

Knowledge and Practices Regarding Cross Infection Control among Dental Students

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Abstract

Aim:

To evaluate the general protocols followed by dental students regarding sterilization, disinfection and infection control.

Objectives:

The objective of this study is to learn about the precautions undertaken by dental students in dental clinics to prevent cross infection following dental procedures.

Materials and methods:

A random sample of 130 dental students belonging to Final year, and internship (fifth year trainee) of undergraduate dental program in Saveetha Dental College and Hospital, Saveetha university, Chennai, were included in the study. A short retested questionnaire of 15 questions was given to the dental students. The questionnaire was designed to collect information about the key measures of infection control in dental practice, including methods of sterilization, operator surface disinfection, use of protective barriers, use of disposables and waste disposal and the rate of infection transmission seen in dental clinics. The data extracted were tabulated, statistically analyzed and results obtained. Results were calculated on the basis of frequency and percentages using SPSS.

Results:

46.9 % of students disinfect their chair only on alternate days. 70 % of dental students use examination gloves for intra oral surgical procedures. Only 16.1% of dental students change their mask once it gets wet. Only 48.4% of dental students answered that hepatitis B is the most common infection transmitted in the dental clinic.

Conclusion:

This study revealed that knowledge and practices of dental students towards cross infection control was inadequate and were not adhering to proper preventive measures. Adequate education and standard protocol regarding the training as well as adapting preventive measures should be formulated in all dental institutions. The implementation of Universal Precautions, proper disinfection and sterilization methods, correct waste disposal methods will help in preventing and controlling cross infections in dental clinics.

Keywords-Universal precautions, Hepatitis B, Infection control, Knowledge

INTRODUCTION

Cross Infection control procedures are precautions taken in health care settings to prevent the spread of disease between patients, from patients to health care workers [dentists] and vice versa. The center for disease control [CDC] and prevention have given special recommendations for the prevention of cross infection in dental clinics. The principles of cross infection control should be followed everyday for every patient, a breach in which may lead to disease transmission among patients. This makes cross infection control procedures very significant as it is concerned with patient safety. The rationale of this study is to assess the knowledge and cross infection control protocols followed in clinics by dental students of our institution. This will help us to make modifications in the education curriculum and implement the necessary infection control protocols for the betterment of the patients.

MATERIALS AND METHODS

Year of Study

The study was conducted during the academic year in February 2016.

Study Population and Location

This study was conducted among the dental students who were attending the Final year, and internship (fifth year trainee) of undergraduate program in Saveetha Dental College and Hospital, Saveetha university, Chennai.

Study Sample Size

130 students were randomly enrolled in the study including the final year, and intern students.

Questionnaire

A validated questionnaire of 15 close ended questions was distributed among all the students of the study and the questions were designed to assess their basic knowledge, and practices they follow for prevention of cross infection in dental clinics. The data extracted were tabulated, data

management and statistical analysis were performed, obtained using SPSS. frequencies and percentages were calculated and results

QUESTIONNAIRE

1) Are you aware of the term cross infection?

- A) yes
- B) no

2) How frequently do you disinfect dental chair?

- A)Daily
- b)once in two days
- C)once in a week

3) How frequently do you disinfect the suction unit?

- A)Daily
- b)once in two days
- C)once in a week

4) What agent do you use for disinfection ?

- A)formaldehyde
- B)phenol
- C) chlorine
- D)if others please mention _____

5) What method of cleaning you do for surgical instruments once used?

- A)ultrasonic cleaning
- B)automatic washer stabiliser
- C>manual cleaning

6) What method of sterilization do you follow?

- A)autoclave
- B)cold sterilization
- C)hot air oven

7) Do you resterilize instruments that have been autoclaved, stored but not used for few weeks?

- A)yes
- B)no

8) Do you have colour coded bins for safe disposal of clinical waste ?

- A)yes
- B)no

9) What type of mask do you use?

- A)single layered
- B)double layered

10) How often do you change your mask?

- A)after every patient
- B)once daily
- C)once it gets wet

11) What type of gloves do you use while performing surgical procedures ?

- A) examination gloves
- B)sterile surgical gloves

12) Do you wear safety glasses while doing dental procedure ?

- A)yes
- B)no

13) Do you make the patient wear safety glasses during dental treatment?

- A)yes
- B)no

14) In case of Local anesthesia sprays, do you disinfect the nozzle after each patient ?

- A)yes
- B)no

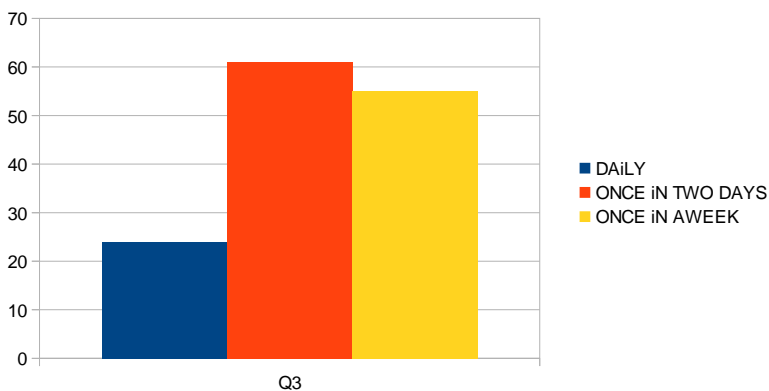
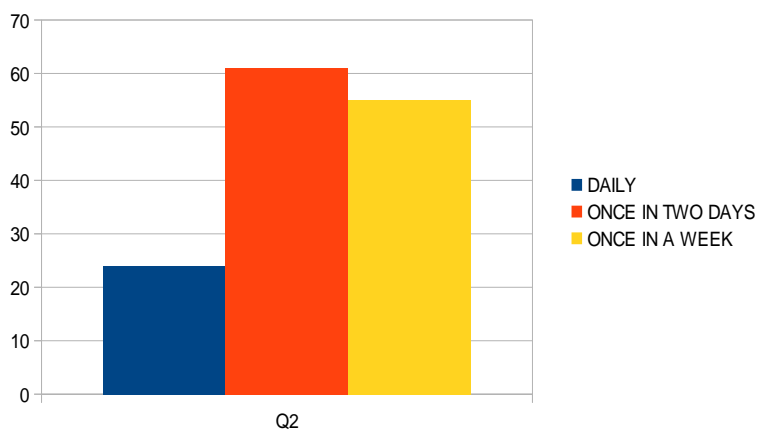
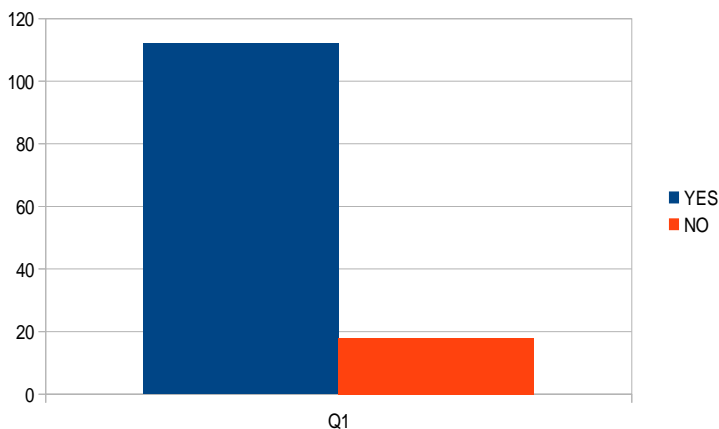
15) what infections are transmitted in the dental clinic?

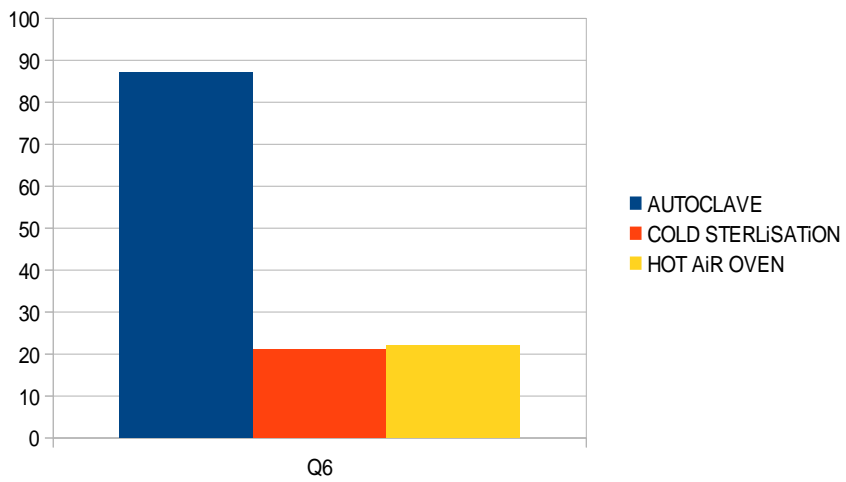
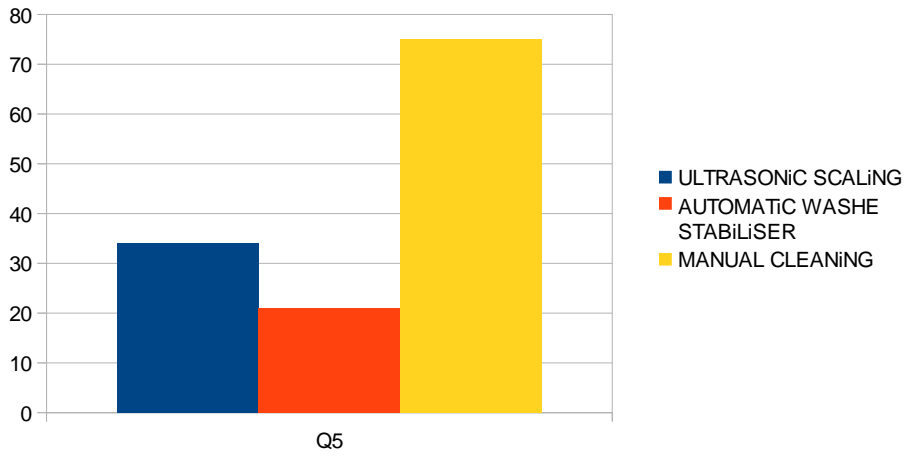
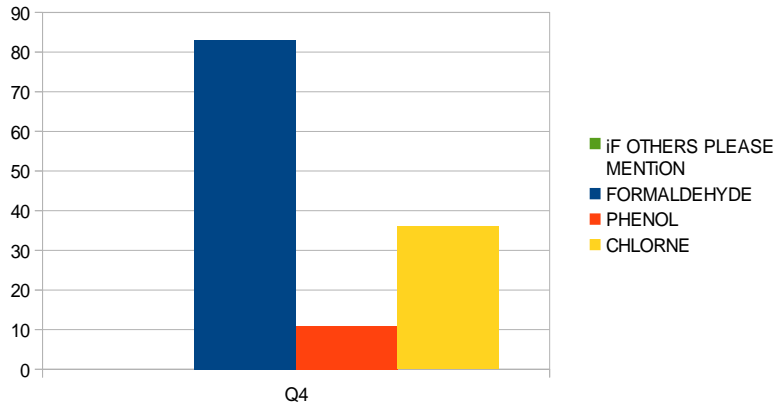
- A)HBV
 - B)HIV
 - C)herpes Virus
 - D)HCV
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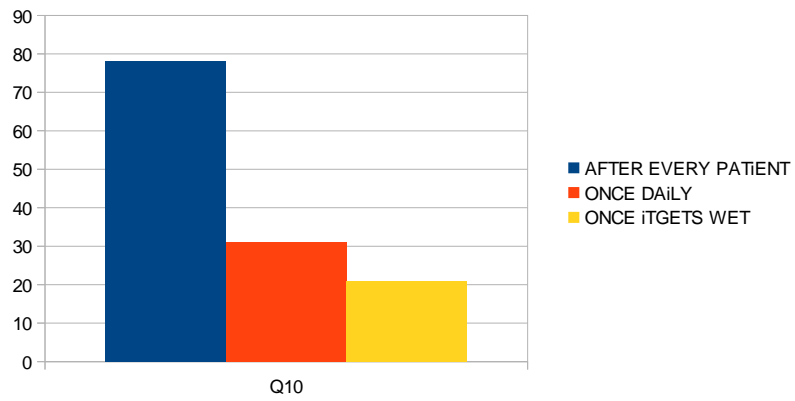
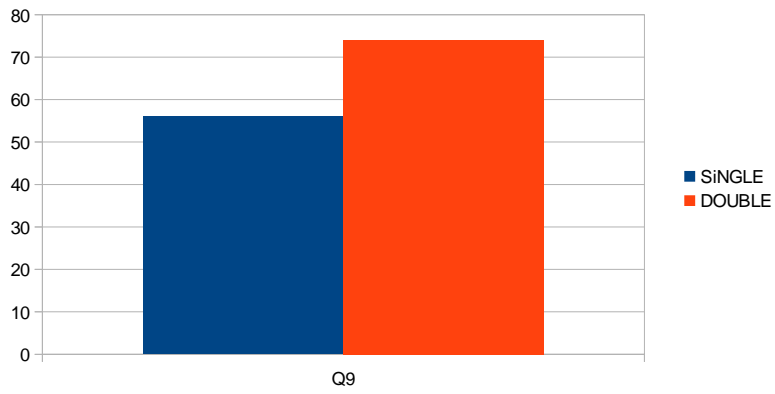
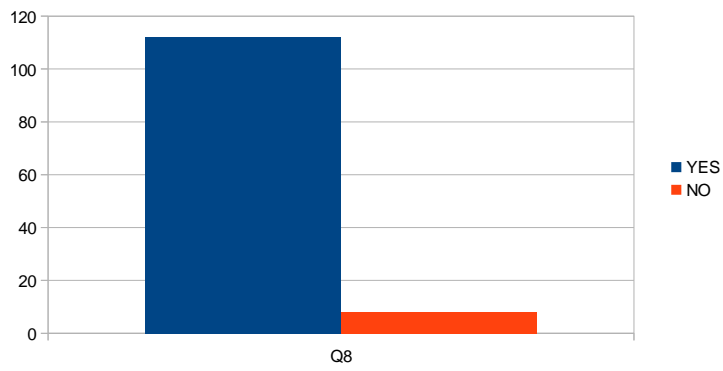
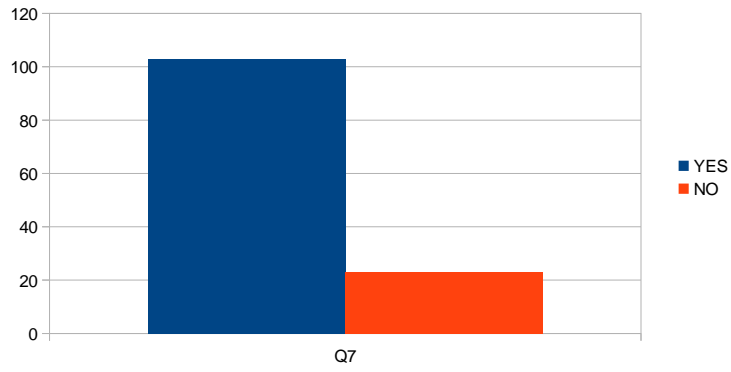
RESULTS

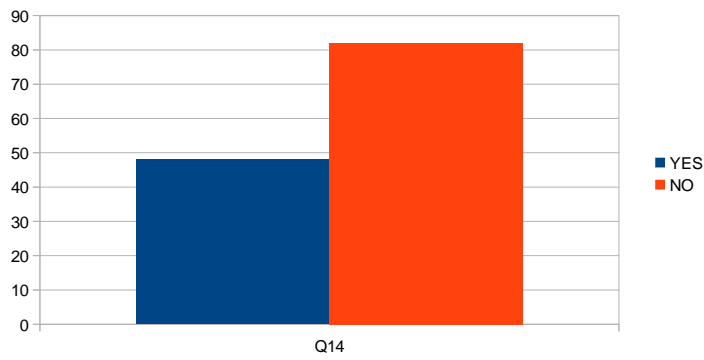
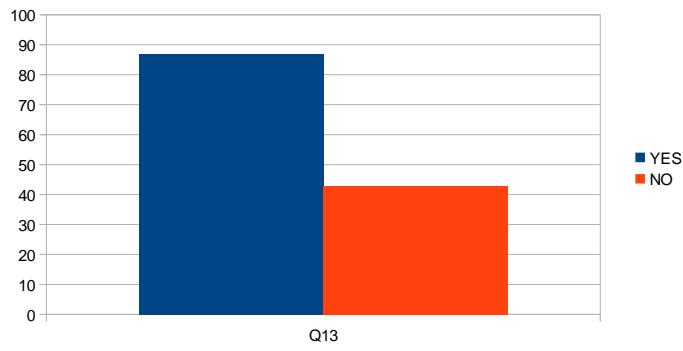
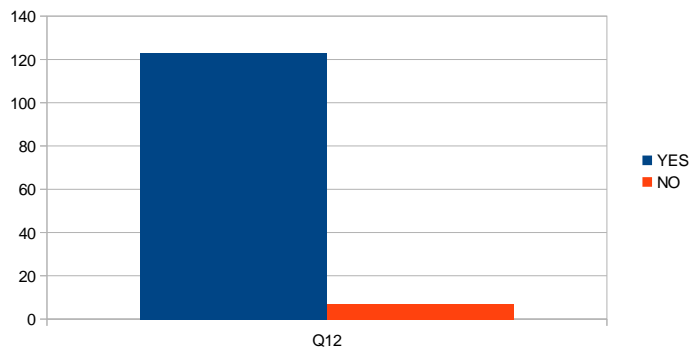
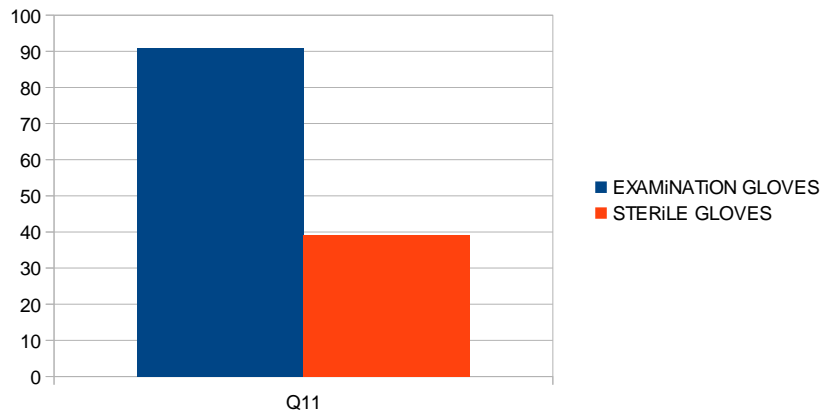
In this study about 86.6 % of dental students, have seen less than 3 cases of cross infection in a week. 46.9 % of students disinfect their chair only on alternate days. 63.8% of dental students use formaldehyde for disinfection. 70 % of dental students use examination gloves for intra oral surgical procedures. 56.9 % of dental students use double layered gloves for examination. Only 16.1% of dental students change their mask once it gets wet. 82 % of dental

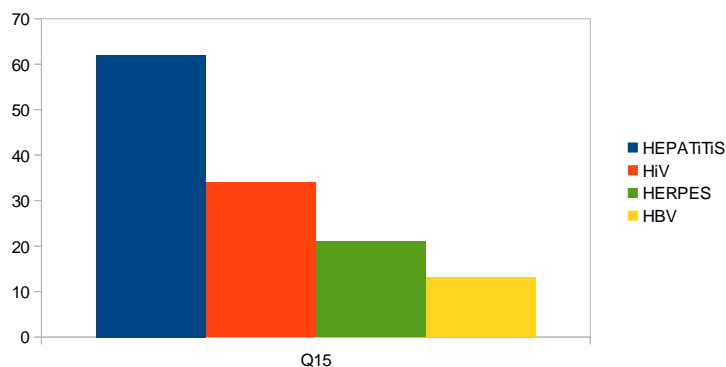
students wear safety glasses for their eyes and 66.9 % of dental student make their patient wear safety glasses. Only 36.9 % of dental students disinfect or change the local anesthesia spray bottle nozzles between each patient. 66.9 % of dental students used autoclaving method for sterilization. Only 48.4% of dental students answered that hepatitis B is the most common infection transmitted in the dental clinic.











DISCUSSION

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.[1] Paramount to the prevention of infectious disease is the strict adherence to universal precautions for all patients.[2] 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 healthcare.[3]

Accordingly, masks should be changed when they become contaminated, wet or more often, such as during longer appointments [4], but our study shows that only 16.1 percent change their mask once it gets wet. 70 percent of the dental students in our study used examination gloves for performing intra oral surgical procedures, which is a contra indication, as surgical procedures should be done with sterilized surgical gloves, according to the CDC guidelines for infection control in Dental health care settings[5] in order 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 guidelines for infection prevention and control in dental office, by dental surgeons of Ontario,[4] but according to our study, 82 percent of the dental students were wearing safety glasses for their eyes and only 66 percent 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 four weeks before reuse,[6] and in our study, 85.3 percent of the dentists resterilize instruments that are not used for more than 4 weeks after sterilisation. Hepatitis B virus is more contagious and its transmission is more common than HIV in the dental setting. [7] More than half of the participants in the study did not know that hepatitis B is the commonest 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.[8] So 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[9], will be the best solution for preventing and controlling cross infections in the dental clinics.

CONCLUSION

This study revealed that knowledge and practices of dental students towards cross infection control was inadequate and were not adhering to proper preventive measures. Adequate education and standard protocol regarding the training as well as adapting preventive measures should be formulated in all dental institutions. The implementation of Universal Precautions, proper disinfection and sterilization methods, correct waste disposal methods will help in preventing and controlling cross infections in dental clinics.

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