

# Patients' perception of infection control in dentistry

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## Abstract

**Background:** Dentistry is a high-risk profession for infections due to exposure to contaminated materials like blood, saliva, and instruments. Both dental staff and patients can contract diseases via person-to-person contact or contaminated objects.

**Objectives:** To assess patient perception of infection control practices in dentistry which will help in planning effective public health care delivery.

**Methods:** A descriptive cross-sectional study was carried out in 170 patients visiting Kathmandu Medical College Teaching Hospital (KMCTH) over the period of three months (2022 June to 2022 August) for any form of dental treatment. Ethical approval was granted by Institutional Review Committee of KMCTH on 8th June 2021. Data obtained were entered and analysed using SPSS v.21.

**Results:** Majority of the participants believed dentists should wear gloves (164, 96.7%), face masks (159, 93.8%), and eye goggles (105, 61.9%) while treating patients, and 152 (89.6%) of participants agreed that dentist should change gloves between patients. However, nearly half of the participants were not hesitant to receive treatment from the dentist not wearing gloves (82, 48.3%) and mask (86, 50.7%). In total, 119 (70.2%) agreed that it was possible to catch an infection during dental treatment and 121 (71.3%) did take interest in sterilisation of instruments but only 21 (12.3%) always asked their dentist about the method of sterilisation.

**Conclusion:** Patients possess a strong awareness of the importance for infection control in dental practice, however, this study underscores the importance of implementing effective infection control measures in dental settings to ensure the safety and well-being of patients.

**Key words:** Dental; Infection Control; Patient perception.

## Access this article online

**Website:** [www.jkmc.com.np](http://www.jkmc.com.np)

**DOI:** <https://doi.org/10.3126/jkmc.v12i1.56691>

## HOW TO CITE

Pradhan D, Tuladhar SL, Adhikari RK. Patients' perception of infection control in dentistry. *J Kathmandu Med Coll.* 2023;12(1):40-4.

**Submitted:** Jan 03, 2023

**Accepted:** Mar 19, 2023

**Published:** Mar 31, 2023

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## INTRODUCTION

Cross-infection is the transmission of infections between people, including patients and health care workers. Dental practice carries high risk of infections due to exposure to bodily fluids and contaminated equipment. Both dental professionals and patients are at risk of contracting infectious diseases through direct or indirect contact with contaminated objects. Occupational Safety and Health Administration and Centers for Disease Control (CDC) supported by American Dental Association (ADA) and Office Sterilisation and Asepsis Procedures Research Foundation (OSPA) have identified six basic areas for personal barrier protection: Hand washing and care, gloves, face masks, body gowns, protective eye wear, and rubber dam.<sup>1,2</sup> The universal



infection control policy stipulates that all patients should be treated as potentially infectious, regardless of their apparent health status.<sup>3</sup> Identifying patients' perception on infection control is an important issue. This should give alarming signs to dentists and dental health care programs for better awareness of extra- precautions required while treating dental patients.<sup>4</sup> This study was commenced to find out the perception of dental patients about infection control practices as assessment of dental patient's awareness, knowledge, and attitudes towards cross infection in a certain area which may help in planning effective public health care delivery.

## METHODOLOGY

This was a descriptive cross-sectional study carried out from 2022 June to 2022 August. Ethical approval for the study was granted by Institutional Review Committee of Kathmandu Medical College on 2021 June 8 (Ref. 0106202103).

Sample size was calculated using formula:

$$\text{Sample size (n)} = \frac{(Z_{1-\alpha})^2 P(1-P)}{D^2}$$

Here,  $Z_{1-\alpha}$  = standard normal variate (at 5% type 1 error ( $p < 0.05$ ) it is 1.96 and at 1% type 1 error ( $p < 0.01$ ) it is 2.58), as in majority of studies p-values are considered significant below 0.05 hence 1.96 was used in the formula; P = expected population based on previous study;<sup>5</sup> D = absolute error.

Sample size calculation has been done taking into consideration of the involvement of study participants in research from study<sup>5</sup> according to which 88.37% patient believed dentist should wear gloves and while dental treatments.

Putting this value into formula, Sample size =  $[1.96^2 * 0.8837(1-0.8837)]/0.052 = 157.92$ . Rounding off, the maximum sample size for patients = 160.

A self-developed questionnaire was used to collect the data from patients visiting dental department for any form of treatment in random manner through "convenience sampling". In the case of minors, data were collected from attendants who have already visited dental clinic before. Data were collected from 170 participants after written informed consent. The collected data were entered and statically analysed using IBM SPSS Statistics for Windows, version 21 (IBM Corp., Armonk, N.Y., USA) and descriptive statistics like frequency and percentage were used to summarise the responses.

## RESULTS

Out of a total of 170 individuals, 94 (55.3%) were female and 76 (44.7%) were male. The mean age of the group was 33.4 years with a standard deviation of  $\pm 14.9$  years. Of the total, 155 (91.2%) individuals were literate, 5 (2.9%) were illiterate, and 10 (5.9%) did not provide information about their education level.

**Table 1: Perception of participants, n (%)**

Questions	Yes	No	Don't know	Not responded
Do you believe that dentist should wear gloves while treating patients?	164 (96.7)	3 (1.7)	3 (1.7)	-
Can dentist treat more than one patient with same pair of gloves?	13 (7.6)	152 (89.6)	4 (2.3)	1 (0.6)
Do you believe dentist should always wear face mask when treating patient?	159 (93.8)	6 (3.5)	2 (1.1)	3 (1.7)
Do you believe dentist should always use eye goggles when treating patient?	105 (61.9)	33 (19.4)	31 (18.2)	1 (0.6)
Do you believe you can catch infection during dental treatment?	119 (70.2)	16 (9.4)	35 (20.6)	-

**Table 2: Attitude of participants, n (%)**

Questions	Yes	No	Don't know	Not responded
Would you be reluctant to receive treatment from dentist who is not wearing gloves?	79 (46.6)	82 (48.3)	9 (5.3)	-
Would you be reluctant to receive treatment from dentist who is not wearing face mask?	77 (45.4)	86 (50.7)	4 (2.3)	3 (1.7)
Do you bother about the sterilisation of the instruments used for your treatment?	121 (71.3)	33 (19.4)	16 (9.4)	-

**Table 3: Knowledge of sterilisation, n (%)**

Have you ever asked your dentist about the way they sterilise their instruments?	
1. Always	21 (12.3)
2. Sometimes	41 (24.1)
3. Never	95 (56)
4. Don't know about sterilisation	10 (5.9)
5. Not responded	3 (1.7)

## DISCUSSION

This study offers a perspective on how the dental patient visiting dental practice for any form of treatment perceives the risk of cross-infection with respect to use of personal barrier protection and sterilisation.

The results of current study indicate that the majority of respondents (164, 96.7%) expected dentists to wear protective gloves, which is a positive finding that aligns with previous research.<sup>4,6-12</sup> Nevertheless, the reported percentage was greater than that of previous studies.<sup>5,13-17</sup>

A significant number of respondents deemed that wearing gloves by dentists is crucial in preventing cross-infection, suggesting a heightened awareness of the issue. Moreover, the level of awareness among patients regarding dentists changing gloves before treating a new patient was 159 (93.8%), which is higher than the figures reported in earlier studies,<sup>4,5,9,10,13,14,16,17</sup> and lower than the findings of Deogade et al.<sup>12</sup> Samaranyake et al.,<sup>6</sup> found 68% of hospital patients, 62% of general patients, and 41% of high-risk patients did not mind reusing gloves after thorough washing with disinfectant on different patients. However, in another study done by Smith et al.,<sup>7</sup> only 25% of respondents agreed with the reuse of the gloves. Centers for Disease Control and Prevention recommends that a separate pair of gloves must be used for each new patient to avoid cross-infection.<sup>2</sup>

Amid coronavirus disease 2019 (COVID-19) pandemic, people have become increasingly worried about infection control, particularly healthcare facilities. Wearing masks is considered a recommended strategy to reduce the risk of cross-infection. In current study, 159 (93.8%) participants believed that dentists should wear masks when treating patients, which is consistent with previous research findings,<sup>9,10,12</sup> and higher than what has been reported by some authors.<sup>5,11,13,14,17-19</sup> However, the results is lower than that of Ibrahim et al.<sup>4</sup>

A significant proportion of respondents (119, 70.2%) were cognizant of the potential risk of contracting an infection during dental procedures. This finding is in agreement with the results of Kadtane and colleagues' research,<sup>5</sup> and is lower than the figures reported in previous studies by Deogade and others,<sup>12</sup> but higher than some other investigations.<sup>6,13,18</sup> The implication is that people are becoming increasingly aware of the risks involved in dental treatments.

The majority (105, 61.9%) of responders expected the dentist to wear safety goggles while treating the patient. This figure is notably higher than the results reported in previous studies.<sup>4,5,10,12,13,18</sup> Interestingly, participants in the research appeared to be more supportive of the use of gloves than masks or goggles, possibly because they viewed gloves as a means of protecting themselves, whereas masks and goggles were seen as primarily protecting the dentist.<sup>13</sup>

Patients show less concern about how dentists sterilise instruments. With regard to the sterilisation of instruments used during checkups and treatment, only 121 (71.3%) patients expressed concern about the status of sterilisation. This result is comparatively less than the findings reported in prior studies by Kadtane et al.<sup>5</sup> and Azodo et al.,<sup>10</sup> but more than the figures recorded in Thomson et al.<sup>15</sup> research.

It seems that there is a discrepancy between the percentage of people who are concerned about the sterilisation status of dental instruments and who actually inquire about the sterilisation methods used by dentist. Although 121 (71.3%) of people expressed concern about sterilisation, only 21(12.3%) of them actually asked dentist about the sterilisation methods and this finding is lesser to study of Kadtane et al.<sup>5</sup> and Azodo et al.,<sup>10</sup> but higher to Ibrahim et al.,<sup>4</sup> this may be due to various reasons such as a lack of knowledge or confidence in asking, assuming that the dentist is already following proper sterilisation procedures, or feeling uncomfortable bringing up the topic.

According to the current research, a majority of the participants did not inquire about the sterilisation technique employed by their dentist. For a secure and healthy dental experience, it is essential that patients feel at ease inquiring about the sterilisation process. Dentists must be forthcoming and candid about their sterilisation protocols and should be prepared to address any queries or apprehensions raised by patients.

Despite the fact that 164 (96.7%) believed dentist should wear gloves, 159 (93.8 %) knows that face mask is preliminary requisite for the safety and 119 (70.2%) had knowledge about the cross infection during dental treatment. 79 (46.6 %) of total responders are reluctant to receive treatment from dentist who are not wearing gloves and 77(45.4%) are reluctant to receive treatment from dentist not wearing face mask during clinical procedure, which are lesser than the findings of Azodo et al.<sup>10</sup> and Kadtane et al.<sup>5</sup> studies.

## CONCLUSION

Study has revealed that patients possess a strong awareness of the importance for infection control in

dental practice. The majority of participants expect dentists to wear protective masks, gloves, and safety goggles. While patients do express concerns about the sterilisation of instruments used during dental treatments, only a small proportion of them inquire about the sterilisation techniques used by their dentist. With the onset of the COVID-19 pandemic, people's anxieties about infection control in healthcare environments have intensified. Overall, this research highlights the critical significance of implementing effective infection control measures in dental settings to ensure the safety and well-being of patients.

**Conflict of interest:** None

**Source(s) of support:** None

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