SHORT COMMUNICATION

PATIENT'S PERCEPTION ABOUT CROSS-INFECTION PREVENTION IN NISHTER INSTITUTE OF DENTISTRY (NID), MULTAN, PAKISTAN

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ABSTRACT

Cross-contamination is the transmission of microbial agents from one subject to another. It can be spread from individual to individual or through infected agents. The source of cross-infection can be saliva, blood, body secretions, infected instruments with blood, and necrotic tissue debris**.** Every year lives are lost because of the spread of infections in hospitals becomes a serious cause of world public health issues. In this descriptive cross-sectional study, a consecutive sampling technique was applied in the periodontology department of Nishter Institute of Dentistry, Multan. 450 participants completed a questionnaire. Self-administered close-ended questionnaire in the English language was used and used local language to familiarize with the questionnaire. Results of the study revealed that 68 – 89% of the participants had a satisfactory level of knowledge about infection and infection prevention and most of them were well educated. 239 participants perceived that AIDS and Hepatitis can be transmitted during dental treatment. Regarding self-reported practice, most of the participants were aware of the fact that sterilized instruments should be used during dental treatment. 89.8% of participants stated that dentists should wear gloves and facemasks to prevent cross-infection from dentist to patient and vice versa. There was a statistically significant difference between occupation and personal protective equipment. There was enough knowledge and awareness of patients presented to the periodontology department of Nishter Institute of Dentistry regarding the infections which can spread in dental clinics like hepatitis and AIDS. There is an increased need in enhancing the awareness of the patients through social media, and also a need to provide knowledge of patients about cross-infection and how can it be prevented through educational programs both for the patients and service providers. It can also be done through awareness campaigns in different shopping places and educational institutes and public places.

Key Words: Infection control guidelines, Personal protective equipment, Health care workers, World Health Organization, Centre of Disease Control

BACKGROUND

Cross-contamination is the transmission of microbial agents from one subject to another. It can be spread from individual to individual or through infected agents. The source of cross-infection can be saliva, blood, body secretions, infected instruments with blood, and necrotic tissue debris.[1,2] Dental health care providers are directly exposed to blood-transmitted infections such as Hepatitis B (HBV) and Hepatitis C (HCV) viruses, staphylococci, streptococci, and HIV (human immunodeficiency virus), mumps, influenza, rubella, and Mycobacterium Tuberculosis[2,3] patients are ignorant of the disease process as antibodies produce against infection by the body is detectable after long incubation period.[4]

Knowledge and attitude also play a very important role in the prevention of transmission of infection in dental facilities**.**[5] The current study emphasized that the information regarding the cross-contamination practices of oral health professionals and assistants for dental facilities and patients' perceptions regarding to generated information will be helpful for the implementers to apply the guidelines for contamination control practices in the working places. In 1986, the Center for Disease Control and Prevention (CDC) issued a paper of recommendations for infection control in dental settings.[6] The Occupational Safety and Health Administration (OSHA) also published guidelines to prevent the spread of infection.[7] British

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This article can be cited as: Joiya Q, Abdullah S, Tasneem S, Kayani JA, Gul T. Patient's perception about cross-infection prevention in Nishter Institute of Dentistry (NID), Multan, Pakistan. Infect Dis J Pak. 2023; 32(2): 69-72.

Receiving date: **07 Apr 2022** Acceptance Date: **26 Apr 2023**
Revision date: **10 Oct 2022** Publication Date: **30 Jun 2023**

Dental Association also issued guidelines for Infection Control in Dentistry.[8] In addition, other measures are also developed for infection control. CDC and WHO also developed guidelines for hand hygiene practices.[9] Most of the patients have good knowledge regarding wearing of gloves by dental health professional during dental procedures but have less knowledge of wearing of face masks during dental practices, Moreover, they were so much afraid of HIV infections in their community and they did not prefer those dental clinics where they knew that HIV patients were treated.[3] Dental infection is the main cause of the burden of communicable diseases in Pakistan. Increased awareness of patients about cross-infection control methods adopted by dental health care providers will help hopefully, to ask and remind them to adopt all essential precautions for the prevention of cross-infection and to save their lives as well. Hence, this survey helps to reveal the perceptions in dental patients about infection control practices visiting Nishter Institute of Dentistry Multan (NID), Pakistan

MATERIAL AND METHODS

A descriptive Cross-Sectional survey was conducted at Nishtar Institute of Dentistry, Multan. All OPD patients in NID who visited the Periodontology Department, constituted the sample of 450 patients between May 2019 to August 2019 were recruited in the study. A consecutive sampling Technique was applied. Self-administered close-ended questionnaire in the English language was used in this study, which was explained to the participants in local language by dental health professional. All the adult patients (more than 15 years) who visited for dental treatment were recruited for the study. The patients who refused to be a part of the study were excluded from the study.

A Statistical package, SPSS version 20 was used for data entry and Analysis. The mean age and frequency of different attitudes were analyzed by Descriptive analysis. Chi-square was also done to see the statistical significance.

RESULTS

Results showed that among the participants 60.7% were female while 39.3% of participants were male. 65.3% of participants were between the age group of 16-32 years. 27.3% of participants were between age group of 33-48 years. Only 7.3% of participants were in the age group of 49-65 years. 27.1% of the respondents were jobless. 12.4% of participants were doing government jobs while 24.2% were doing private jobs. 5.8% of participants were businessmen while 30.4% were doing other jobs. The majority of the participants 26.4% were bachelor's degree holders and 10% were below matric level. 38.4% of the respondents belonged to the socially deprived class.

Compared to males, female patients said that dentists should use personal protective equipment's. There was significance between gender and facemasks wear (P-Value 0.028). There was also an association between gender and glasses wear (P-Value 0.001).

Table-I: Degree of knowledge or agreement

Degree of agreement Statement	*Agree*	*Disagree*	*Don't Know*
Disease can be caused during the dental procedure via instruments	63.6%	20.4%	16%
AIDs and Hepatitis can be transmitted together	4.7	95.3	-
Only one disease can be transmitted at a time	15.1	84.9	-
Clean instruments should be used	90.1	-	9.9
Delayed next visit due to the fear of cross-infection	50.7%	49.3	
Dentist should always follow the cleanliness of instruments	76.4	10.4	13.2
Dentist should always wear new pair of gloves	89.8	10.2	-
Cross-infection can be prevented by using new pair of gloves	27.3	72.7	-

Table-II: Gender and personal protective equipment's

Question	Gender	Yes	No	P Value
Necessary to wear gloves	Male	158	19	**0.773**
	Female	246	27	
Necessary towear facemasks	Male	152	25	**0.028**
	Female	252	21	
Necessary to wear glasses	Male	104	73	**0.001**
	Female	203	70	

DISCUSSION

This is the first kind of short communication about patient's perception regarding cross-infection prevention in Pakistan which was conducted in Nishter Institute of Dentistry, Multan. Although many studies had been done on dentists and dental assistants, but this was the first study that was conducted to assess patient's perception.

89.8% of participants of this study perceived that gloves should be used in dental clinics to avoid cross-infection. This value was slightly higher than the study which was conducted in Nigeria[3] which showed that 88.8% of patients responded that dentists should wear gloves while caring their patients and in comparison with the study which was conducted in Egypt[10] which showed the percentage of 90% of respondents agreed that dentists should wear gloves to prevent cross-infection. These results were also higher than the studies conducted by Jorden[11], 87%, and Burke *et al*[12] 84% to wear the gloves during procedure[13] another study in which the percentage was 69%, 264 participants perceived that wearing gloves protected the transmission of infection from one patient to another patient, while 258 patients stated that it is used to prevent infection from dentist to patient. When it was asked from patients for facemask wear, 89.8% stated that it is necessary for dentists to wear facemasks and this value is same as for gloves wear. Studies conducted by Mousa *et al*[2] and Porter *et al*[14] showed the values 72% and 73% respectively for facemasks wear, which are lesser than the results of this study. The most important reason which was mentioned by the patients in this study was that facemasks prevent cross-infection from one patient to another patient. Response for the use of eyeglasses used by dentists during dental treatment was 68.2% which showed a higher percentage than a study conducted in Egypt[10] (37%) in and by Porter *et al*[14] in Hong Kong and Great Britain, i.e. 37% and 44%, respectively. This low value showed that there is less awareness among people about infection spread by splashes which were produced during dental treatment and cause infections via lachrymal route. 73% of patients were aware of the disease of HIV and Hepatitis. Statistical significance between gender and all other study variables was not found. This was accordance to the Nigerian study[3], that study also showed that there was no statistical significance between gender and transmission of HBV, HCV, HIV. for that appropriate and powerful practices of widespread precautionary measures complete HBV vaccination among dental health professionals are important to evade transmission of contaminations while performing various dental procedures.

However, statistical significance was found in the Egyptian study[2], among males and females and other study variables of cross-infection prevention. This difference was because females were more concerned about dental hygiene than the male participants who were least bother about dental hygiene. A statistical significance was found between education and knowledge regarding HIV and Hepatitis. Participants who had graduation were more knowledgeable than the other participants.

The current results reflect the self-reported cross-infection awareness among a population with a relatively high socioeconomic status (as judged by reported income and education). Therefore, caution is advised in generalizing as this is a rather unique population, not representative of the general Jordanian population. Future studies with a larger and more community-representative sample to assess the effect of patient knowledge of cross-infection control measure on the dentist's behavior and commitment to use infection control measures are warranted.

CONCLUSION

This cross-sectional study revealed that there is a satisfactory level of knowledge and awareness regarding cross infections that can spread in dental clinics like Hepatitis and AIDS, but have good knowledge that how these infections are avoided in dental clinical settings. There is an increased need in enhancing the awareness of this issue through educational programmes. There is limited knowledge of certain aspects of infection control among patients visiting he dental department of public sector NID, Multan. In the future, further studies are recommended to assess the dentist's behavior and commitment to using infection control practices.

LIMITATIONS

This study was conducted in public sector hospital and

cannot be generalized, for generalizing the results these types of studies required comparison with private sector hospitals with large sample size and mix socio-economic background.

RECOMMENDATIONS

A rational and practical schedule for the barrier of cross-contamination and cross infection to minimize the combination of transmission of infections should be followed. All medical staff should protect themselves by making it sure that they are fully vaccinated against Hepatitis B and other communicable diseases. In the working place, it is the liability of dental health professionals to make all employees conscious of the principles of infection control. Suitable infection control safety measures should be provided and should be in use regularly. Training of the assistants should be done annually; Immunization condition of all personnel should be maintained throughout service.

CONFLICTS OF INTEREST

The authors declare no conflicts of interest

AUTHOR CONTRIBUTION

Qaisar Joiya: Qaisar was involved in data collection and drafted the outline of the article.

Shamima Abdullah: Shamima and Jawwad contributed in data analysis.

Tahira Gul: contributed in drafting, proof read and finalized the manuscript.

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