main complaint was dryness with soap and water in 6% of personnel. 94% HCWs suggested that a multimodal and multidisciplinary approach is necessary to improve compliance for hand hygiene.

Discussion

The aim of our study was to know the current knowledge and application of hand hygiene among the doctors and various barriers associated with it and how to overcome these barriers and effectively implement hand hygiene practices.

In our survey we found that our institute physicians though well aware regarding hand hygiene theoretically, are not following this simplest step practically. The reasons are varied like lack of time, no proper training, non availability of the agent, forgetfulness especially in emergency situations. Despite such a high incidence of health care associated infection and so much work being done at the institute level or by WHO, the compliance remain poor in most of the setups. Various methods can be adopted by the institute beginning with the formation of an infection control committee and ensuring regular availability of the hand hygiene agent. The committee should frame appropriate policies so as to make each and every doctor compliant regarding hand hygiene. The aim of the whole process should be transformative learning because we have to bring the change in attitude and habits. Formal training sessions should be held for all the hospital doctors including demonstration of correct technique of hand hygiene and this should be a continuous process rather than a onetime affair. Regular seminars should be held and audiovisual aids should be utilized to make it interesting. The importance of five moments of hand hygiene should be emphasised especially on before touching the patient and after contact with patient surroundings. There should be posters demonstrating correct technique of hand washing near sinks. There should be a feedback system also so that if a person has not followed the protocol he should be immediately reminded about this and this will gradually brings a change in the attitude. A constructive criticism also helps in bringing change in attitude and behaviour. A positive reinforcement in the form of a reward can be started which will not only make the person himself more compliant but also bring change in the attitude of other persons. To change an attitude is a tough but not impossible task. Once the right attitude is there, reinforcement is very easy. Different people learn the same thing in different ways depending on their personality, intelligence and experiences and motivation. Thus various methods can be tried to achieve the ultimate aim of effective hand hygiene.

Along with the various steps taken to improve the compliance, small certain changes are also needed in the curriculum of the medical students so that hand hygiene should be given a priority. In earlier surveys it was found that nursing students fared better than the medical students and the main reason behind this is that hand hygiene is an integral component of their curriculum and they receive formal training in this and for them this is a procedure they must follow(7,8). The same thing can be done for physicians also, as physician status by itself is a risk factor for nonadherence (9). In the present scenario, a medical student is taught briefly about hand hygiene theoretically only during their microbiology and community medicine teaching sessions. Rest they imbibe by observing their seniors or teachers during clinical postings. Now here lies the problem, if the senior is not following the protocol the junior will never learn. In the earlier study by Snow et al it has been shown that mentor's hand hygiene practices influence student's behaviour regarding hand hygiene (10). So our aim should be to produce a student with good hand hygiene behaviour so that in future when he becomes a mentor or teacher he will positively influence the attitude of other students.

The point we want to emphasize is that we should develop the right attitude from the beginning itself which is possible if we make certain small changes in the curriculum of students. In other words rather than changing an attitude, develop the right attitude. The knowledge and training regarding hand hygiene should start very early rather than waiting for the student to become graduate and then teach him the technique and benefits of hand hygiene. Hand hygiene should become a part of their curriculum. Every student is different and we should use a variety of methods to make them learn about hand hygiene. There should be theoretical classes followed by practical demonstrations. Interactive discussions should be held so as to arouse the interest from the beginning itself. Just teaching is not enough, they should be posted in intensive care units or high dependency units and shown the practical utility of this exercise. In the era of internet we can show them videos on how to do proper hand hygiene. Another way of teaching them is giving them a theme of hand hygiene and they should perform a role play in which it is shown that neglecting hand hygiene can lead to morbidity and mortality. Even in assessment examinations specific questions related to hand hygiene can be asked. In the medical curriculum much is taught about infection but very less about the preventive aspect. The students during their ward postings should be shown the patients suffering from health care associated infections so that they can understand the importance of hand hygiene. In their study Feather et al also suggested that compliance with hand washing be built into undergraduate teaching (11). If these small changes in their teaching program can be done then we can expect a medical graduate having a good amount of knowledge, sufficient skills as well as right attitude towards hand hygiene. The required changes are listed in table 1. Millers pyramid which goes from knows to knows how to shows how to does can be followed to inculcate the habit of hand hygiene (12). In other words this pyramid goes from knowledge to applied knowledge to performance to action. An action if performed repeatedly becomes a reflex action and our goal will be achieved.

Table 1

List of changes in curriculum for developing right attitude towards hand hygiene
Theoretical classes
Practical demonstrations
Interactive discussions
Internet- self directed learning
Role-play
Videos
Questions about hand hygiene in assessment examinations
Postings in ICU or HDU and shown the practical utility
Bedside discussions on patients suffering from health care associated infections

Conclusion

In our views for effective hand hygiene the training should start very early with changes in the teaching curriculum of students so that this habit becomes inculcated in them. Though our study has got the limitation of being subjective in nature but it still provided an input on parameters which can be taken care of. We think that these changes will bring a remarkable improvement in hand hygiene practices and will reduce morbidity, mortality and financial burden due to health care associated infections.

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