

Awareness And Behavior Of Dental Students Towards Infection Control Measures In Karachi, Pakistan

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ABSTRACT:

Introduction: A dental operatory is an area for easy and quick transmission of infections. Infections like TB, Hep B, Hep C, HSV and HIV can be readily transmitted among patients and to the operating staff if proper measures are not taken. The aim of the present study was to assess self-perceived knowledge and practices of the dental students and graduates about infection control measures.

Method: The study was conducted using a self-administered questionnaire, comprising of 12 basic questions to judge the knowledge and practices of students in the dental OPDs. A total of 360 dental students and house officers participated voluntarily in the survey.

Results: The results showed that there did not exist sufficient knowledge among dental students and fresh dental graduates about infection control measures.

Conclusion: There is thus a dire need to fulfill the gap between the ideal practices protocol knowledge and practices that are being followed by the students.

Key words: Awareness, Behavior, Infection control, Dental students, Karachi.

INTRODUCTION:

The dental facility is a domain where disease transmission happens rapidly¹. Aversion of disease transmission in the dental center is along these lines a significant part of dental OPD, and dental facility employees must embrace certain essential protocols while in their dental practices. Dental health care professionals (DHCPs) are more prone to diseases caused by several pathogens like Mycobacterium tuberculosis, hepatitis B and hepatitis C viruses, staphylococci, streptococci, herpes simplex virus types 1, human immunodeficiency virus (HIV), mumps, influenza, and rubella. Diseases might be conducted in the dental workplace via a few courses, including immediate interaction with blood, oral liquids, or different discharges; incidental contact with used instruments, operatory equipment, or surrounding areas; or interaction with aerial pollutants in either spatter or mist concentrates of oral and respiratory liquids^{2,3}. Wearing of gloves by dental work force has been considered as a basic component of cross-disease control protocol in dental surgery^{4,5}. Hands are thought to be a noteworthy source of disease transmission⁶, and conceivably contaminated blood might be held underneath the nails till five days. It is hard to expel debase

material from hands, especially from the subungual and under the nails, until there is fastidious mechanical cleaning⁷.

Foremost to the aversion of infections is the tight adherence to standardized safety measures for all dental specialists. This incorporates, however not restricted to, eye protection with horizontal shields, facemask, and defensive apparel. Regardless of the extensive emphasis on standardized disease control techniques, it creates an impression that some of the dental specialists are not using these systems in their clinical routine practice⁸⁻¹³. Indeed, even in dental schools, future dental practitioners are not generally following these strategies¹⁴⁻²¹.

Professional exposure has been guaranteed to be an essential means by which HBV contamination is transmitted, and are therefore, thought to be at high risk^{22,23} due to exposure to saliva and gingival crevicular fluid (GCF)^{10,11}. Furthermore, the microorganisms remain active for more than twenty-four hours under characteristic conditions and for over one week in plaster casts, there exists a huge plausibility of HBV transmission in dental settings²².

Dental knowledge plays a vital role in dentists' learning, assisting them to acquire sufficient information and behaviors about cross infection control methods. Keeping this in view, the reason of this study was to evaluate the self-perceived behavior of dental students regarding infection control in Karachi, Pakistan.

MATERIAL AND METHODS:

A questionnaire based study was conducted among dental under-graduate students (third year, final year and house officers) at Dow University of Health Sciences, Karachi, Pakistan. Students were briefed about sterilization and cross infection protocols when they started working in the dental OPD (constantly updated if need be).

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Received: 06-05-18
Accepted: 24-07-18

Non probability convenient sampling was done and 360 third year and final year dental students and house officers, were included. House officers were graduates from the same dental institute, with rotations equally divided in all departments during the set time period of one year of house job. Students and house officers, who refused to voluntarily participate in the study were excluded.

The students and house officers willingly filled a questionnaire comprising of twelve questions. The percentages of students in third year, fourth year, and house job who responded were 29% percent, 36% percent, and 35% percent, respectively.

The questionnaire was designed with the aid of field experts. The study group was kept in mind and questions were designed according to the syllabus regarding infection control that was taught to the students during graduation. A structured self-administered questionnaire was used for gathering of data. Questionnaires were distributed to the students after lectures finished and they were asked to fill them without discussing with each other. Questionnaires were given to the house officers in their respective OPDs. The questionnaire comprised of questions about knowledge, attitude and practices of the population about infection control practices.

RESULTS:

The selection of 4th year student is that they are supposed to have best theoretical and practical background knowledge among all undergraduate students related to spread of infection and its preventive measures in order to be a skilled dentist. Moreover, evaluations at this stage might be demonstrative of the potential of dental courses in consolidating sufficient knowledge with respect to contamination control among future dental specialists. An essentially higher level of 5th year understudies (58.9%) demonstrated conducive states of mind toward the treatment of patients with infectious illnesses, when contrasted with 4th year understudies (31.0%).

There can be marked contrasts between what undergraduates say they would do, and what they really do in clinical practice in light of this study there is a strong indication that an expert dynamic and pro-active approach all through the

course is required. So this study also suggests fabrication of legislative criteria as part of curriculum to seed-in the cross infection controls. 54.44% of dental graduates and house officers believed that disinfection of dental chair and dental office is important. Surprisingly, 16.94% responded that improper sterilization will not lead to communicable diseases. This shows the knowledge gap that needs to be filled.

DISCUSSION:

Following study explains the current student behavior regarding protection against spread of infection at 3 dental schools the Dow University of Health Sciences, Karachi. All students having human interactions with various kinds of fluids related to it, either secretory or non-secretory (saliva, blood, sweat, sputum, sneeze droplet, hepatitis or tuberculosis infected instrumentation) are responsible to protect themselves and patients, by abiding to the protocols of international cross infection control. Authoritarian and inflexible directives must be introduced and assessed persistently among students at the level of administration and management.

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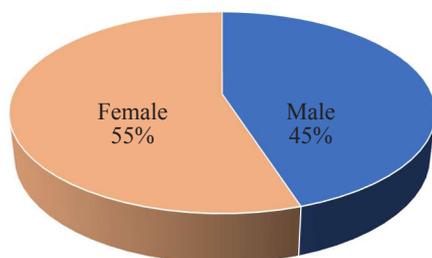


Fig.1 Gender distribution of the sample

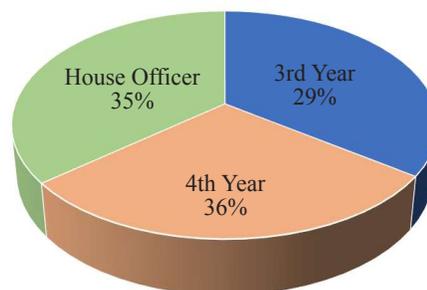


Fig.2 Academic year-wise distribution of sample

Question	Response	Number	%
Q1. When do you wash hands?	before seeing each patient	115	31.94%
	after seeing each patient	182	50.56%
	before and after seeing each patient	63	17.50%
Q2. With which of these do you prefer to wash your hands?	antiseptic soap	124	34.44%
	Antiseptic hand-wash solution	65	18.06%
	Only water	171	47.50%
Q3. Is Isolation (preventing saliva and water from entering working site) is important during performing dental procedures?	Yes	285	79.17%
	No	59	16.39%
	Don't know	16	4.44%
Q4. Have you been vaccinated for hepatitis B ?	Yes	185	51.39%
	No	175	48.61%
Q5. Which method is used in your dental opd to clean reuseable instruments?	Autoclave	223	61.94%
	Boiling	96	26.67%
	Washing	41	11.39%
Q6. Which of these diseases can be easily transmitted through saliva?	Hepatitis B	69	19.17%
	AIDS	173	48.06%
	Tuberculosis	89	24.72%
	Don't know	29	8.06%
Q7. What action should be taken right after accidental contact with the blood of HIV infected patient?	Anti-HIV immunoglobulins	62	17.22%
	Medicines	118	32.78%
	Blood tests	149	41.39%
	Don't know	31	8.61%
Q8. When working in a dental OPD, what protections do you take to prevent yourself from getting infected?	Face mask and gloves	148	41.11%
	Protective clothing	112	31.11%
	All the above	100	27.78%
Q9. What do you with used gloves in your dental operatory?	Dispose them	343	95.28%
	Reuse them if not stained with blood/saliva	13	3.61%
	Reuse them after sterilization	4	1.11%
Q10. Do you agree that improper sterilization in a dental OPD can lead to transfer of infections among patients?	Yes	193	53.61%
	No	61	16.94%
	Don't know	132	36.67%
Q11. Is the cleaning/ disinfection of dental chair, clinic, dental office is important?	Yes	196	54.44%
	No	78	21.67%
	Don't know	86	23.89%
Q12. Do you separate the instruments of HIV/Hepatitis patients from other patients?	Yes	241	66.94%
	No	119	33.06%

cross infection controls. 54.44% of dental graduates and house officers believed that disinfection of dental chair and dental office is important. Surprisingly, 16.94% responded that improper sterilization will not lead to communicable diseases. This shows the knowledge gap that needs to be filled.

Another study indicated that 44.4% of 5th year and 68.5% of 4th year students did not bother to treat any infectious disease as a consequence 61.9% of 5th year candidates found more exposed to non-sterile transcutaneous and mucus membrane inflection compared to 44.6% of 4th year student. Effective efforts are necessary to encourage aptitude, practical

approach and incent the student in positive manner and routine utilization of infection protocol²⁷.

Whilst, study among Jordanian dental students has shown that low standard of understanding regarding cross-infection protocol and recognition of blood-borne morbidity risk exist among pre-clinical students as compared to those doing clinical rotations along with theory interaction²⁸. Thus knowledge, attitude and practice related to cross infection protection is staunchly followed by undergraduate students subjected to study and practice, this in accordance to curriculum in comparison to those performing clinical duties only as in house job. Similarly in a recent study from Nigeria has shown surprising findings that 11.3% of 3rd year and 7.9% of 5th year students knew the approximate time for seroconversion of HIV virus, this deduces that if candidate is un aware of minor details for high risk morbid condition will consequently lead to dis-respect of infection spread protocol eventually²⁹. Similar attitude is observed in the results of current study.

In support to this study, it could be suggested that after completion of each progressive year there must be an exam based on evaluation of disease-spread control competency, and consequently get eligible to appear in 3rd clinical training year, this will inculcate step wise knowledge and shall improve their attitude and practice in the direction of infection control protocols as other alike studies have shown amazing output in progressive manner for such introductions in the five year curriculum³⁰.

CONCLUSION:

Practice of standardized isolation protocol is overall not satisfactory among dental students at Dow University of Health Sciences. The current survey depicted that knowledge regarding infection control measures and a positive response towards them alone does not imply that a practitioner is abiding by the recommendations. Therefore, awareness programs are needed for continuously educating the dental team about cross infection control protocols. Further studies should be conducted to evaluate the differences and improvement in knowledge and practices between different academic years.

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