



## Knowledge about emergency and non-emergency dental procedures during covid-19 pandemic

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### ABSTRACT

The novel Coronavirus (COVID-19) pandemic has become a real challenge for healthcare providers around the world. Recently, it has been recorded that among all the health care professionals dentists, dental assistants, and dental hygienists are at high risk as they are in close contact with patients and are exposed to body fluids of patients. To assess the knowledge and create awareness of changes in the practice of emergency and non-emergency dental procedures during COVID-19 among dental interns. A cross-sectional study was conducted among 100 dental interns. As the study was conducted during the pandemic time, a web-based survey was created using google form which composed of a set of 12 structured custom-made questions. The answers were collected and subjected to statistics. It was seen that more than 80% of the dental interns were aware of the guidelines issued by various dental associations regarding changes in dental procedures during COVID-19 pandemic situation. Most of the students were also aware of the term 'Tele dentistry' and telecommunications for dental care, consultation and education. Adaptations and adjustments in the dental procedures need to be done to avoid the spread of the disease. Hence, it is important and mandatory for dental professionals and students to be aware of the precautions to be taken when performing emergency as well as non-emergency procedures during this pandemic situation.

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### INTRODUCTION

The World Health Organization (WHO) labelled the spread of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) across the globe as a pan-

dem. The risk assessment caused by it is very high, with a global impact (Peloso *et al.*, 2020).

The highest risk for infection spread among the health care professionals are dentists, dental assistants and dental hygienists as they are in close contact with patients and are exposed to their secretions like saliva and aerosol splashes. Dental clinics are, therefore, an important hotspot for disease transmission (Gurzawska-Comis *et al.*, 2020). To avoid this type of outbreak, dental clinics and hospitals have been closed. This has also increased the suffering of individuals for a dental emergency, on the other hand. Therefore, On March 18, 2020, the ADA provided its members and their patients with precise information on what to expect as an attempt to mitigate the spread of COVID-19 and relieve the pressure on hospitals and dental emergencies and non-emergency departments (Hegde *et al.*, 2019).

The dental guidelines provided by the Indian dental association, the American Dental Association, the Polish Dental Association and the Swiss Dental Association have recommended performing only emergency treatments during this pandemic condition (Guo *et al.*, 2020).

### Aim and Objective

This study was aimed to evaluate the knowledge level of dental students about the emergency and non-emergency dental procedures that should be performed and avoided during this pandemic situation and the objective of the study is to create awareness about the guidelines for the dental treatment.

### MATERIALS AND METHODS

A cross-sectional study was conducted among the Dental interns. The sample size was calculated to be 100. The dental students who were in their intern phase and willing to participate were included in the study.

As this study was conducted during the pandemic time, a web-based survey was created using a google form, which composed of a set of 12 structured custom-made questions. The questions were framed in the English language and vetted with the expert's opinion. The questionnaire began with the informed consent along with their demographic details followed by the questions regarding emergency and non-emergency dental treatment during a pandemic. The format of the questionnaire was provided with multiple choices with four options. These were done to prevent bias. Each participant was allowed to submit the response only once. The collected data were subjected to statistical analysis.

### RESULTS

The survey was conducted among 100 dental students who were in their intern phase. After obtaining the answers, charts were formulated for the easy depiction of the results.

Table 1 depicted that about 88% of participants were aware that the dental guidelines were issued by various dental association pertaining to dental management during COVID-19 pandemic. Similarly, 80% of our participants also had the knowledge that the patients with acute onset of pain and life-threatening conditions like facial trauma, the severe dentoalveolar abscess should be considered as a dental emergency. About 91% of the participants had knowledge that extraoral radiographic procedures should be preferred rather than intraoral procedures during this pandemic situation. It was clear

that most of the students were also aware of the term 'Tele dentistry' that is the use of information technology and telecommunications for dental care, consultation and education (Table 1, Figure 1).

Table 1 showing the knowledge of participants about the emergency and non-emergency dental treatment that should be carried out during COVID-19.

Figure 1 depicts the bar chart representation of the percentage of subjects and their respective responses, Blue colour denotes option a, Red denotes option b, Grey for option c and Yellow for d.

### DISCUSSION

In December 2019, scientists isolated acute respiratory syndrome of coronavirus 2 (SARS-CoV-2) in Wuhan, China. The WHO declared the disease as a Public Health Emergency of International Significance (PHEIC) and named it 'COVID-19'. The health care professionals, especially dentist, are at high risk in the transmission of the disease. So the dentist should always know to differentiate between the procedures that should be performed immediately and the procedures that should be avoided/postponed during this pandemic situation to avoid the bidirectional spread of infection.

Emergency dental treatments are necessary, even in this COVID-19 situation. This was shown in the study by Quiñonez *et al.* (2009) where 56% of patients have reported periapical abscesses and toothaches during this pandemic condition which are considered to the emergency treatment (Quiñonez *et al.*, 2009). Dental associations in several countries have issued guidelines for the dentists regarding the procedures that should be performed during a pandemic and the procedures that should be avoided/postponed during this time. According to ADA, dental procedures are classified into Emergency procedures, urgent procedures and non-emergency dental procedures which are shown in Table 2.

A study done by Bansal *et al.* (2020) showed that 80% of their participants were aware about the guidelines issued by the dental associations. This was in accordance with our present study were 88% of students were also aware of about this (Bansal *et al.*, 2020).

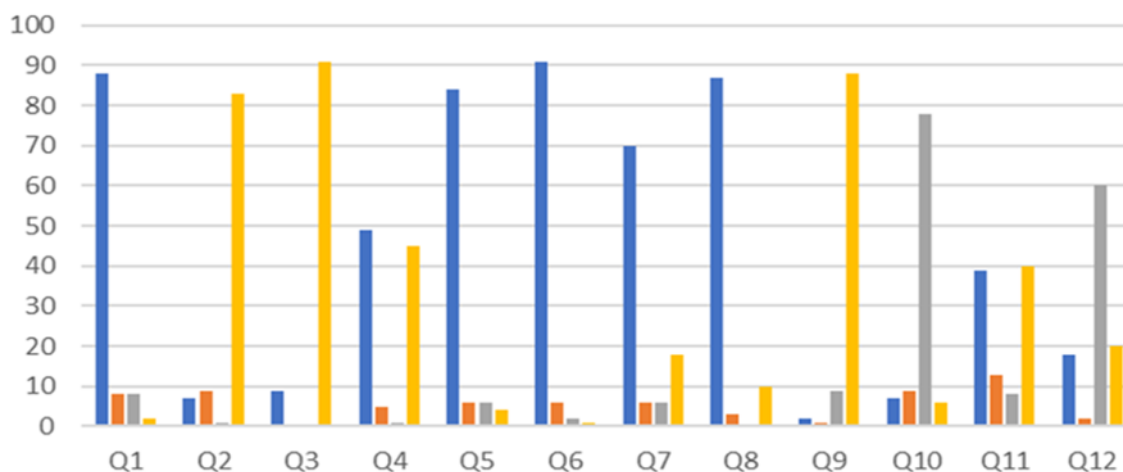
During this pandemic condition, routine dental check-up and procedures cannot be preferred due to the outbreak of the disease. Only emergency treatments should be carried out in the dental clinics and hospitals. Appealingly 84% of the partic-

**Table 1: Response of participants about the Emergency and Non-emergency treatment**

Questions	Options & Percentage
1. Are you aware of the dental guidelines issued by various dental association pertaining to dental management during a pandemic?	Yes 88
	No 8
	May be 8
	Don't know 2
2. Which of the following association/organization have the rights to issue the guidelines for oral health care professionals during a pandemic?	IDA 7
	WHO 9
	ADA 1
	All the above 83
3. Which of the following procedure requires mandatory use of N95?	Endodontic treatment procedures 9
	FPD tooth preparation 0
	Ultra-sonic devices 0
	All the above 91
4. Which of the following is mandatory while dealing with emergency cases required aerosol Generating procedures?	Negative air pressure 49
	Using high volume evacuation procedures 5
	Protective wear 1
	All the above 45
5. According to ADA which of the following are examples of emergency (Immediate threat to life and health) dental procedures.	Dental abscess with severe uncontrolled pain 84
	Extraction of asymptomatic teeth 6
	Esthetic dental procedures 6
	Orthodontic treatment 4
6. —————-imaging should be restricted, and —————-radiographs should be utilized to reduce the excessive salivation and gag reflex	Intraoral, extraoral 91
	Extraoral, intraoral 6
	Panoramic, bitewing 2
	Both can be performed 1
7. What is a dental emergency?	Acute one with pain 70
	Chronic one without pain 6
	Acute one without pain 6
	Chronic one with pain 18
8. What qualifies as a dental emergency?	Life-threatening condition needs immediate treatment 87
	Does not need immediate treatment 3
	Esthetic related cases 0
	All the above 10
9. Which of the following should be treated as an urgent procedure?	Swelling 2
	Suture removal 1
	Uncontrolled bleeding 9
	Both A and C 88
10. Intentional RCT for FPD comes under	Emergency procedures 7
	Urgent procedures 9
	Non-emergency procedures 78
	Not under the above 6
11. Which of the following drugs to be recommended with caution during a pandemic?	Acetaminophen 39
	Ketorolac 13
	Piroxicam 8
	Ibuprofen 40
12. Which of the following best suits the term teledentistry?	Virtual communication for dental care 18
	Appointment for dental care 2
	Telecommunications for dental care 60
	All the above 20

**Table 2: Classification of Dental Procedures during Pandemic**

Emergency Procedures	Urgent Procedures	Non Emergency Procedures
Oro-facial swelling	Pulpitis, Dental or periodontal abscess	Normal exfoliation symptoms of primary tooth
Trauma that may damage the patient’s airway	Dental trauma with avulsion or luxation.	Elective treatment requires high/slow speed bur
Uncontrolled bleeding	Severe dental or facial pain	Previously initiated root canal
Medically compromised	Failed dental extractions	Regular dental check-up
Suture removal for non-resorbable everlasting suture	Behavioural/physical disability and in pain	



**Figure 1: The bar chart representation of the percentage of subjects and their respective responses**

ipants in our present study were aware that only the emergency procedures should be carried out in this Pandemic. This was similar to the study done by Bansal et al. (2020); Gambhir et al. (2020) where they showed more than 90% of populations awareness towards it.

In this study, when the participants were asked regarding the usage of N95 masks, 91% of our study participants said that it is mandatory to use N95 in all dental procedures. This was in line with a study conducted by Bansal et al. (2020); Al-Khalifa et al. (2020).

AIR (Airborne Infection Isolation Room), formerly known as the Negative Pressure Isolation Room, is a single-occupancy patient care room used to isolate patients with a suspected or documented infectious airborne disease. In the present study, about 49% of dental interns answered that only AIR is mandatory whereas 45% have chosen that AIR, HVE (high volume evacuator), as well as PPE, are mandatory while performing an emergency procedure that generates aerosols. Meng et al. (2020) were the first to report on personal protection equipment (PPE) that protected dental professionals during the COVID-19

epidemic in Wuhan, China (Meng et al., 2020).

In this study, when the participants were asked regarding the usage of N95 masks, 91% of our study participants said that it is mandatory to use N95 in all dental procedures. This was in line with a study conducted by Bansal et al. (2020); Al-Khalifa et al. (2020). In a similar study done by Duruk et al. (2020) only 12% of the participants reported using the N-95 mask in Turkey (Duruk et al., 2020).

Non-steroidal anti-inflammatory drugs (NSAIDS) are medication that is used widely to reduce pain, swelling and mainly to bring down the body temperature. They also have many side effects. In our present study, 40% of interns were aware that NSAIDS should be prescribed with caution as it could be an aggravating factor for the infection. This was similar to the study conducted by Bansal et al. (2020) that showed 31.1% of participant’s awareness towards it (Bansal et al., 2020).

In the present study, 60% of subjects had basic knowledge about teledentistry. Teledentistry is a type of telehealth devoted exclusively to dentistry that uses electronic medical records, information

and communication technology (ICT), digital imaging, and the Internet for consultation, supervision, or continuing education (Estai *et al.*, 2020). Giudice *et al.* (2020) reported that the use of teledentistry would allow patients to screen and monitor cases while limiting human contact, thus decreasing the risk for COVID-19 transmission (Giudice *et al.*, 2020). Although reducing face-to-face consultation is important to reduce the risk of infection, dental surgeons need to ensure the quality of treatment. But in a study done by Al-Khalifa *et al.* (2020) showed that only 43% of doctors said that they offer tele screening (Al-Khalifa *et al.*, 2020).

## CONCLUSION

During the time of the pandemic outbreak, healthcare professionals should be aware of the situations to protect themselves and their patients from transmission of the diseases. Proper training and knowledge of the personal protection measures, hand hygiene, the use of PPE and infection control methods as given by various associations should be followed. The healthcare professionals should be aware, create awareness and be appreciation on the updates regarding this kind of pandemic situations.

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## Conflict of Interest

The authors declare that they have no conflict of interest for this study.

## REFERENCES

- Al-Khalifa, K. S., AlSheikh, R., Al-Swuailem, A. S., Alkhalifa, M. S., Al-Johani, M. H., Al-Moumen, S. A., Almomen, Z. I. 2020. Pandemic preparedness of dentists against coronavirus disease: A Saudi Arabian experience. *PLOS ONE*, 15(8):e0237630–e0237630.
- Bansal, P., Agnihotri, A., Gupta, A., Singh, G., Kaur, A., Arora, R., Singh, S. 2020. Emergency preparedness of oral health professionals during COVID-19 pandemic: A knowledge, attitude, and practices study. *Indian J Dent Sci*, 12(3):137–181.
- Duruk, G., Gumuboa, Z. Ş., Çolak, C. 2020. Investigation of Turkish dentists' clinical attitudes and behaviors towards the COVID-19 pandemic: a survey study. *Brazilian Oral Research*, 34.
- Estai, M., Kanagasingam, Y., Mehdizadeh, M., Vignarajan, J., Norman, R., Huang, B., Spallek, H., Irving, M., Arora, A., Kruger, E., Tennant, M. 2020. Teledentistry as a novel pathway to improve dental health in school children: a research protocol for a randomised controlled trial. *BMC Oral Health*, 20(1):11–11.
- Gambhir, R. S., Dhaliwal, J. S., Aggarwal, A. 2020. COVID-19: A survey on knowledge, awareness and hygiene practices among dental health professionals in an Indian scenario. *Roczniki Państwowe-go Zakładu Higieny*, 71(2):223–229.
- Giudice, A., Barone, S., Muraca, D., Averta, F., Di-dati, F., Antonelli, A., Fortunato, L. 2020. Can Tele-dentistry Improve the Monitoring of Patients during the Covid-19 Dissemination? A Descriptive Pilot Study. *International Journal of Environmental Research and Public Health*, 17(10):3399–3399.
- Guo, H., Zhou, Y., Liu, X., Tan, J. 2020. The impact of the COVID-19 epidemic on the utilization of emergency dental services. *Journal of Dental Sciences*, 15(4):564–567.
- Gurzawska-Comis, K., Becker, K., Brunello, G., Gurzawska, A., Schwarz, F. 2020. Recommendations for Dental Care during COVID-19 Pandemic. *Journal of Clinical Medicine*, 9(6):1833–1833.
- Hegde, M., Qaiser, S., Hegde, N. 2019. Clinical protocols in dental practice: Post-COVID-19. *Journal of Conservative Dentistry*, 22(5):408–408.
- Meng, L., Hua, F., Bian, Z. 2020. Coronavirus Disease 2019 (COVID-19): Emerging and Future Challenges for Dental and Oral Medicine. *Journal of Dental Research*, 99(5):481–487.
- Peloso, R. M., PiniI, N. I. P., Neto, D. S., Mori, A. A., de Oliveira, R. C. G., ValarelliI, F. P., Freitas, K. M. S. 2020. How does the quarantine resulting from COVID-19 impact dental appointments and patient anxiety levels? *Brazilian Oral Research*, 34.
- Quiñonez, C., Gibson, D., Jokovic, A., Locker, D. 2009. Emergency department visits for dental care of nontraumatic origin. *Community Dentistry and Oral Epidemiology*, 37(4):366–371.