

# Knowledge and Perception of Risks Associated with Dental Treatment during the COVID-19 Pandemic

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**Abstract:** *Aerosol transmission of COVID has been proved. However, it is inevitable to completely avoid the same in our practise. Keeping this in mind, regulatory bodies and experts all over the world have issued guidelines for dental treatment of patients during this pandemic. Procedures that carry a significant amount of risk have been outlined, and dentists have been advised to avoid such procedures unless absolutely necessary. Extensive guidelines regarding proper disinfection protocol and personal protective measures have also been formulated. While there is a vast amount of information for dentists, understanding of this by the general public maybe unknown. Lack of knowledge and understanding of proper etiquette/precautions to be taken while seeking dental treatment and the risks associated with dental treatment have the potential to put both the patient and the dentist in harm's way. The objective of this study was to assess and understand patients' perspective on seeking dental treatment in the current prevailing pandemic.*

**Keywords:** COVID, Dental treatment, Risk, Precautions, Survey

## 1. Introduction

On 31 December 2019, the WHO China Country Office was informed of cases of pneumonia of unknown etiology detected in Wuhan City, Hubei Province of China. As of 3 January 2020, a total of 44 patients with pneumonia of unknown etiology had been reported to WHO by the national authorities in China.(1) This was later found to be caused by a new type of coronavirus which was named SARS-nCov-2. Since then, nCOVID-19 has spread all over the world and has been declared as a pandemic by the WHO.(2) As of August 31, 2020 the total number of cases stands at 25,387,250.(3) To limit transmission and provide early care many nations had imposed lockdowns. However, despite such measures by the administrative bodies, it has not been possible to limit the spread of this disease. Today with early diagnosis, a better understanding of the illness and newer treatment approaches, the mortality associated with the disease reduced(4–7) and the number of recoveries outnumber the active cases. (3) Despite this, measures to control transmission need to be implemented effectively.

Aerosol transmission of COVID has been well documented and accepted. (8–12) As an inevitable aspect of the occupation, dentists are exposed to a high amount of aerosols while treating patients. Keeping this in mind, regulatory bodies and experts all over the world have issued guidelines for dental treatment of patients during this pandemic. Procedures that carry a significant amount of risk have been outlined, and dentists have been advised to avoid such procedures unless absolutely necessary. Extensive guidelines regarding proper disinfection protocol and personal protective measures have also been formulated.(13–21) While there is a vast amount of information for dentists, understanding of this by the general public maybe unknown. Lack of knowledge and understanding of proper etiquette/precautions to be taken while seeking dental treatment and the risks associated with dental treatment have the potential to put both the patient and the dentist in harm's way. The objective of this study was to assess and understand patients' perspective on seeking dental treatment in the current prevailing pandemic.

## 2. Methodology

An online survey in the English language was developed. The survey featured 1) participant information, 2) screening against inclusion/exclusion criteria and 3) survey questions. The survey was administered online via google forms between 02.12.2020 and 31.06.2021. Responses were collected electronically and participants were encouraged to share the link to the survey to facilitate snowball sampling.

The eligibility criteria were broad to maximise reach. We used the following inclusion criteria: 1) age 18 years or over; and 2) willingness to participate. Screening questions prevented completion in case of ineligibility.

The questionnaire focused on knowledge and perception of risks associated with seeking dental treatment during the COVID pandemic. The questionnaire had seven sections with a total of 41 questions. The seven sections of the questionnaire pertained to: i) seeking dental treatment during the covid 19 pandemic, ii) knowledge of non-emergency/routine dental procedures, iii) risk of spread of COVID-19 from dental procedures, iv) precautions to be taken by a patient seeking dental treatment during the COVID-19 pandemic, v) precautions to be taken by the dentist and dental clinic during the COVID-19 pandemic, vi) general/ overall precautionary measures, and vii) participant details. The questions were a mix of multiple-choice and single best answer type.

The survey included participant information, which was accessible throughout survey completion. A clear explanation of the purpose of the survey, data handling, potential burden and benefits of participation was provided, and participants were prompted to carefully consider their willingness to participate.

Analyses were performed and the responses were then expressed as percentages. Due to snowball sampling, the demographic distribution of the sample was variable.

### 3. Results

A total of 122 responses were collected.

As shown in Fig 1a and 1b, 52.5% of the respondents had not visited a dental clinic and 54.9% of the respondents felt safe to visit the dental clinic for emergency dental procedures given the current situation. However when asked about visiting the dental clinic for routine procedures, only 25.4% of the respondents felt safe to do so (Fig 1b). 50% of the respondents felt that there was some risk of getting infected with COVID-19 by visiting a dental clinic (Fig 1c). 88.5% of respondents agreed that dentists were at an increased risk of contracting COVID-19 (Fig 1b).

Table 1 shows the percentage of respondents that were able to correctly identify dental emergencies.

Figure 2 shows the potential risks associated with dental treatment as perceived by the respondents.

Figure 3 shows the understanding of the respondents about precautions to be taken before and while visiting a dental clinic.

Figure 4 shows the frequency of disinfection of the dental clinic as expected by the respondents.



Figure 1 (a): Visits to a dental clinic during the pandemic

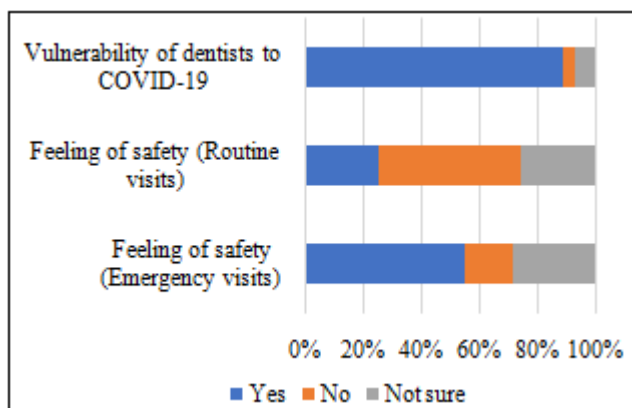


Figure 1(b): Feeling of safety for dental visits and vulnerability of dentists to COVID-19 infections

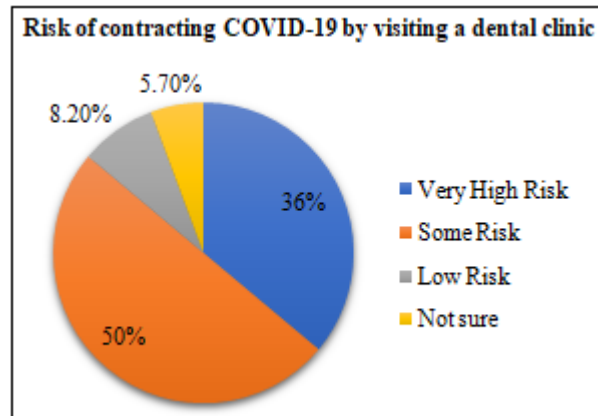


Figure 1 (c): Risk of contracting COVID-19 by visiting a dental clinic

Table 1: Respondents' perception of dental emergencies

Dental problem	Respondents
Toothache not treatable with medicines	90.2%
Fractured restorations/ dislodged crowns	62.3%
Swelling with or without pus discharge	77%
Broken teeth with pain	86.1%
Uncontrolled bleeding (dental origin)	89.3%

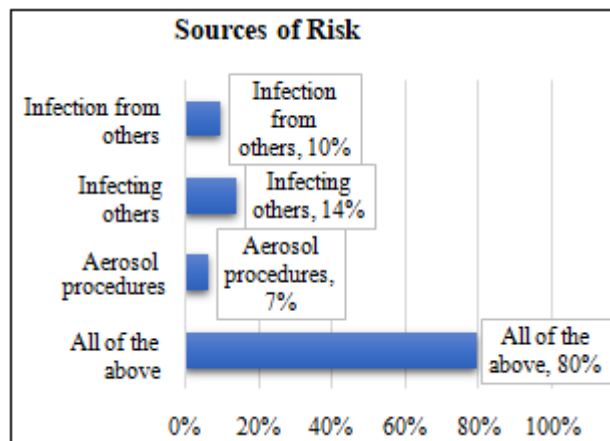


Figure 2: Potential risks associated with dental treatment as perceived by the respondents

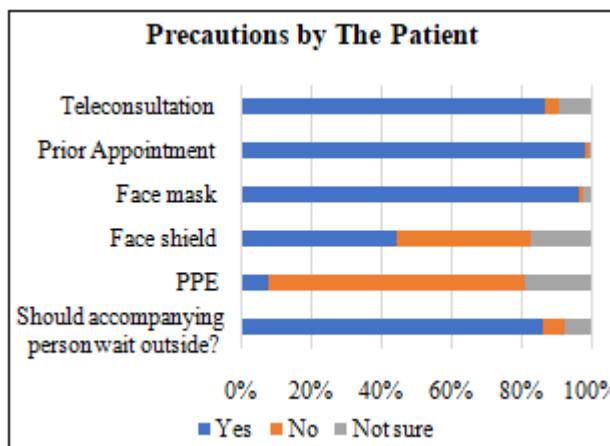
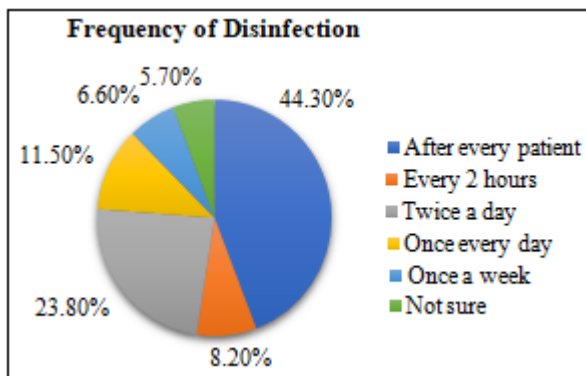


Figure 3: Understanding of the respondents about precautions to be taken before and while visiting a dental clinic



**Figure 4:** Frequency of disinfection of the dental clinic as expected by the respondents

#### 4. Discussion

Aerosol transmission of COVID has been proved. However, it is inevitable to completely avoid the same in practise. Keeping this in mind, regulatory bodies and experts all over the world have issued guidelines for dental treatment of patients during this pandemic. Procedures that carry a significant amount of risk have been outlined, and dentists have been advised to avoid such procedures unless absolutely necessary. Extensive guidelines regarding proper disinfection protocol and personal protective measures have also been formulated. While there is a vast amount of information for dentists, understanding of this by the general public maybe unknown. Lack of knowledge and understanding of proper etiquette/precautions to be taken while seeking dental treatment and the risks associated with dental treatment potentially put both the patient and the dentist in harm's way. Thus, understanding patients' perspective on seeking dental treatment in the current prevailing pandemic is essential.

Fig 1a and 1b show that 52.5% of the respondents had not visited a dental clinic and 54.9% of the respondents felt safe to visit the dental clinic for emergency dental procedures given the current situation, respectively. However when asked about visiting the dental clinic for routine procedures, only 25.4% of the respondents felt safe to do so (Fig 1b). This probably correlates to hesitation and concerns of the respondents towards the perceived risks associated with dental treatment during the pandemic. This is evident from the response for 94.3% or respondents who felt that there is a risk of getting infected with COVID-19 by visiting a dental clinic (Fig 1c). Majority of the respondents were also found to be aware of the increased risk that the dental team faced (Fig 1b).

Majority of the respondents were able to satisfactorily identify dental problems that require immediate attention. This indicates good awareness of the respondents towards dental emergencies. Knowledge of dental problems requiring immediate attention reduces the chance of patients visiting the clinic for trivial problems which can be tended to at a more appropriate time. However, 62.3% (Table 1) of the respondents also felt that broken teeth/ restorations require immediate attention, though this may not be the case everytime. Patient education on this aspect is required.

80% of the respondents felt that the risks associated with dental treatment arises from a combination of aerosol procedures, probability of contracting the infection from other persons and chance of spreading the infection to others visiting the clinic. To allay these fears, the treating clinician should visibly address these issues and inform the patients of the precautions being taken for their safety.

Majority of the respondents of this survey were aware of the appropriate precautions to be taken before and while visiting a dental treatment. A great number of respondents expect the dental clinic and operatory to be disinfected after every patient which is in line with the current guidelines.

#### 5. Conclusion

Both formal and informal information sources have been found to be significantly related to increased in situational awareness and can significantly increase the adoption of protective health behaviour, and in turn contain the spread of infectious diseases.(22)

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