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ORIGINAL ARTICLE

Knowledge, Awareness & Practice about Cross Contamination Control among the Students of Dentistry

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ABSTRACT

Background: Cross contamination is stated as "Spread of infection between staff members & patients in clinical setting". Cross infection throughout clinical training might occur with transfer of infectious agents between health workers & patients in a clinical location. Dental care workers including dental assistant & doctors are at giant risk of receiving infection.
Aim: To assess the awareness/knowledge & practice about cross contamination control among students of dentistry
Study design: Cross-sectional study
Place and duration of study: This study of 3 months duration was carried on students of Multan dental college Multan.
Methodology: 60 students willingly participated in our study. Simple random sampling technique was utilized in order to collect the data. Well-structured Performa was consumed. Informed consent was sign up from the partakers.
Results: 85% participants consider 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.
All the subjects usually maintained the additional precautions while treating AIDS & hepatitis B, C patients. 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.
Conclusion: Participants of our study showed adequate & sufficient awareness/knowledge but less satisfactory practice about contamination control. Knowledge gained should also be transferred into daily routine practice
Keywords: Cross contamination control, Dentistry, Students, and Precautionary measures

INTRODUCTION

Cross contamination is stated as "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 patients worldwide[2]. Infection might occur during dental, surgical & medical procedures as health workers are in direct communication with their patients[3,4]. 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 & 1), Hepatitis C Virus (HCV), cytomegalovirus (CMV), HIV/AIDS, Mycobacterium tuberculosis, staphylococci, streptococci & other viruses or bacteria. Moreover, currently we are existing in an ecoepidemiological period, with worldwide emergence along with re-emergence of different transmittable conditions. Emerging agents for instance Corona Virus, Middle East Respiratory Syndrome (MERS), H1N1, Ebola, H5N1, & others can similarly be spread during dental/oral 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 as well as psychological wellness of individuals besides chewing, speaking[11,12]. Gradually more emphasis is positioned on safety of public in clinical locations so, as a result, risk management & the safety is becoming essential for health workers and entire profession. Patient safety aimed at restricting treatment errors, amplifying the eminence of the care & following those protocols which minimize crossinfection[13-16]. A study was directed 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 carring 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 treatment should give frightening indications to dental surgeons as well as Dental Health-related Programs for better awareness of extra precautions adopted while treating or checking the patients. These actions are prerequisite for protection of both, the patients & staff members as well[8].

Aim & objective of this research was to assess the awareness/knowledge & practice about cross contamination control among students of dentistry during their clinical rotation so that we can organize & manage additional training courses for the students.

METHODOLOGY

This cross-sectional study was conducted on students of Multan dental college Multan after IRB permission. 60 students willingly participated in the research. Informed consent was reserved from partakers and communicated that their answers would be preserved confidentially. Well-structured Performa was consumed to catch the answers regarding awareness/ Knowledge & practices about cross contamination control.

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The questionnaire included the closed ended queries linked to the awareness/knowledge & practice of cross contamination control, sterilization & asepsis, use of PPE (methods of individual protection), practice of usage of the PPE toward oral/dental treatment of the hepatitis or HIV infected individual and Hepatitis B vaccination. Results attained from the partakers were calculated and then displayed in the form of graphs & tables.

RESULTS

Performa was accomplished by sixty students. Males were twenty-seven while females were Thirty three (Table 1). 85% participants consider 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 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. 80% subjects were of the view that vaccination against the virus of Hepatitis B is obligatory in dental career. 53.3% participants were jabbed against the virus of Hepatitis B. These responses about awareness/ Knowledge of the partakers about cross contamination control are shown in Figure 1.

Table 1: Gender distribution

Male	Female	Total
27(45%)	33(55%)	60

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

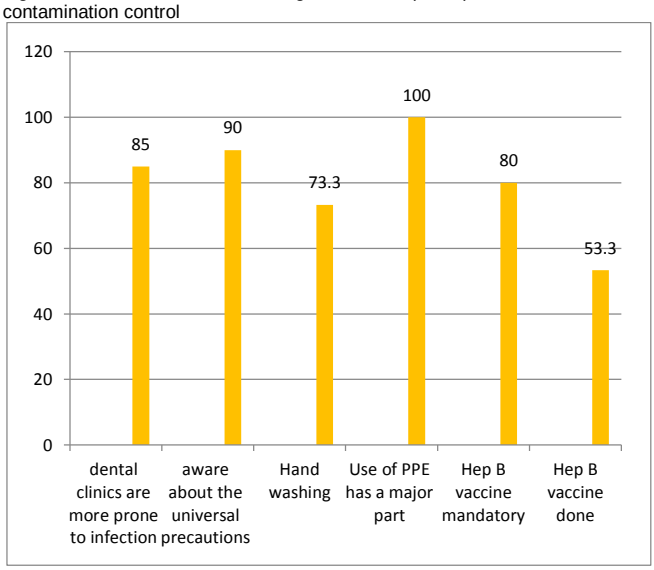

Table 2: Practices of the participants about cross contamination control

Variable name with category	Yes Freq (%)	No Freq (%)
What protective measures do you take/ adopt to prevent from cross contamination		
Face mask	39(65)	21(35)
Gloves	51(85)	9(15)
Gloves/protective eyewar	6(10)	54(90)
Head caps	9(15)	51(85)
Aprons	5 (8.33)	55(91.7)
I usually maintain the additional precautions while treating AIDS & hepatitis B, C patients?	60(100)	0
Sharp ended instruments should be collected with care to prevent cross infection	51(85)	9(15)
I use gloves during the disinfection/sterilization procedures	45(75)	15(25)
I often use goggles & facemask during the scaling procedure	46(76.6)	14(23.4)

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. All the subjects usually maintained the additional precautions while treating AIDS & hepatitis B, C patients. 75% of the partakers use gloves during the disinfection/sterilization procedures. 76.6% subjects use facemask & goggles during the scaling procedure. Practices of the participants about cross contamination control are represented in Table 2

DISCUSSION

In this study, 85% participants consider that dental clinics/hospitals are more predisposed to the infection/contamination than other medical fields. This is in harmony with results stated in another study (95.8%)[19]. This percentage is greater when related with that described by R. Varshan where 76% of the partakers considered that dental clinics/hospitals are more liable to infection[20]. Literature has also shown that oral care professionals are remarkably in danger of accomplishing infection[11,21].

In this study, all the partakers reported that usage of PPE has a foremost part in the prevention of cross contamination. This is like the results told by Javaid M where every respondent believed that PPE has a foremost part in the prevention of cross contamination [21]. In this study, 90% of the partakers were totally aware about universal precautions to avert the cross contamination. This is also similar to the result reported by Tahir et al where 94% contributors know about universal precautions to avert cross infection. In this survey, 73.3% contributors wash the hands regularly after providing the treatment to every patient. This is almost alike the result conveyed by Tahir et al where 74.6% respondents carry out hand washing after providing the treatment to every patient [22]. This is not in agreement with the result described by Mohiuddin S where this percentage was 93.3%[23]. While 93.6% respondents in the investigation of Qamar washed their hands beforehand & after the examination of patients[24].

It is obligatory to prepare for those safety measures which evade cross-contamination with the virus of Hepatitis B. Jab against HBV is believed as job-related safety method/technique & it is also a cost-effective & safe means to deal with this perilous infection. Each and every healthcare worker should pass from this process of jab. In the event of absenteeism of observance of prophylactic measures like inoculation, the probability of receiving infection may surge from 6-30%[9,4]. Spread of this lethal Hepatitis C or B through dental clinics/ practices have also been stated in some surveys or investigations carried out in Pakistan[22].

This study directs that 80% of the applicants agreed that inoculation against the virus of Hepatitis B is compulsory in the profession of dentistry. This is slightly more than reported by & R. Varshan (73%)[20] & Ibrahim et al (71.2%)[8]. 53.3% participants of this investigation told that they are jabbed against HBV. The percentage of inoculated partakers is fewer when compared with other surveys where it came out to be 62% & 71.7% [20,19] & similarly it was less than that described by Mallick and Alshiddi 93.8% & 94.2% respectively[25,26]. The proportion of inoculated individuals of my study is much better than conveyed by Ali MF et al, where just 3.8% individuals were jabbed[27].Whereas in the study of Ahmad et al 68% participants got jab against hepatitis B[28]. “Knowledge and the practice are among those pillars, which establish the dynamic structure of the life itself. Practice means an observation or contemplation of rules & the knowledge that guide to action[25]”.

Worldwide contamination control policy says, “Every single patient must be assumed as an infectious individual”. Several dental patients might look clinically healthy as well as fit according to the physical examination & their medical history. Henceforth, risk managing strategies or standard precautions should not be performed based on the appearance of patient. Similar practice & routine of cross contamination control must always be implemented for all the patients[29,19].

In order to accomplish that good level of health, it is essential for healthcare professionals to use PPE (personal

protective equipment) and completely stick to the directions and guidelines of precautions throughout the medical procedures, in order to avoid or else minimize the likelihoods of attaining cross contaminations [30,25].

Sixty five percent contributors confirmed the usage of facemask as a shielding measure. This is fewer than results reported in one more study by Javaid M et al (85.6%)[30]. This is far greater when compared with the percentage (27.5%) of another survey[27]. This is also less than that 94% participants of one more survey who specified that the masks were crucial component of the cross-contamination control[31]. This is identical to that mentioned by Mohiuddin S (74.2%)[23]

OSHA and CDC have acknowledged 6 primary areas for individual barrier protection. They are Face masks, Gloves, Body gowns, Protective eye wear, Rubber dam & handwashing with care[29]. 85% subjects in this study reported gloves usage, which is nearly identical to that quantified by Maqbool A (88.1%)[32] & is less than that (96.8%) stated by Mallick[25] & 98% described by Javaid M et al[30]

Googles/ Protective eyewear and head caps were used by 10, 15% partakers respectively as a shielding measure in our study. This percentage of googles/ protective eyewear's usage is similar to that identified by halboub (14%)[19] & a little less than reported in one more study[25]. This is less than half of that described by Mohiuddin S (40.8%)[23]. Head covering was in use by 25% contributors of another examination which is almost same as of this study[21].

Only 8.33% participants of this study used apron, which is in accordance to that described by Maqbool A (12.7%)[32]. Pertinent learning along with powerful practices of widespread precautionary measures are tremendously fundamental in the fields of dentistry and medicine[30]. 85% of the subjects collect the sharp-edged instruments carefully to avert cross contamination which is better than the percentage quantified in another survey (72.5%)[21]. All the participants were conscious and careful & reported that they regularly maintain the extra precautions while providing the treatment to AIDS & hepatitis C, B patients which is in accordance to that (99%) found in another study[30]. 83.6% subjects enrolled in survey of Tahir et al told that they follow proper universal safety measures to treat the Hepatitis Infested Pts[22].

75% subjects enrolled in our study used gloves throughout the procedures of disinfection/sterilization. This is fewer than that of one more survey where 90.8% participants reported the gloves use during sterilization procedures[30]. This study also reveals that 76.6% participants frequently use goggles and facemask throughout the procedure of scaling, which is more than stated in one more study where 51.3% agreed that mask for face & goggles ought to be utilized for the procedure of scaling[21].

CONCLUSION

Participants of our study showed adequate & sufficient awareness/knowledge but less satisfactory practice about contamination control. Knowledge gained should also be transferred into daily routine practice. These outcomes highlight that there is a need of continuous & regular contamination control education through seminars or tutorials/ lectures. Furthermore, dental colleges/ institutions should also pay emphasis on establishing the cross infection control guidelines at institutional level.

Conflict of interest: Nil

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