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*Original Article*

# Knowledge, Attitude and Practice of Patients Regarding Cross-infection and Infection Control in Dental College and Hospital, Nashik

**Aishwarya Mahajan, Shruti Shankarrao Lendhey*, Triveni Kale**

## ABSTRACT

**Aim and Objectives:** The objective of the study was to determine the level of Knowledge, Attitude and Practice (KAP) of patients attended dental clinics at MGVS KBH Dental College and Hospital, Nashik regarding cross-infection and infection control in dentistry. **Materials and Method:** A cross-sectional study was conducted among 1200 patients who attended the dental clinics. A standardized, confidential, anonymous, interviewing questionnaire was used. The level of Knowledge, Attitude and Practice (KAP) of patients attended dental clinics was assessed by 10 Multiple choice questions. The Knowledge, Attitude and Practice (KAP) of patients were assessed by answering 10 statements on a three-point Likert scale. Patient's self-reported practices were also evaluated. The descriptive and inferential statistics was done. **Results:** The study revealed that 48.6%, 29.3% and 22.1% of the participants had poor, fair and satisfactory levels of knowledge about infection and infection control in dentistry, respectively. Participant's educational level was significantly associated with the level of knowledge about dental infection. Patients had positive attitudes towards infection control in dentistry. Regarding self-reported practice, almost half of the participants had asked dentists about sterilization of dental instruments (45.8%), wearing a face mask (24.5%) and gloves (32.3%). **Conclusion:** Participants had good attitudes towards infection control in dentistry. However, their knowledge and practice need improvements. Awareness should be increased about cross-infection and infection control in dentistry through mass media, TV programs, camps, posters, etc.
**Key words:** Cross-infection, Infection control, Awareness, Practice.

## INTRODUCTION

Patient safety is an important medical discipline that aims at improving the quality of patient care, minimizing treatment mistakes and improving safety.[1] Cross-infection can be defined as the transmission of infectious agents between patients and staff within a clinical environment.[2] Concerns about control of infection in dentists and patients were increased considerably by a report of transmission of the Human Immunodeficiency Virus (HIV) from an American dentist to five of his patients.[3] With the presence of people who are infected with hepatitis B and C and the HIV viruses, cross-infection has become a major concern for a dentist, dental personnel and patients.[4] Numerous surveys and studies have shown that the incidence of Hepatitis B developing after needle stick injuries from HbsAg patients is approximately 20.0% compared with an estimate of 0.4% following similar exposure to HIV.[5] Research has shown that infective hazards are present in dental practice because many infections can be transmitted by blood or saliva via direct or indirect contact, droplets, aerosols, or contaminated instruments and equipment among both dentists and patients.[6]

Most of the studies done about infection control in dentistry were conducted among dentists or dental students. A limited number of studies were done among patients attending dental hospital. To raise public awareness on the benefits of the safety protocols it is very important to implement effective infection control programs involving dental patients. So, our study was aimed to determine the level of Knowledge, Attitude and Practice (KAP) among patients attending dental clinic, Nashik regarding the cross infections and infection control measures to be taken.

## MATERIALS AND METHODS

This cross-sectional survey was conducted among the patients visiting Dental clinic at Nashik. A standardized questionnaire-based survey to determine the level of knowledge, attitude and practice of patients attending dental clinic towards cross-infection control was done. It was conducted among 1200 patients within age 18-60 yrs who attended dental clinic. A Standardized, confidential, anonymous interviewing questionnaire was used. The questionnaire contained 10 questions, based on

**Aishwarya Mahajan, Shruti Shankarrao Lendhey*, Triveni Kale**
*Department of Periodontology and Implantology, MGV's KBH Dental College and Hospital, Panchavati, Nashik, Maharashtra, INDIA.*

**Correspondence**
**Dr. Shruti Shankarrao Lendhey**
Department of Periodontology and Implantology, MGV's KBH Dental College and Hospital, Panchavati, Nashik-422003, Maharashtra, INDIA.
Mobile no: +91 9834039264
Email: slendhey@gmail.com

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1. Personal and demographic data- age, sex, education
2. Knowledge about dental cross-infection and infection control in dentistry;
3. Patient's attitudes towards the required measures for the prevention of cross-infection during dental care.

Attitudes were determined through a patient's response to questions on a three-point Likert scale. These questions mainly enquired about participant's opinions regarding the importance of dentists wearing gloves, face mask and eye goggles (glasses) during dental practice. Also, they were asked about their perceptions regarding the importance of replacing gloves after treating each patient and after receiving phone calls, etc. Participants have enquired also about their opinions regarding protective measures and cross-infection during dental practice.

4. Patient's self-reported practices: Questions were asked to participants about their self-reported practices in some suggested situations. The self-reported practices like to enquire dentist about the way they sterilize instruments, whether they wear facemask or not, whether they wear gloves while treating patients.

## Methods of selection of study subjects

**Inclusion criteria:** The study enrolled adult patients aged 18-60 years of both genders, who attended the dental clinic on the day of the interview and accepted to participate in the survey.

**Exclusion criteria:** The exclusion criteria included patients with severe illnesses and patients with mental diseases.

Informed consent was obtained from the all participants and strict confidentiality was maintained. Study personnel informed all potential participants, their right not to enroll in the study if not interested and to withdraw from the study at any time. Ethical clearance was obtained from the ethical committee from the institution. Permission was taken from the concerned regulatory bodies in clinic to conduct the survey. Study activities were conducted in either Marathi or English, according to the preference of participant choice.

Questions included in the questionnaire were

| |
|---|
| 1. The dentist should be vaccinated against HBV |
| 2. Dentists need to give prophylactic antibiotics to systemically compromised patients before procedures. |
| 3. Dentists should replace gloves after receiving the phone call |
| 4. The dentist can treat more than one patient with the same gloves |
| 5. Dentists should always wear gloves while treating patients |
| 6. Dentists should always wear a face mask when treating patients |
| 7. Dentists should always wear eye goggles when treating patients |
| 8. Ask the dentist about the way they sterilize instruments |
| 9. Ask the dentist to wear a face mask if not wearing it |
| 10. Ask the dentist to wear gloves if not wearing it |

For each question, a score of "1" was given for the correct answer and "0" for the incorrect or unknown answers. A total score was calculated and it ranged from 0 to 10. It was then classified into three tertiles:

- Poor score: <50% of the correct answers (<5/10 questions)
- Fair score: 50% of the correct answers (5/10 questions)
- Satisfactory score: > 50% of the correct answers (>5/10 questions).

The data was analyzed using the common database and statistical software for each of the parameters in the questionnaire. Intergroup comparisons were done and results were computed using Chi-square analysis. Chi-square test offers an alternative method of testing the significance of the difference between two proportions. It has the advantage that it can also be used when more than two groups are to be compared.[7]

# RESULTS

The response rate was 83.33% and the total 1200 patients who attended the dental clinic were participated in the study. From the 1200 participants to whom the questionnaires were submitted, 1000 participated in the study, this occurred because those patients who attended the outpatient clinics were usually in hurry and apologized to complete the questionnaire. Out of 1000, 455 (45.5%) of the respondents were women; 545 (54.5%) were men. 576 (57.6%) of the respondents were professionals and 424(42.4%) of the respondents were unprofessional. 468 (46.8%) of the respondents were qualified, 256 (25.6%) of the respondents were students and 276 (27.6%) of the respondents were unqualified. The sociodemographic characteristics of the participants are shown in (Table 1)

Concerning the source of information, the following results are: (Graph 1)

Poor score: 486 (48.6 %.) patients answered less than 5 questions correctly.

Fair score: 293 (29.3%) patients answered 5 questions correctly.

Satisfactory score: 221(22.1 %.) patients answered more than 5 questions correctly.

The majority of the participants did not have positive attitudes towards cross infection and infection control who attended dental clinic. About 54% participants didn't know whether dentists should be vaccinated against HBV or not. Only 19% of participants agreed on the importance of using prophylactic antibiotics before certain dental procedures among some infected patients.

96.6% participants agreed that dentists should wear gloves while treating the patients and 61.2% of participants disagreed that dentists can treat more than one patient with the same pair of gloves. 50% of participants thought that the dentist should need to replace gloves after receiving a phone call. Similarly, 97% of the participants agreed that dentists need to wear a face mask. Furthermore, 88.4% of participants agreed that dentists should use eye goggles while treating patients.

Regarding participant's self-reported practices, 45.8% of participants had thought that they should ask the dentist about the way they sterilize the instrument, while most of the participants 42.7% didn't bother whether the dentist had worn a face mask or not. 42.2% of participants had thought that they should ask the dentist themselves to wear gloves. (Table 2)

**Table 1: Demographic data of patients.**

| Demographic variables | | Number of patients | Percentages |
|---|---|---|---|
| Age | Below 20 yr | 166 | 16.6% |
| | 20-30 yrs | 345 | 34.5% |
| | Above 30 yrs | 489 | 48.9% |
| Gender | Male | 545 | 54.5% |
| | Female | 455 | 45.5% |
| Occupation | Professional | 576 | 57.6% |
| | Unprofessional | 424 | 42.4% |
| Level of educaton | Qualified | 468 | 46.8% |
| | Student | 256 | 25.6% |
| | Unqualified | 276 | 27.6% |

**Table 2: Questionnaire given to patients.**

| No. | Questions | yes | % | no | % | Don't mint | % |
|---|---|---|---|---|---|---|---|
| 1 | Dentist should be vaccinated against HBV | 173 | 17.3% | 287 | 28.7% | 540 | 54% |
| 2 | Dentists need to give prophylactic antibiotics prior to procedures to systemically compromised patients | 190 | 19% | 243 | 24.3% | 567 | 56.7% |
| 3 | Dentists should replace gloves after receiving phone call | 500 | 50% | 233 | 23.3% | 267 | 26.7% |
| 4 | Dentist can treat more than one patient with the same gloves | 157 | 15.7% | 612 | 61.2% | 231 | 23.1% |
| 5 | Dentists should always wear gloves while treating patients | 966 | 96.6% | 23 | 2.3% | 11 | 1.1% |
| 6 | Dentists should always wear face mask when treating patients | 970 | 97% | 13 | 1.3% | 17 | 1.7% |
| 7 | Dentists should always wear eye goggles when treating patients | 884 | 84.4% | 42 | 4.2% | 74 | 7.4% |
| 8 | Ask dentist about the way they sterilize instruments | 458 | 45.8% | 234 | 23.4% | 308 | 30.8% |
| 9 | Ask the dentist to wear a face mask if not wearing it | 245 | 24.5% | 328 | 32.8% | 427 | 42.7% |
| 10 | Ask the dentist to wear gloves if isn't wearing it | 422 | 42.2% | 255 | 25.5% | 323 | 32.3% |

## DISCUSSION

The aim of the study was to assess the Knowledge, Attitude and self-reported practice of patients attending dental clinics in MGV'S KBH Dental College and Hospital, regarding cross infection and infection control in dentistry. A questionnaires were distributed among 1200 patients who attended the dental clinic. Out of 1200 participants, 1000 were participated in the study.

Following infection control guidelines and applying the required protection can prevent most of the unintentional exposure in dental care. Standard practices and use of proper precautions, pre-exposure immunization and post-exposure prophylaxis are also vital for preventing transmission of blood-borne infections and other dentally acquired cross- infections.[8]

In the current study majority of the respondents demonstrated an inadequate level of knowledge regarding the vaccination against HBV. This finding is however following the study done in Karachi (Pakistan) where the respondents demonstrated a very low knowledge of hepatitis B infection.[9] Similarly, another study from Sudan revealed that dental patients had low knowledge about HIV/AIDS, HBV.[10] Similarly, the majority of the respondents didn't mind whether the dentist should give the prophylactic antibiotic or not, to systemically compromised patients.

In the present study, the most of the participants had positive attitudes towards dentists using barrier methods (gloves, facemask and eyeglasses) and at the same time to replace gloves after receiving phone calls and for different patients to prevent the spread of infection during dental practice. It was found that 96.6% of the participants perceived the necessity of a dentist using gloves. This finding is however in variance with the study done by Bowden *et al.*[11] reported that only 31% of their patients believed that wearing gloves can protect the dentist from the patient. While 64.0%. Patients from Nigeria were agreed that wearing gloves by the dentist during dental care is necessary.[12] Similarly, 50% participants perceived the necessity of dentists should replace gloves after receiving phone calls and 61.2% of participants thought that dentist should use different gloves for different patients.

It was found that 97% and 88.4% of the participants perceived the necessity of the dentist using a facemask and protective eyeglasses during providing dental care, respectively. Our results agree with the results of another recent study from Riyadh, KSA[13]

Regarding self-reported practices, 45.8 % of participants thought that it was right to ask the dentist the way they sterilize instruments. Sterilization and disinfection of instruments are of utmost significance in dental offices, for preventing the transmission of infection from patient to patient and from instrument to patient.[13]

42.2% of participants thought it was important to ask the dentist to wear the glove if not wearing it and 42.7% of participants never thought to ask the dentist to wear a facemask if he didn't.

## CONCLUSION

A good attitude and self-reported practice towards infection control in dentistry observed among patients attending dental clinics at MGV'S KBH Dental College and Hospital, Nashik. Knowledge needs some improvement. Patients attending dental clinics need to be equipped with better knowledge about cross-infection in dentistry through educational programs, banners, advertisements, rallies. It can be mainly through social media to increase public awareness about cross-infection among a large number of population. It can be done also at public places, colleges, schools. These programs could help to eliminate dental infection through increasing awareness of both patients and dentists about the prevention and protection controls.

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**Kindly Provide the Conflict of Interest or declare none.**

**Kindly Provide the Abbreviations Used.**

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