Knowledge and practice of infection control among dental students: A survey
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ABSTRACT

Background: Infection control practices are important in a clinical setup to avoid the risk of infection among the patients. Proper infection control measures such as proper waste disposal and sterilization of instruments that are basic infection control measures should be strictly followed in a clinical setup. Aim: This study aims to assess the knowledge of infection control among dental students and the various infections control practices. Materials and Methods: The study was conducted in Saveetha Dental College in 2016. The study group comprised 3rd year, 4th year, and interns. Total number of students included in the study was 100. Results: The students know the importance of infection control and the knowledge among all students about the protocols about infection control are high, but practice is low. Conclusion: A better knowledge of infection control is essential for safe practice of dentistry. This will ensure the provision of better and safer dental health-care services for the population.

KEY WORDS: Disinfection, Infection Control, Needlestick Injuries, Universal Precautions, Vaccination

INTRODUCTION

The dental clinic is an environment where disease transmission occurs easily.[1] Dentists are more prone to infection due to their direct contact with blood and saliva on a daily basis in their offices.[2] Infection can be established when subsequent factors are present like a patient having active viral or bacterial diseases, individuals without any prior vaccination or no immunity against pathogen and a path through which the causative microorganism can easily enter the host. To protect host from getting exposed to infections, effective measures are required to be planned to break one or more of these links in the chain and establish safety. Using safety precautions and implementing infection control guidelines along with vaccination and proper postexposure management can prevent infections. Since the majority of carriers of infectious diseases cannot be identified, implementation of standard universal precautions in dental schools is the most effective way to control cross infection.[3,4] Health-care infection control practices advisory committee is charged with providing advice and guidance to the Secretary, Department of Health and Human Services; the Director, CDC; and the Director, National Centre for Emerging and Zoonotic Infectious Diseases, regarding the practice of hospital infection control and strategies for surveillance, prevention, and control of healthcare-associated infections (e.g., nosocomial infections), antimicrobial resistance, and related events in settings where health care is provided including hospitals, ambulatory and long-term care facilities, and home health agencies. The committee shall also advise CDC on periodic updating of existing guidelines, development of new guidelines, guideline evaluation, and other policy statements regarding prevention of healthcare-associated infections and healthcare-related conditions. Awareness and compliance with these recommendations are crucial for the prevention of occupational and nosocomial infections in health care workers, including dental health-care professionals. Unfortunately, despite the considerable emphasis placed on standardized infection control procedures, it appears that only a few dentists adhered to these protocols in their dental practice.[5,6] The purpose of the present study was to

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investigate the knowledge, attitudes, and practices regarding infection control measures among dental students.

**MATERIALS AND METHODS**

The study was conducted in Private Dental College in 2016. The study group comprised 3rd year, 4th year, and interns. Total number of students included in the study was 100, among which 34 students were 3rd year, 33 were 4th year, and 33 were interns. A valid questionnaire of 11 was distributed among dental students. This is self-reported questionnaire, which takes 10 min for completion [Table 1]. Questionnaire was manually checked for completion of data. All data were entered in data entry form.

**RESULTS**

A total of 100 questionnaire forms were distributed among the dental students belonging to 3rd year dental students, 4th year dental students, and interns. The gender division was 36% males and 64% females [Table 2].

In the survey conducted 76% of the students considered that dental clinics are more prone to infection than any other medical fields, however, only 62% of students were vaccinated for hepatitis B which is common infection in a dental setup. Students consider that effective barrier methods and proper handling of instruments can prevent infections. 27% of students think vaccination is not mandatory. The use of protective barriers such as gloves, mask, gown, and eye-guard varied among each year. 67% of the students used them always, whereas 33% used them only while treating infectious patients. Among the 67% of students, 25% were 3rd year, 11% were 4th year, and 31% were interns. The common reason given by the students for not using barrier methods was the timing of the procedure being small and time consumption since it was to be changed for every patient [Table 3].

**DISCUSSION**

This study was conducted to assess the knowledge and practice of infection control among dental students. In this study, it is noted that the students know the importance of infection control and the knowledge...
among all students about the protocols about infection control are high, but practice is low. Although the glove usage is 100%, glove changes between each patient and disinfection between each glove usage remain low. Only 81% of students change gloves between each glove usage while the disinfection rate is only 49%. The glove usage is more when compared to the study conducted by McCarthy et al., which was 94%. Although hepatitis vaccination is mandatory in all dental colleges, only 62% are vaccinated which is low when compared to the study conducted by de Souza et al., which showed 90.8% of students being vaccinated. Cross infection control forms an important part of practice for all health-care professions and remains one of the most cost-beneficial medical interventions available. Paramount to the prevention of infectious disease is the strict adherence to universal precautions for all patients. This includes, though not limited to, eye protection with lateral shields, facemask, and protective clothing, which will be laundered on the premises or by appropriate services, proper disinfection, and sterilization of the dental care unit and the instruments and regular vaccination of dental health care. Accordingly, masks should be changed when they become contaminated, wet or more often, such as during longer appointments, but our study shows that only 16.1% change their mask once it gets wet. 70% of the dental students in our study used examination gloves for performing intraoral surgical procedures, which are a contraindication, as surgical procedures should be done with sterilized surgical gloves, according to the CDC guidelines for infection control in dental health-care settings to prevent cross infection in dental clinics. Protective eyewear should be worn throughout the dental appointment, then cleaned and disinfected after use and whenever it becomes visibly contaminated, according to the guidelines for infection prevention and control in dental office, by dental surgeons of Ontario, but according to our study, 82% of the dental students were wearing safety glasses for their eyes, and only 66% of dental students make their patients wear safety glasses during dental procedures. ICRC states that if proper disinfection, sterilization, storage procedures are followed, the instruments can be stored for a maximum of 4 weeks before reuse, and in our study, 85.3% of the dentists resterilize instruments that are not used for more than 4 weeks after sterilization. Hepatitis B virus is more contagious and its transmission is more common than HIV in the dental setting. More than half of the participants in the study did not know that hepatitis B is the most common infection transmitted in the dental clinics. There are many routes by which infections in the dental surgery can be transmitted from patients to dental health care workers and vice versa. Possibilities of infection transmission from patient to patient, dental surgeon to the wider community and from the community to the other patients is also high. Hence, there is a need to implement infection control recommendations to reduce the risk of transmission of blood-borne diseases in health-care facilities. Strict adherence to universal/standard precautions which considers all blood and blood-contaminated fluids as potentially infectious will be the best solution for preventing and controlling cross infections in the dental clinics.

CONCLUSION

Dentists, being members of the health-care profession, should know the importance of infection control. Dentistry in India has made tremendous progress in different subspecialties of dentistry. A better knowledge of infection control is essential for safe
practice of dentistry. This will ensure the provision of better and safer dental health-care services for the population.

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