

ORIGINAL ARTICLE

Awareness/ Knowledge and practice about the cross-contamination control among Demonstrators

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ABSTRACT

Background: Cross infection is a type of infection which can spread between three stack holders of the community i.e. Doctors, paramedical staff and the patient. The infectious diseases can spread from doctors to the patients, or patients to the doctors and healthcare workers². These infectious diseases can spread during medical, surgical or dental treatment. Dental treatment is considered as most notorious one to spread cross infection between the healthcare workers and the community.

Aim: To assess & check the awareness/ knowledge and practice about the cross-contamination control among demonstrators

Study design: Descriptive Cross-sectional study

Place and duration of study: Multan Dental College Multan. Duration of this study was 3 months.

Methodology: This study was a cross-sectional survey which was conducted in the dental section of Multan Medical and Dental College Multan where forty demonstrators were included in the study. Data was collected by random sampling. After taking informed consent a questionnaire was filled by the participants.

Results: Out of forty demonstrators. Males were twenty-four while females were sixteen. 95% participants consider that the dental clinics/hospitals are additionally predisposed to contamination/infection when compared with other medical fields. 90% participants wash hands regularly after giving the treatment to each and every patient.

Conclusion: Participants showed acceptable awareness/knowledge and satisfactory practice about contamination control.

Keywords: Cross-contamination control, Demonstrators, Dentistry, and Protective measures

INTRODUCTION

Cross infection is a type of infection which can spread between three stack holders of the community i.e. Doctors, paramedical staff and the patient¹. The infectious diseases can spread from doctors to the patients, or patients to the doctors and healthcare workers². These infectious diseases can spread during medical, surgical or dental treatment^{3,4}. Delivery of the dental/oral care is also not unobstructed from this risk. Dental treatment is considered as most notorious one to spread cross infection between the healthcare workers and the community. There are many ways to spread like spatter, mists, aerosol, blood contaminated instruments and blood contaminated components of barrier technique etc^{5,6}.

During dental procedures many bacteria and virus can cause hilarious diseases like mycobacterium tuberculosis, staphylococcus aureus, influenza virus, herpes infection, mumps, measles, hepatitis A, B and C, and HIV. Dentistry also got intentions during last three years when COVID-19 hit the world badly because it is an air born infection which can spread from one to other by breathing also. Upper respiratory tract is also a good habitat for COVID-19 virus⁶⁻⁸.

Studies showed that many dentists and their personals had experienced major threats from the hepatitis B and Hepatitis C virus during their life. That is why cross infection is one of the serious concerns for not only patients but also for the healthcare workers¹⁰.

As the world is going towards the glamorous life style, need for the dental rehabilitation is becoming the integral part of life. That is why dental treatment is becoming an important part of life and this world is experiencing more dental treatments than earlier^{11,12}. Due to burden on dental clinics it is becoming difficult to maintain cross infection control. Now it is the responsibility of dentists and their healthcare workers that they control the cross-infection diseases among the community and themselves¹³⁻¹⁶. In a study of Riyadh blood samples of many dental patients were sent to lab for serotype of hepatitis B and Hepatitis C virus and it is

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surprising that few patients are positive among those but they don't know about it because they have no clinical symptoms of this virus¹⁷.

Another study stated that infectious diseases can spread very fast among the patients who are previously treated by the dental treatment¹⁸. During last decade viral infection spread more faster than before. That is why the dentist and healthcare workers are more prone to be infected from the patients if the cross-infection control measures will not be taken⁹. Dentists and their personals must be aware of these threats and the also now that how they can seize the cross infection between the community and themselves¹⁸.

Aim of this study was to assess & check the awareness/ knowledge and practice about the cross-contamination control among dental demonstrators henceforth we can manage and arrange further courses of training for them.

METHODOLOGY

This study was a cross-sectional survey which was conducted in the dental section of Multan Medical and Dental College Multan where forty demonstrators were included in the study. Data was collected by random sampling. After taking from IRB permission and informed consent a questionnaire was filled by the participants. All the demonstrators of dental department working at time of this research were included in our study.

This questionnaire encompassed closed ended interrogations associated with awareness/ knowledge as well as cross infection control practice, sterilization, asepsis, and various techniques for protection of healthcare personal (PPE), vaccination status of the Hepatitis B virus, and usage of PPE while treating the HBV /HIV infected folks. Results obtained from participants were collected and tabulated.

RESULTS

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Questionnaire was filled by forty demonstrators. Males were twenty-four while females were sixteen (Table 1). 95% participants consider that the dental clinics/hospitals are additionally predisposed to contamination/infection when compared with other medical fields. 100% partakers were absolutely aware about the universal precautions to avert cross infection. 90% participants wash hands regularly after giving the treatment to each and every patient. All subjects reported that PPE usage has a main part in cross contamination prevention. 90% subjects thought that vaccination against a virus of Hepatitis B is essential in dental career. All the subjects generally maintained additional precautions while giving treatment to AIDS & hepatitis B, C patients. 85% subjects used goggles & facemask while doing the scaling procedure. These responses about an awareness/ Knowledge and practice of the subjects about cross contamination control are shown in Table 2.

Majority of these partakers use facemask and gloves but Protective eyewear or goggles, aprons & head caps were not in use by the most of participants. Protective measures embraced to avert cross contamination are shown in Figure 1.

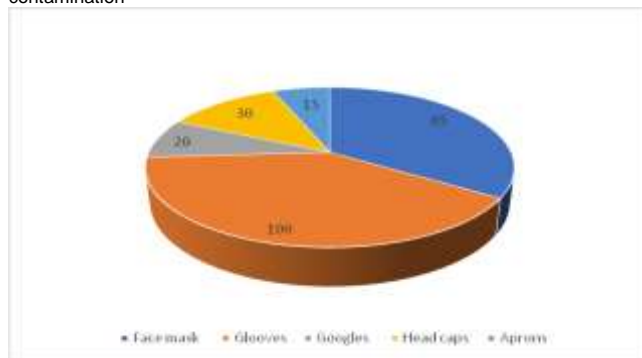
Table 1: Gender distribution

Male	Female	Total
24(60%)	16 (40%)	40

Table 2: Knowledge and practice of participants about a cross contamination control

Variable name with category	Yes Freq (%)	No Freq(%)
Dental clinics are more prone to infection	38 (95)	2 (5)
Awareness about universal precautions	40 (100)	0 (0)
Hand washing before and after treating the patients	34 (85)	6 (15)
PPE usage has a main part in cross contamination prevention	40 (100)	0 (0)
Vaccination against a virus of Hepatitis B is essential in dental career	36 (90)	4 (10)
Additional precautions while giving treatment to AIDS & hepatitis B, C patients	40 (100)	0 (0)
Goggles & facemask usage during the scaling procedure	34 (85)	6 (15)
Care for sharp instruments	38 (95)	2 (5)

Figure 1: Percentage of Protective measures adopted for prevention of cross contamination



DISCUSSION

In this study, most of the participants (95%) concluded that dental clinic caused ore infection than medical one. Halboub et al reached the consequences that their more than 95% participants blamed the dental clinics for the spread of infection¹⁹. R. Varshan's study concluded that 76% participants thought that dental clinic are more vulnerable to cross infection²⁰. Many researchers stated that dental care givers are more prone to viral and bacterial infection^{11,21}.

In this study all participants thought that Personal Protection Equipment play a major role to protect the healthcare workers

against infectious diseases spread by dental clinics. Javaid et al also concluded that Personal Protection Equipment protected the healthcare workers against cross infection²¹. In current research, all the participants were aware about practicing the universal precautionary measures against the cross infection in the dental clinics. Tahir et al resulted that 94% participants were fully aware of universal precautionary measures and the reason of this low proportion than that of current study is that he used the undergraduate population for the study. In this survey, 85% participants washed hands regularly after giving treatment to every patient. This is better than that stated by Tahir and colleagues where 74.6% contributors used to wash hands after each procedure²². This is fewer than results told by another researcher where this percentage came out to be 93.3%²³. 93.6% contesters in a survey of Qamar et al washed their hands beforehand and afterwards patient examination²⁴.

Hepatitis B is very danger virus which can cause liver damage within no time. Universal precautionary measures and vaccination are the economical and easy way to protect healthcare workers against this virus. Each healthcare worker should complete his/her vaccination before joining the dentistry. Chances of getting Hepatitis B infection can get raised up to 30% if preliminary precautions were not taken^{9,4}. A few studies in Pakistan noticed that dental treatment increased the rate of hepatitis B and C infection²².

This study shows that 90% of contributors believed that jab against a Hepatitis B is required in profession of dentistry. This is more when compared with percentages of Ibrahim et al (71.2%)⁸ & R. Varshan (73%)²⁰. In the researches of Mallick & Alshiddi, majority of subjects were fully vaccinated^{25,26}. While merely 3.8% folks were vaccinated in study of Ali MF et al²⁷.

Every individual who see dental treatment should be considered as infected. The reason of this contemplation is that any people does not now that they have certain infection because infection is at subclinical level and undiagnosed and sometime few patients hide their disease due to fear of refusal of getting dental care own to their disease. So, healthcare workers should take universal precautionary measures against all the patients treated in dental surgery^{28,19}.

In order to accomplish that level of health, the health care givers are advised to use personal-protective equipment & also stick to all rules and guidelines of precautions during medical/dental procedures so that all chances of receiving cross contaminations may well be eluded or at-least minimized^{29,25}.

Face mask is an integral part of cross infection control. In the current study eighty five percent participants thought that face mask is necessary part of cross infection control. This percentage is comparable to that of Javaid research where about 86% participant were in favor face masks²⁹. Another research contributed that only 27.5% participants thought that face mask could decrease the spread of infection among the community and healthcare workers²⁷. The reason of this vast difference is that latter one studied on the populations who have low and variable educational and socioeconomic level than that of current study. This is also comparable to that ninety-four per cent partakers of one more investigation who quantified that masks were indispensable component of cross-contamination control³⁰.

OSHA & CDC have already identified 6 basic areas for personal barrier protection which are Gloves, Rubber dam, Face masks, Body gowns, Eye wear and hand-washing plus care²⁸. Gloves were used by all subjects of this research which is almost alike that listed by Maqbool A (88.1%)³¹ & is also in harmony with that (96.8%) testified by Mallick²⁵ & 98% told by Javaid M et al²⁹. Eye wear & head caps were used by 20%, 30% contestants of this study. This percentage is closer to that conveyed by Halboub (14%)¹⁹ and a little less than stated by another researcher²⁵.

Only 15% of our participants agreed that long protective gown should be wear during dental treatment. This percentage is comparable to the study of Maqbool where 12.7% participants used gown for the treatment.³¹ Good cross infection control should

only be achieved by practicing strictly the universal precautions in the field of medicine as well as in dentistry^{29,32}.

In the current study most of the participants (95%) practiced universal precautionary measures during handling of sharp instruments. This percentage is higher than that of other study where 72.5% followed proper guidelines during the use of sharps²¹. 85% respondents often use goggles as well as facemask during procedure of scaling, which is better than reported in one more research where 51.3% believed that facemask and goggles should be in use during scaling and polishing procedure²¹.

CONCLUSION

Participants have good knowledge and awareness regarding the guidelines of cross infection control in the dentistry. There is always a need of continuous education program of cross infection control through lectures and tutorials. Furthermore, dental schools should also concentrate on establishment of guidelines for cross-contamination control at institutional levels.

Conflict of interest: Nil

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