



Research Article

## Perception of Infection Control Guidelines among Dental Patients in Islamic International Dental Hospital, Islamabad. A Cross-sectional Study.

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**Received Date:** April 15, 2021

**Publication Date:** May 01, 2021



## Abstract

**Objective:** The aim of the study was to investigate the knowledge, attitude and practices of dental patients regarding infection control at Islamic International Dental Hospital, Riphah International University, Islamabad.

**Materials and Methods:** A self-designed questionnaire in a printed form was circulated among 375 patients visiting Islamic International Dental Hospital, Islamabad. It consisted of 19 statements divided into 3 sections to assess the Knowledge, Attitude and practices of the patients. Informed consent was taken before handing them over the form. The data was analyzed and the results were calculated through SPSS version 23.

**Results:** Among the participants, 194 were females and 181 were males. 68.5% of the participants reported that they visit a dentist when needed. The majority of the patients were positive that the dentists should wear masks, gloves and goggles while treating the patients and almost 58.1% of the patients bothered about the disinfection and 88% about sterilization of instruments used for their treatment but almost 50% reported that they don't ask their dentists about the disinfection of dental chair.

**Conclusion:** Patients attending Islamic international hospital Islamabad had adequate knowledge of wearing face masks, gloves and goggles by dentists during the dental treatment to control cross-infection. However, better knowledge should be given to the patients through educational programs.

**Keywords:** Dental Patients, Infection Control, disinfection.

## Introduction

Each patient has a right to get the best treatment and care at whenever point he/she comes to the hospital nevertheless of his or her health status at the hour of a hospital visit. (1) Cross infection is defined as "a transmission of infectious agents among patients and staff within a clinical climate. (2) Transmission may occur from person to person or through infected objects. (3) Cross infection may be through direct or indirect means as well as contaminated hands are the main source of cross-contamination. (4) In dentistry, the cross-infection can happen through many pathogenic organisms



found in the respiratory tract and oral cavity. Examples of these organisms are cytomegalovirus (CMV), hepatitis B virus (HBV), hepatitis C virus (HCV), HIV/AIDS, herpes simplex virus (HSV type 1 and type 2), staphylococci, streptococci, Mycobacterium tuberculosis and other viruses and bacteria. (5)

Blood-borne infections such as HCV, HBV, HIV/AIDS and other arising blood-borne pathogens represent the main risks for the transmission of infectious diseases in dental practices. Exposure to body fluids and blood needs incredible attention from both patients and dental health care providers. (6) An investigation done in Riyadh, KSA showed that 3.2% of the female patients who went to the dental facilities of King Saud University had seropositive HCV and HBV. (7) Routine use of the barrier techniques such as spectacles, gloves, masks have been reported to be significant in preventing the three routes of transmission (patient to the dentist, dentist to patient and patient to patient) in the dental clinic. (8)

Investigations have also shown that individuals favored their dentists who cling to severe infection control protocols and the use of barrier techniques. (9) Likewise, the non-stop expansion in the of patients looking for dental facilities should offer alarming signs to dentists and dental health care programs for better awareness of extra-precautions while treating the dental patients. These measures are required for ensuring both the staff members' and the patient's safety. (10) Although numerous protocols and proposals are given by dental and medical societies as well as government organizations, investigations have shown that infection control is still not efficient in some dental hospitals and practices. (11) Recognizing knowledge, attitude and practice (KAP) of patients towards infection control methods in dentistry is a significant issue. In dentistry, most of the studies about infection control were done on dentists and dental students. (12) Only a little literature is present regarding this knowledge among patients. Our study aimed to access the perception of infection control guidelines among patients visiting Islamic International Dental Hospital, Islamabad.

## Methodology

This cross-sectional study is a survey of knowledge, attitude and practices of dental patients regarding infection control at Islamic International Dental Hospital. A self-designed questionnaire was used after ethical approval from Islamic Research Committee. A total of 375 patients were considered to be the representative of a total number of patients who visited IIDH in 3 months. The study included patients aged 16-80 years of both genders. Patients with severe illnesses and patients with mental diseases were excluded from the study. The sample size was calculated through the established formula of WHO.



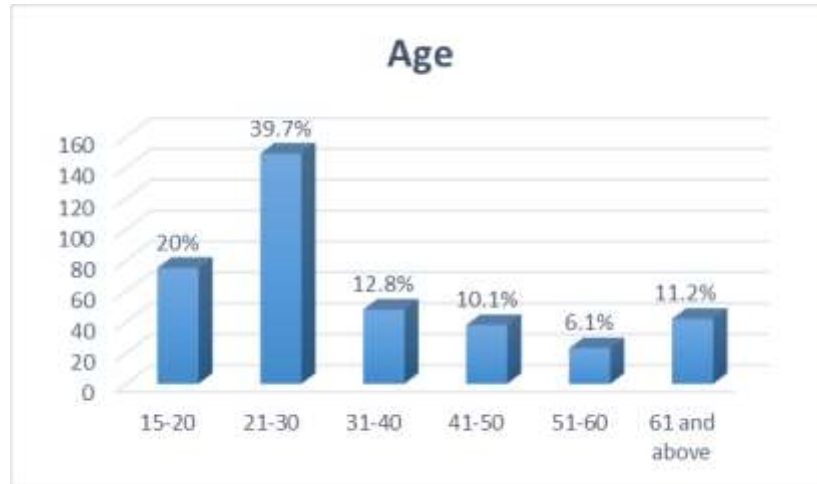
The survey was conducted between 11th September 2020 and 31st December 2020. The questionnaire was distributed in two ways, the patients having access to mobile, internet and WhatsApp were sent a link to google form after their consent and the patients who did not have access to the internet were requested to fill the hand printed form. In the study survey, no personal information was captured. Also, the confidentiality of the participants was maintained throughout the study. A structured questionnaire adapted from researches based on the review of relevant literature was used. This study consisted of 19 statements divided into different sections. Section A was related to demographic information. It consisted of 4 statements like age, gender, occupation and education. In section B knowledge and attitude were assessed. It was assessed through 11 statements related to patients' knowledge about personal protective equipment that dentists should wear such as gloves, masks, gowns and goggles. Section C consisted of 4 statements related to practice. A three-point scale was used for several statements that had the options "yes", "no" and "maybe".

Responses from the questionnaire were entered in spss version 23 to apply various statistical tests and calculate results.

## Results

### Demographics and Participants' Information:

This study included 375 patients visiting Islamic International Dental Hospital in three months. The majority of the participants were females (n=194) and 181 were males. Most of the participants (45.9%) reported that they had completed their Bachelor's degree. When asked how often did they visited the dentist, the highest response (68.5%) recorded was "when needed". Around 136 of the participants were salaried and 9.3% had their own business. The majority (39.7%) of the patients were from the age group of 21-30 years. **(Figure 1)**



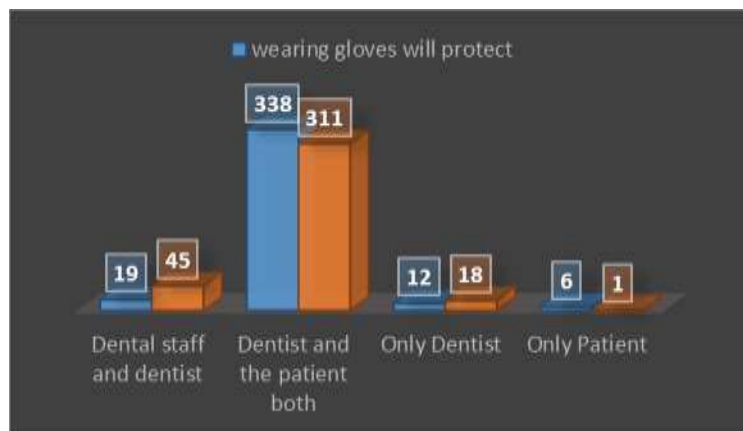
**Figure1** showing the age of participants

### Knowledge

52.5% of the patients believed that the dentists should wear gloves, masks and goggles while treating their patients while 4.3% chose the option that a dentist should wear only gloves while treating their patients (**Figure 2**).40.5% of the patients believed that dentists replace their gloves after receiving phone calls and 28.8% were not sure. The majority of the patients choose the option “No” when asked if a dentist can treat more than one patient with the same pair of gloves while 6.1% were unsure. 261 and 286 of the participants said that they would be reluctant to receive treatment from a dentist who is not wearing a face mask and gloves respectively.88% of the patients responded that they bothered about the sterilization of instruments used for their treatments and 75.2% believed that they could catch an infection during dental treatment. The majority (58.1%) of the patients bothered about the disinfection of the dental chair before sitting on it (**table1**).90.1% and 82.9% of the patients thought that wearing gloves and masks respectively will protect dentists and the patients both. (**Figure 3**)



**Figure 2** showing responses of the patients regarding what protective measures should a dentist take during treatment.



**Figure 3** response of the patients to the statement “according to you, wearing gloves will protect”

**Practices**

35.2% of the patients asked their dentists how they sterilize their instruments while 12.3% choose the option “maybe”.70.1% and 60.3% of the patients said that they would ask their dentist to wear gloves and masks receptively if they were not wearing any during the procedure. The majority of the patients (49.9%) said that they don’t ask their dentist if they have disinfected the dental chair before they sit on it.



	Yes	No	Maybe
<b>Knowledge</b>			
Can dentist treat more than one patient with a pair of gloves	6.9	86.9	6.1
Do you believe that dentist replace gloves after receiving phone calls	40.5	30.7	28.8
Do you believe that you can catch infection during dental treatment	75.2	6.1	18.7
Do you bother about the disinfection of the dental chair before sitting on it	58.1	24.5	17.3
Do You bother about the sterilization of instrument used for your treatment	88	8	4
Will you be reluctant to receive treatment from a dentist that is not wearing face mask?	69.5	20.8	9.6
Will you be reluctant to receive treatment from a dentist that is not wearing gloves?	71.5	22.9	5.6
<b>Practices</b>			
Do you ask your dentist how they sterilize their instruments	35.2	52.5	12.3
Do you ask your dentist if they have disinfected the dental chair before you sit on it?	34.1	49.9	16
Do you ask your dentist to wear gloves if they were not wearing any during treatment	70.1	18.4	11.5
Do you ask your dentist to wear the facemask during treatment if they are not wearing any?	60.3	26.1	13.6

**Table 1** showing responses of the patients

## Discussion

This study assessed the knowledge, attitude of dental patients towards infection control measures in Islamic International Dental Hospital, Islamabad. Not all infection control techniques were explored because of concern that a bigger number of things would decrease the response rate. Likewise, there is proof that self-reports may overestimate consistency with recommended infection control procedures.



The outcomes presented show the opinions of dental patients of IIDH. Regardless of which such conclusions would be held on a cross-country premise remains to be determined by conducting similar surveys in government and private dental schools of Pakistan. Following infection control rules and applying the necessary protection can forestall most of the unintentional exposure in dental consideration. Standard practices and utilization of proper precautions, pre-exposure immunization and post-exposure prophylaxis are likewise fundamental for forestalling transmission of blood-borne diseases and other dentally gained cross-contaminations. (13)

In our study females obtained a slightly better knowledge score compared to males. These results agree with the results of Barlean et al from Romania. (14) The individual responses to the utilization of barrier methods for infection control changed among various investigations when compared with the current examination. The wearing of gloves by dental specialists undertaking clinical strategies has been suggested as a fundamental component of dental surgery infection control. (15) The purpose of this is to prevent transmission of infection control from the operator's hand to the patient and to prevent contact of blood and salivation to the operator's hand. In our study it was reported that 95.7% of the patients believe that dentists should wear gloves while treating the patients, these results were lower than the study done by Baseer et al, 98.7% (5), Azodo et al, 98.3%, (16) Sofola 98.5% (17) and higher than the studies conducted by Gerbert et al, 76% (18) Bowden et al, 70% (19) and Burke 84%. (20)

Similar results were seen when asked about the treatment with the use of single results 86.9% of the patients said that they will not take the treatment from the dentist who uses single gloves to treat multiple patients. These results were higher than the results of the study done by Azodo et al (16) who got the percentage of 79.5% and lower the results of Kadtane SS et al. (21) The barrier for droplet infection is provided by the use of a mask during the dental procedures in our study more than 90% of the patients believe that the dentists should wear the mask during the dental procedure and 69.6% of the patients said that they will be reluctant to receive treatment from the dentists who are not wearing the mask. This may be because of the patient's self-protection attitude. This result is similar to the study done by Kadtane SS et al. 69.3%. (21) When it comes to using the goggles while treating the patients 52.5% of the patients from our study had the opinion that dentists should wear eye goggles which is higher than the study done by Azodo et al. 31.1%. (16) When asked about the sterilization 88.8% of the participants bothered about the sterilization of the instruments this result is similar to the study of Kadtane SS et al. (21) but only 35.2% of the participants asked about the sterilization of the instruments. However, in Kadtane SS et al. 69.3% (21) study 61.84% of participants asked about the sterilization of the instruments.





When asked about the protection provided by wearing the gloves 90.1% of the participants said that gloves protect both dentist and the patient from the transfer of infection. This result was lower than the result reported by Azodo et al. 94.3% (16) and higher than the results of Otuyemi et al. 65%. (22) Most patients in a study conducted by Mousa, et al believed that gloves were for patient protection. (8) On contrary, investigations of Scottish dental patients and United Kingdom patients reported that only 27% and 31% respectively of the patients believed that wearing the gloves was a means of minimizing transmission of infection between staff and patients. (20, 23)

## Limitations

There are few limitations of the study. Firstly the sample size of this study is very small. More researches need to be done in different hospitals in Pakistan. Secondly, these questions can't show the genuine knowledge and practice of the respondents.

## Conclusion

Patients attending Islamic international hospital Islamabad had adequate knowledge of wearing face masks, gloves and spectacles by dentists during the dental treatment to control cross-infection. However, better knowledge should be given to the patients through educational programs. This can be done mainly through social media to increase public awareness about cross-infection control among a large population. It can also be done through school, university, public places and TV programs.

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**Volume 2 Issue 5 May 2021**

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