

Awareness and Practice Regarding Cross Infection Control Among Dental House Officers in a Tertiary Care Setting



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Abstract

Background: Dental care workers including dental assistant & doctors are at joint risk of receiving infection. Cross infection can be defined as “the spread of infection between staff members & patients in clinical setting.” Precautions should be adopted while treating or checking the patients.

Methods: This cross-sectional study of 3 months duration was carried on dental house officers of Multan Medical and dental college Multan. 60 dental house officers willingly participated in our study. Universal sampling technique was utilized in order to collect the data. Informed consent was sign up from the partakers.

Results: Out of sixty dental house officers, males were twenty seven while females were thirty three . 85% participants consider that dental clinics/hospitals are more predisposed to the infection/contamination than other medical fields. 73.3% partakers wash the hands regularly after providing the treatment to every patient. All the partakers reported that usage of PPE has a foremost part in the prevention of cross contamination. Majority of the partakers use gloves as well as facemask but goggles or protective eyewear, head caps & aprons were not in use by most of participants.

Conclusion: Adequate awareness/knowledge but less satisfactory practice about infection control was reported. Knowledge acquired must also be transferred into everyday practice. Continuous infection control education through lectures/ tutorials or seminars must be organized. Cross-contamination control guidelines should also be established by dental colleges.

Keywords: Cross-infection control, dentistry, house officers, protective measures

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Introduction

Cross infection can be defined as “the spread of infection between staff members & patients in clinical setting” (1). Infectious conditions are among the basic problems jeopardizing the security & safety of the health care specialists and patient’s worldwide (2). Infection may spread during dental, surgical & medicinal procedures as health workers are in direct or uninterrupted communication with their patients (3,4). Provision of dental/oral care is not unobstructed from risk. Cross infection throughout clinical training might occur with transfer of infectious agents between health workers & patients in a clinical location. Transmission of infection within dental clinics can also occur through instruments contaminated with secretions or blood, saliva and infected air droplets. (5,6).

In dentistry, the cross-infection may take place via various pathogenic microbes found in mouth & respiratory tract for instance Hepatitis B Virus (HBV), herpes simplex virus (types 2 and 1), Hepatitis C Virus (HCV), cytomegalovirus (CMV), Mycobacterium tuberculosis, HIV/AIDS, staphylococci, streptococci & other viruses or bacteria. Moreover, currently we are existing in an Eco epidemiological period, with worldwide

emergence along with re-emergence of various transmittable conditions. Emerging agents for instance Corona Virus, Middle East Respiratory Syndrome (MERS), H1N1, Ebola, H5N1 & others can similarly be spread throughout oral/dental practice (6-8).

Dental care workers including dental assistant & doctors are at giant risk of receiving infection of HIV or Hep B or both (9) the latter being commonest sickness which might be lethal/fatal (10).

Request for dental/oral events has been intensifying in these modern years as quality control within dental treatment practice is on escalating side and teeth have also great influence on personality & are important for emotional & psychological wellness of people besides chewing, speaking (11,12). Gradually more emphasis is positioned on safety of public in clinical situations so, as a result, risk management & safety is becoming vigorous for entire health workers. Patient safety aimed at restraining treatment errors, augmenting the eminence of the care & following all the protocols to minimize entire cross infection (13-16). A study was conducted in Riyadh KSA, which showed that a small number of patients who attended dental/oral consultation rooms in University of King Saud were seropositive for HCV or HBV, with no clinical

signs/manifestations; besides this they were also not aware about carrying infection too. The study inferred that taking therapeutic history without HCV & HBV screening may result in treating infected individuals as non-infected, this may also increase the vulnerability of cross contamination unless & until strict observance of the standard protections is applied (17).

Results of the other study finalized by appraising the literature on work-related menaces of virus-related infections in the operating zone over the preceding 5 decades showed that risks/perils of virus-related infections stick at the same as of ten years before (18). Continuous upsurge of patients in search of oral health center should give frightening indications to dental surgeons as well as Dental Health-related Programs for improved alertness of additional precautions adopted while treating or checking the patients. These actions are prerequisite for protection of both, the patients & staff members as well (8).

Aim of this study was to assess & check the awareness as well as practice regarding cross contamination control among house officers during the clinical rotation hence we can manage, arrange further courses of training for the house officers.

Methodology

This cross-sectional study of 3 months duration (because the data was collected from paedodontics department and the rotation of dental house officers in this department is of 01-month duration) was carried on house officers of Multan dental college Multan. 60 dental house officers willingly participated in our study. Universal sampling technique was (as we gathered the data from all the 60 dental house officers) utilized in order to collect the data. Informed consent was signed up from the partakers & were told that the responses would be preserved confidentially. Well-planned form was consumed to check answers regarding awareness/ wakefulness as well as practices about cross-contamination control. As mentioned above all the dental house officers were the part of this study.

The self-administered questionnaire embraced of closed ended interrogations related to the awareness as well as practice of cross-contamination control, asepsis, sterilization, methods used for individual protection (usage of PPE), vaccination against Hepatitis B, and practice of usage of PPE while treating the HIV/ HBV infected individuals. Results obtained from participants were calculated & tabulated.

Results

Form was accomplished by sixty dental house officers. Males were twenty-seven while females were thirty-three. 85% participants considered that dental clinics/hospitals are more predisposed to the infection/contamination than other medical fields. 90% of the partakers were totally aware about universal precautions to avert the cross contamination. 73.3% partakers washed the hands regularly after providing the treatment to every patient. All the partakers reported that usage of PPE has a foremost part in the prevention of cross contamination. 80% subjects were of the view that vaccination against the virus of Hepatitis B is obligatory in dental career. 63.3% participants were fully

jabbed against the virus of Hepatitis B. These responses about awareness/ Knowledge of the partakers about cross contamination control are shown in Figure 1. Only descriptive statistics were done and no test of significance was used

Majority of the partakers use gloves as well as facemask but googles or Protective eyewear, head caps & aprons were not in use by most of participants. The protective measures adopted to prevent cross contamination are shown in Table 2.

All the subjects usually maintained the additional precautions while treating AIDS & hepatitis B, C patients. 80% of the partakers use gloves during the disinfection/sterilization procedures. 77.5% subjects use goggles & facemask during the scaling procedure. Practices of the participants about cross contamination control are represented in Figure 2

Table 1: Protective measures adopted to prevent cross contamination

Variable name with category	Yes	No
	Freq (%)	Freq (%)
What protective measures do you take/ adopt to prevent from cross contamination		
(1) Face mask	45 (75)	15(25)
(2) Glooves	51 (85)	9 (15)
(3) Googles/ Protective eyewear	8 (13.3)	52 (86.7)
(4) Head caps	12 (20)	48 (80)
(5) Aprons	5 (8.33)	55(91.7)

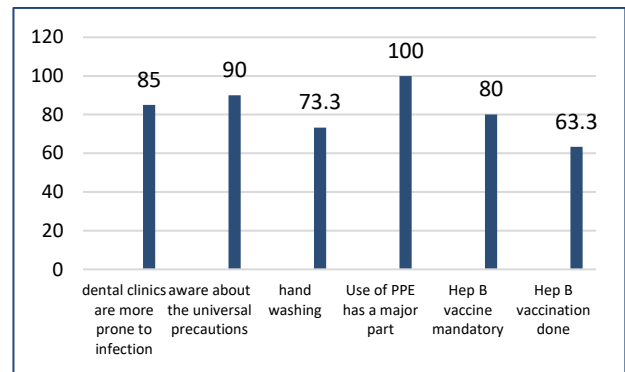


Figure 1: Awareness/knowledge of the participants about cross contamination control

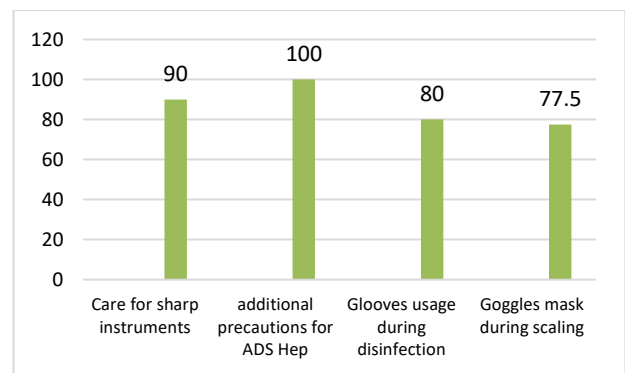


Figure 2: Practices of the participants about cross contamination control

Discussion

In this study, 85% participants think that dental clinics are more prone to infection than any other medical fields. This is in accordance with the results reported in another study (95.8%) (19). This percentage is more when compared with that reported by R. Varshan where 76% of the subjects considered that dental hospitals/clinics are more susceptible to the infection (20). Literature revealed that oral care specialists are exceedingly in danger of getting infection (11,21).

In this study, all the subjects reported that use of PPE has a major part in prevention of the cross contamination. This is similar to the results reported by Javaid M et al where all the respondents believed that PPE plays a major role in prevention of the cross contamination (21). In this study, 90% of the partakers were fully aware about the universal precautions to prevent the cross infection. This is also similar to the results reported by Tahir et al where 94% partakers know about the universal precautions to prevent cross infection. In this survey, 73.3% subjects wash their hands regularly after treating every patient. This is similar to that reported by Tahir et al where 74.6% subjects perform hand washing after every patient (22). This is less than the results reported by Mohiuddin S where the percentage was revealed as 93.3% (23). 93.6% subjects in the survey of Qamar wash their hands before & after patient examination (24).

It is necessary to prepare for the safety measures to evade cross-infection with Hepatitis B. Vaccination against Hepatitis B virus is thought as an occupational safety technique/method & is an economical & safe means to cope with this risky infection. Each of the healthcare providers should pass from the process of vaccination. In case of absenteeism of prophylactic measures like immunization, the chances of getting infection may increase from 6-30% (9,4). Spread of Hepatitis C & B through dental practices/clinics have also been reported in some studies directed in Pakistan (22).

This study indicates that 80% of the partakers agreed that vaccination against Hepatitis B is mandatory in dental profession. This is more than that reported by Ibrahim et al (71.2%) (8) & R. Varshan (73%) (20).

63.3% subjects of this survey revealed that they are fully immunized against the Hepatitis B. The percentage of vaccinated participants is in accordance with other studies where it was reported to be 71.7% & 62% (19,20) & it was less than that reported by Mallick & Alshiddi 93.8% & 94.2% respectively (25,26). The percentage of vaccinated individuals of our study is much more than reported by Ali MF et al, where only 3.8% individuals were vaccinated (27).

Knowledge & practice are among those pillars, which constitute the dynamic structure of life itself. Practice means contemplation or an observation of rules & knowledge that lead the way to action (25).

Universal contamination control policy states "Every patient must be considered as an infectious individual".

Many dental patients might appear clinically healthy & fit according to their medical history & physical examination. Hence, standard precautions or risk management strategies should not be practiced based on patient's appearance. Some cross contamination control routine should always be adopted for each & every patient (19,28).

In order to attain that level of health, the healthcare givers are required to use personal protective equipment & stick to all the regulations and rules of precautions during the medical procedures so that the chances of getting cross contaminations may be avoided or at least minimized (25,29).

75% respondents told that they use facemask as a protective measure. This is similar to the results reported in another study by Javaid M et al 85.6% (29). This is much greater than that described in another study where this percentage was 27.5% (27). This is comparable to that 94% participants of another study who stated that the masks were essential component of cross contamination control (30). This is also comparable to that reported by Mohiuddin S (74.2%) (23).

OSHA & CDC have identified 6 basic areas for the personal barrier protection which are Gloves, Body gowns, Face masks, Rubber dam, Protective eye wear and handwashing & care (28).

85% respondents of this study told that they use gloves which is almost identical to that specified by Maqbool A (88.1%) (31) & is also in accordance to that (96.8%) reported by Mallick (25) & 98% reported by Javaid M et al (29).

Googles/ Protective eyewear & headcaps were used by 13.3%, 20% participants as a protective measure in this study. This percentage of usage of goggles/ protective eyewear is nearer to that reported by halboub (14%) (19) & slightly less than reported in another study 25. This is half of that reported by Mohiuddin S (40.8%) (23). Head covering was used by 25% partakers of another study which is almost similar to this study (21).

Only 8.33% participants used apron in this study, which is almost identical to that specified by Maqbool A (12.7%) (31). Appropriate learning as well as powerful practices of extensive precautionary measures are extremely fundamental in the field of medicine & dentistry (29). 90% of the respondents collect the sharp ended instruments with care to prevent cross infection which is better than the percentage specified in another survey (72.5%) (21).

All the subjects were conscious & reported that they usually maintain the additional precautions while treating AIDS & hepatitis B, C patients which is similar to that (99%) noted in another study (29). 83.6% subjects in the study of Tahir et al said that they use proper universal precautions to treat Hepatitis Infected Pts (22).

80% participants of this study use gloves during the disinfection/sterilization procedures. This is less than that of another study where 90.8% subjects reported the gloves usage during sterilization procedures (29).

77.5% subjects often use goggles & facemask during the scaling procedure, which is more than reported in another study where 51.3% agreed that goggles and facemask should be used for the scaling procedure (21).

Conclusion

Participants in this study showed acceptable & adequate awareness/knowledge but less satisfactory practice about infection control. Knowledge acquired must also be transferred into everyday practice. Such findings highlight that there is the need of continuous infection control education through lectures/ tutorials or seminars. Moreover, dental colleges should also focus on establishing cross-contamination control guidelines at the institutional level.

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