Future Implications of COVID-19 on Pediatric Dental Settings: A Cross-sectional Study

Gyanendra Kumar1, Ferah Rehman2, Jameela Abdul Haq3

ABSTRACT

The whole world is amidst coronavirus outbreak which originated in Wuhan City, China, in the late December 2019. Coronavirus can be transmitted from person to person through direct or indirect contact or through aerosols generated during various medical and dental procedures. This has significant impact on dental health professionals who are at risk of infection. The purpose of this study is to assess the future impact of “coronavirus disease-2019 (COVID-19)” on pediatric dental settings.

Materials and methods: A self-administered questionnaire was sent to various pediatric dentists across the globe through e-mail, which assessed their current state of mind and future preparation for practice. The collected data were analyzed, and percentage analysis was used to describe the data.

Results: The majority of study subjects (97%) believed that COVID-19 would affect the dental practice. In all, 86.1% would defer dental treatment to suspicious patients, and 91.5% would look for COVID-19 signs and symptoms after resuming practice. In all, 96.4% of professionals would follow universal precautions of infection control for every patient, and 98.8% would like World Health Organization (WHO) to issue guidelines for dental practitioners.

Conclusion: Dental health professionals are well informed about COVID-19 and are preparing themselves for future practice using WHO and other Dental Associations guidelines.

Keywords: Coronavirus, COVID-19, N-95 mask, Online survey, Pediatric dentist.

Journal of Oral Health and Community Dentistry (2020): 10.5005/jp-journals-10062-0069

INTRODUCTION

Coronaviruses belong to the family of Coronaviridae, of the order Nidovirales, comprising large, single, plus-stranded RNA as their genome.1,2 Several members of the coronavirus cause mild respiratory disease in humans; however, SARS-CoV and the Middle East respiratory syndrome coronavirus (MERS-CoV) explored in 2002 to 2003 and in 2012, respectively, caused fatal severe respiratory diseases.3–5 On February 11, 2020, the World Health Organization (WHO) named the novel viral pneumonia as “coronavirus disease-2019 (COVID-19),” while the International Committee on Taxonomy of Viruses (ICTV) suggested this novel coronavirus name as “SARS CoV-2” due to the phylogenetic and taxonomic analysis of this novel coronavirus.6 This emergent pneumonia outbreak originated in Wuhan City in late December 2019.7 The pneumonia infection has rapidly spread from Wuhan to most other provinces and other 24 countries.8 WHO declared a public health emergency of international concern over this global pneumonia outbreak on January 30, 2020.

The common transmission routes of novel coronavirus include direct transmission (cough, sneeze, and droplet inhalation transmission) and contact transmission (contact with oral, nasal, and eye mucous membranes).9 Although common clinical manifestations of novel coronavirus infection do not include eye symptoms, the analysis of conjunctival samples from confirmed and suspected cases of 2019-nCoV suggests that the transmission of 2019-nCoV is not limited to the respiratory tract10 and that eye exposure may provide an effective way for the virus to enter the body.11 In addition, studies have shown that respiratory viruses can be transmitted from person to person through direct or indirect contact or through coarse or small droplets, and 2019-nCoV can also be transmitted directly or indirectly through saliva.12 Studies have suggested that 2019-nCoV may be airborne through aerosols formed during medical procedures.13 It is notable that 2019-nCoV RNA could also be detected by rRT-PCR testing in a stool specimen collected on day 7 of the patient’s illness.14 However, the aerosol transmission route and the fecal–oral transmission route concerned by the public still need to be further studied and confirmed.

The risk of transmission in dentistry is very high, as dental treatment makes use of aerosol-generating equipment such as airrotor and ultrasonic scalers. The crucial decisions and risks associated with the dentistry field include dentist safety, cross infections, scheduling appointments, financial security, and case selection (whether to treat asymptomatic patients or not).15 Therefore, considering the risk parameters and demand of essential

1Department of Pediatric and Preventive Dentistry, Maulana Azad Institute of Dental Sciences, New Delhi, India
2Department of Pedodontics and Preventive Dentistry, Maulana Azad Institute of Dental Sciences, Maulana Azad Dental College and Hospital, New Delhi, India
3Department of Preventive and Pediatric Dentistry, University of Greifswald, Germany

Corresponding Author: Ferah Rehman, Department of Pedodontics and Preventive Dentistry, Maulana Azad Institute of Dental Sciences, Maulana Azad Dental College and Hospital, New Delhi, India, Phone: +91 8826246696, e-mail: drferahrehman@gmail.com

How to cite this article: Kumar G, Rehman F, Haq JA. Future Implications of COVID-19 on Pediatric Dental Settings: A Cross-sectional Study. J Oral Health Comm Dent 2020;14(2):39–43.

Source of support: Nil

Conflict of interest: None

©The Author(s). 2020 Open Access This article is distributed under the terms of the Creative Commons Attribution 4.0 International License (https://creativecommons.org/licenses/by-nc/4.0/), which permits unrestricted use, distribution, and non-commercial reproduction in any medium, provided you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license, and indicate if changes were made. The Creative Commons Public Domain Dedication waiver (http://creativecommons.org/publicdomain/zero/1.0/) applies to the data made available in this article, unless otherwise stated.
services, guidelines were posed by the Centre for Disease Research (CDR) to restrict functional OPD services to only emergency care. Various national and international organizations regulated guidelines to suspend all the routine dental care services by private dental practitioners and institutions.16–19

The alarming situation had a significant psychological impact on dental professionals, since the signs and symptoms of COVID-19 are similar to any other viral illness; therefore, diagnosis is difficult making the dentist in doubt. Thus, the dentist is always at risk of carrying infection to home. Treating patients with limited availability of personal protective equipment (PPE) is another concern of professionals.20

There are many uncertainties related to the future of dentistry, and the main topic under discussion is what impact COVID-19 would have on the dental setting. The spread of infection might lead to reduced OPD and may restrict the dentists to perform invasive procedures. The present study was performed among the practicing pediatric dentists around the globe in order to understand the future implications. It will help us to create awareness, formulate standard operating protocols, and be prepared to tackle the upcoming challenges together.

Materials and Methods

A descriptive, cross-sectional questionnaire online survey was done to collect data from pediatric dentists who are active on social media platforms such as Face book and WhatsApp groups around the globe. All the pediatric dentists were invited to participate in this survey, and those who voluntarily gave their permission were asked to share their e-mail ids with the principal investigator. A self-administered questionnaire was developed in the Google form, and the link of the survey was sent by e-mail to each participant who voluntarily participated in the survey. Three reminder mails were sent thereafter to each participant at 1-week interval. The survey was available online for 4 weeks from first week of March to first week of April 2020.

The questionnaire was reviewed and approved by the institutional review committee. The questionnaire was pretested by 10 experts and later validated by statistician before the collection of data and then applied to the target population.

The Kappa score of reliability test was 0.86 depicting “almost perfect” agreement.

The questionnaire included 19 closed ended questions developed in English language and was categorized under three broad categories. The first category consisted of four questions about the basic sociodemographic details of the participants: their age, gender, workplace, whether they are attached to hospital, clinic or any institution, and country to which they belonged. The second and third category consisted of 15 questions pertaining to the future implications of COVID-19 outbreak on pediatric dental settings and psychological impact of COVID-19 on pediatric dental practitioner. The responses were mainly dichotomous with few multiple-choice questions. The anonymity and confidentiality of the participants were maintained throughout the study.

The estimated sample size for the study was 160, calculated using sample size calculator assuming acceptable 5% margin of error, 95% confidence interval, 80% power, and population proportion as 60%.

The collected data were analyzed with SPSS statistics software 23.0 version. Descriptive statistics such as percentage analysis and frequency analysis of survey respondents were used to describe the data.

Results

A total of 165 responses were received during the study period of 1 month which was analyzed. Of 165 participants, 41.2% were males and 58.8% were females, and 29.1% were between 20 and 30 years of age, 38.2% were between 31 years and 40 years of age, 24.8% were between 41 years and 50 years of age, 3.9% were between 51 years and 60 years of age, and 3.9% above 60 years of age.

The respondents working in hospitals were 16.4%, 32.1% were working in clinic, and 51.5% were working in institutions. Majority of responses were received from Asia (88%), 6.6% from American countries, 4.2% from Europe, and only 0.6% from Africa as shown in Table 1.

The majority of study subjects, 97%, agreed that the COVID-19 infections will affect dental practice. In all, 40% professionals believe that patients will resume with their dental treatment immediately after disclosure. Very few, 40.6%, had future plans to balance the loss in work. In all, 86.1% said they will defer dental treatment if they find suspicion of COVID-19; 91.5% reported that they should look for COVID-19 signs and symptoms after resuming practice; 96.4% of professionals reported that they will follow universal precautions of infection control for every patient; 63.6% of professionals reported that they are confused about the effective future solution to control this condition; 68.5% of professionals reported that they will continue using N-95 mask in dental practice after the outbreak; and 98.8% professionals depicted that they would like WHO to issue guidelines for dental practitioners with future considerations and effective plan as shown in Table 2.

In all, 77.7% reported that they had shut down their practice during the spread of COVID-19 outbreak; 84.2% reported that they are scared that they could carry infection from their practice or patients; 61.2% reported that they are nervous to reopen their practice after COVID-19 outbreak; 60% professionals reported that they would record every patient’s body temperature before performing dental treatment; and 85.5% reported that they would be anxious about the after effects of COVID-19 in their dental settings as shown in Figure 1.

Discussion

The present study aimed at assessing the perception of pediatric dental health professionals about COVID-19 outbreak and its impact on the future of pediatric dentistry through an online

| Table 1: Sociodemographic details |
|----------------------------------|
| Sociodemographic details | Categories | Percentage |
| Gender | Males | 41.2 |
| | Females | 58.8 |
| Age (years) | 20–30 | 29.1 |
| | 31–40 | 38.2 |
| | 41–50 | 24.8 |
| | 51–60 | 3.9 |
| | Above 60 | 3.9 |
| Workplace | Hospital | 16.4 |
| | Clinic | 32.1 |
| | Institution | 51.5 |
| Continent wise distribution | Asia | 88 |
| | Europe | 4.2 |
| | America | 6.6 |
| | Africa | 0.6 |
Impact of COVID-19 on Pediatric Dental Settings

Table 2: Future implications of COVID-19 on dental practice

| Questions                                                                 | Yes (%) | No (%) | Don’t know (%) |
|---------------------------------------------------------------------------|---------|--------|----------------|
| Do you think COVID-19 will have effect on dental field                    | 97      | 1      | 2              |
| Do you think COVID-19 positive patient will come for dental treatment immediately | 40      | 34.5   | 25.5           |
| Will you take extra-precautions during treatment after COVID-19 outbreak  | 98.8    | 0      | 1.2            |
| Will you defer Dental treatment of patients showing suspicious symptoms   | 86.1    | 4.8    | 9.1            |
| Should the COVID-19 signs and symptoms be mandated in dental case history form after resuming practice | 91.5    | 1.2    | 7.3            |
| Will you follow universal precautions of infection control for every patient | 96.4    | 2.2    | 1.4            |
| Do you have future plan to balance the suspected loss in your work setting | 40.6    | 33.9   | 25.5           |
| Are you confused about the effective future solution to control this condition? | 63.6    | 10.9   | 25.5           |
| Will you continue using N-95 mask in dental practice after COVID-19 outbreak | 68.5    | 11.5   | 20             |
| Would you like WHO to issue guidelines for dental practitioners with future considerations and effective plan | 98.8    | 0.5    | 0.7            |

Fig. 1: Psychological impact of COVID-19 on dental practitioners

Survey. The study used all the possible social media platforms and various pediatric dentistry groups to gain response from pediatric dentist across the globe. A relatively good number of responses were received from various countries. Almost equal participation was seen by both male and female practitioners giving us the perception of both genders. Majority of the respondents think COVID-19 will have an effect on dental field, as COVID-19 virus is primarily transmitted between people through respiratory droplets and contact routes.\(^{10,21–23}\) Droplet transmission occurs when a person is in close contact (within 1 m) with someone who has respiratory symptoms (e.g., coughing or sneezing) and is therefore at risk of having his or her mucousae (mouth and nose) or conjunctiva (eyes) exposed to potentially infective respiratory droplets. Transmission may also occur through fomites in the immediate environment around the infected person.\(^{24}\) Therefore, transmission of the COVID-19 virus can occur by direct contact with infected people and indirect contact with surfaces in the immediate environment or with objects used on the infected person. While doing dental treatment, all these transmission modes are possible which explains the response of majority of respondents. Almost half of the respondents were of the view that patients won’t come immediately after this outbreak, as they would fear that dental practices are a source of direct as well as indirect contact with the infected population. The other group who believes that patient may report immediately after this outbreak might be of the opinion that due to the lockdown situation many patients were on medication for their dental pain that might be eagerly waiting for dental practices to be fully functional to visit for their problems. Almost everybody was updated by the guidelines given by WHO and local authorities’ time to time for dental health professional, and this finding is quite expected from this group of respondents in view of patients and personal safety during this period. It is observed that all the dental health professionals will use extraprecautions during dental treatment after this outbreak. This is in accordance with guidelines given by various dental organizations and WHO to be followed during dental treatment:\(^{6,9,10}\)

- Dentists should follow appropriate use of PPE and hand hygiene practices.
- N95 masks with a full-face shield, in conjunction with proper utilization of goggles, gowns, and gloves should be worn when treating patients in close.
- Preprocedural mouth rinse with 0.2% povidone iodine.
- Use of disposable (single use) instruments to prevent cross-contamination.
Impact of COVID-19 on Pediatric Dental Settings

- Prefer extraoral radiographs whenever possible.
- Reduce aerosol production as much as possible through use of hand instrumentation and employment of high-speed suction.
- Dentists should use a rubber dam to minimize splatter generation.
- Patients with suspected or confirmed COVID-19 infection should not be treated in a routine dental practice setting. Instead, this subset of patients should only be treated in negative pressure rooms or AIIRs.
- Human coronavirus can survive on inanimate surfaces, with a greater preference for humid conditions. Therefore, clinic staff should make sure to disinfect inanimate surfaces using chemicals recently approved for COVID-19 and maintain a dry environment.

Majority of the dentist were of the view of deferring the dental treatment to patient with suspicious symptoms for the obvious reasons, but a small group of respondents gave the option of don’t know as their choice; may be, they are of the opinion that we cannot deny the emergency treatment of even the suspicious patients just on the basis of their symptoms, and they have to be followed through proper channel for getting their treatment done after thorough assessment of their symptoms by the concerned authorities before directly denying them treatment we have to guide them properly. As the guidelines by various dental associations suggest the use of N95 mask during dental treatment, a substantial proportion of participants agreed to follow the same for themselves. The study finding shows that almost all the dental health professionals would like to include the signs and symptoms of COVID-19 in their case history format from now onward so that it can be of help to diagnose this disease and thereby guide the patients to undergo proper investigation. As of now the fear of getting infected is so high among dental health professionals that all seem to follow universal precaution for every patient in their practice hereafter. Two-third of the respondents were not having any future plans to compensate for their suspected losses, maybe because they have their sole private practice or they work in private sector where they would not be getting paid during this outbreak. The other group of participants might be working in government sector where they would be paid during this period. All the participants are looking forward for some future guidelines for the dental health practitioners from WHO so that they can follow that in their practice for the betterment and balance the suspected losses during this period. WHO is the organization whose advisories and guidelines are followed worldwide without a second thought. The response to shutdown the practice shows that some have responded to emergency treatment and others have completely shut their dental offices. This can be explained by the advisories given by various organizations such as American Dental Association (ADA) and the American Dental Hygienists’ Association (ADHA), which have recommended postponing non-emergency and elective dental procedures. Since the announcement of a total lockdown in India on March 25, 2020, a vast number of private and government dental colleges and hospitals along with private clinics have been completely shut so as to prevent the exposure. The Dental Council India and Dental Association (IDA) of India has recommended that all the private dental clinics must voluntarily suspend non-essential or non-urgent dental care. The Indian Society of Pedodontics and Preventive Dentistry (ISPPD) also issued an advisory for Oral health professionals and Pediatric Dentists including C (Clean, Cover, Confinement), O (Observe, Online or telephonic consultation as possible), R (Restrict to emergency treatment only and all elective treatment to be postponed as far as possible), O (Obey), N (No aerosol) and A (Avoid). So, following these announcements, the respondents might have either shutdown their practice or rendering only emergency services to the society to prevent the spread of coronavirus from dental offices. Dental professionals have shown fear of carrying the infection back home from their dental practice, as already discussed the virus is highly contagious, and transmission can occur both by direct and indirect contact of the infected person. Due to this emergent outbreak and difficulty in screening the patient for COVID-19, dentists are mostly uncertain of encountering a positive patient. Seasonal flu is common among children, and with the changing weather conditions, cold and cough have become extremely prevalent. These may present with overlapping signs and symptoms of COVID-19, complicating the process of arriving at a definitive diagnosis. Also, in pediatric clinics, children are unable to express their symptoms resembling those of COVID-19 or any other viral illness. This creates a fear of exposure among pediatric dentists while performing the treatment.

The duration of subclinical infection among the population is unpredictable at present, so there will always be a chance to contract infected patients without any clinical sign and symptoms for quite some time unless we develop immunity against the virus or development of vaccine for the same. This can explain the nervousness of pediatric dentist in reopening their practices after this COVID-19 outbreak. Majority showed anxiety about the aftereffects of this pandemic on their practices due to the same reason as it will take an indefinite time to normalize the situation and dentist are at high risk for acquiring this infection from patients as they work in close proximity. Sixty percent of the dentists were of the view that they will record every patients body temperature before dental treatment which is good to start with. But this alone will not be of any benefit to diagnose COVID-19, and therefore the other group of respondents may have given this answer that maybe they will do or they will not do.

The limitations of this study are that the sample was not representative of the target population, i.e., pediatric dentist across globe, since there was unequal distribution of the sample across the various countries, majority of the responses we received were from Asian countries. So future studies can be planned in such a way that equal participation from all countries is ascertained. Still a gray area of how to approach the patients and the clinical environment maintenance calls for training and detailed guidelines for pediatric dentists worldwide who deal with the high risk population.

Conclusion

Dental health professionals are well informed about COVID-19 and are preparing themselves for future practice using WHO and other Dental Associations guidelines. This study gave us an insight into the thought process of dental health professionals during this outbreak through an online survey. Online surveys are a promising method amidst of rapidly evolving infectious disease outbreaks. Such assessments are crucial to ensure that the healthcare workers are well informed about a condition like COVID-19 and are following all the guidelines which are launched time to time to guide them to practice.

References

1. Fehr AR, Perlman S. Coronaviruses: an overview of their replication and pathogenesis. Methods Mol Biol 2015;1282:1–23.
2. Gorbanya AE, Enjuanes L, Ziebuhr J, et al. Nidovirales: evolving the largest RNA virus genome. Virus Res 2006;117(1):17–37. DOI: 10.1016/j.virusres.2006.01.017.

3. Holmes KV. SARS-associated coronavirus. N Engl J Med 2003;348(20):1948–1951. DOI: 10.1056/NEJM200310093482003.

4. Falsey AR, Walsh EE. Novel coronavirus and severe acute respiratory syndrome. Lancet 2003;361(9366):1312–1313. DOI: 10.1016/S0140-6736(03)13084-X.

5. The Lancet. MERS-CoV: a global challenge. Lancet 2013;381(9882):1960. DOI: 10.1016/S0140-6736(13)6184-8.

6. Gorbanyan A, Baker S, Baric R, et al. Severe acute respiratory syndrome-related coronavirus: The species and its viruses—a statement of the Coronavirus Study Group. 2020. https://www. biorxiv.org/content/10.1101/2020.02.07.937862v1(2020).

7. Zhu N, Zhang D, Wang W, et al. A novel coronavirus pneumonia from patients with pneumonia in China. 2019 N Engl J Med 2020;382(8):727–733. DOI: 10.1056/NEJMoa2001017.

8. Wang C, Horby PW, Hayden FG, et al. A novel coronavirus outbreak of global health concern. Lancet 2020;395(10223):470–473. DOI: 10.1016/S0140-6736(20)30185-9.

9. Lu CW, Liu XF, Jia ZF. 2019-nCoV transmission through the ocular surface must not be ignored. Lancet 2020;395(10224):e39. DOI: 10.1016/S0140-6736(20)30313-5.

10. Huang C, Wang Y, Li X, et al. Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China. Lancet 2020;395(10223):497–506. DOI: 10.1016/S0140-6736(20)30183-5.

11. To KK, Tsang OT, Chik-Yan Yip C, et al. Consistent detection of 2019 novel coronavirus in saliva. Clin Infect Dis [Internet] 2020;71(15). DOI: 10.1093/cid/ciaa149.

12. Belser JA, Rota PA, Tumpey TM. Ocular tropism of respiratory viruses. Microbiol Mol Biol Rev 2013;77(1):131–156. DOI: 10.1128/MMBR.00058-12.

13. Wax RS, Christian MD. Practical recommendations for critical care and anesthesia teams caring for novel coronavirus (2019-nCoV) patients. Can J Anaesth 2020;67(5):568–576. DOI: 10.1007/s12630-020-01591-x.

14. Holshue ML, DeBolt C, Lindquist S, et al. First case of 2019 novel coronavirus in the United States. N Engl J Med 2020;382(10):929–936. DOI: 10.1056/NEJMoa2001191.

15. Mathur N, Tyagi S, Dwivedi V, et al. Dental considerations amidst covid-19 scare. Int J Med Biomed [Internet] 2020;4(3). Available from: https://www.ijmbs.info/index.php/ijmbs/article/view/1058.

16. ADA recommending dentists postpone elective procedures [Internet]. Ada.org. 2020 (cited 24 April 2020). Available from: https://www.ada.org/en/publications/ada-news/2020-archive/march/ada-recommending-dentists-postpone-elective-procedures.

17. https://www.adha.org/COVID-19.

18. Cms.gov. 2020 (cited 24 April 2020). Available from: https://www.cms.gov/files/document/31820-cms-adult-elective-surgery-and-procedures-recommendations.pdf.

19. Isspd.com [Internet]. Isspd.com. 2020 (cited 24 April 2020). Available from: http://isspd.com/.

20. Sabino-Silva R, Jardim ACG, Siqueira WL. Coronavirus COVID-19 impacts to dentistry and potential salivary diagnosis. Clin Oral Investig 2020;24(4):1619–1621. DOI: 10.1007/s00784-020-03248-x.

21. Liu J, Liao X, Qian S, et al. Community transmission of severe acute respiratory syndrome coronavirus 2, Shenzhen, China, 2020. Emerg Infect Dis 2020;26(6). Available from: https://doi.org/10.3201/ eid2606.200239.

22. Chan J, Yuan S, Kok K, et al. A familial cluster of pneumonia associated with the 2019 novel coronavirus indicating person-to-person transmission: a study of a family cluster [Internet]. 2020;395(10223):P514–P523. DOI: 10.1016/S0140-6736(20)30154-9.

23. Li Q, Guan X, Wu P, et al. Early transmission dynamics in Wuhan, China, of novel coronavirus-infected pneumonia. N Engl J Med [Internet] 2020(13). Available from: https://www.nejm.org/doi/10.1056/NEJMoa2001316.

24. Ong SWX, Tan YK, Chia PY, et al. Air, surface environmental, and personal protective equipment contamination by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) from a symptomatic patient. JAMA [Internet] 2020;323(16):1610–1612. DOI: 10.1001/jama.2020.3227.

25. ADA recommending dentists postpone elective procedures. American Dental Association. Accessed on April 2, 2020. Available from: https://www.ada.org/en/publications/adanews/2020archive/march/adarecommandingdentists-postpone-elective-procedures.

26. ADHA COVID-19 Updates for Dental Hygienists. J Am Dent Hyg Assoc. [Internet]. 2020 (cited 24 April 2020). Available from: https://www.adha.org/COVID-19.

27. IDA Preventive Guidelines for Dental Professionals on the Coronavirus Threat. Indian Dental Association. 2020. [Last accessed on April 6, 2020]. Available from: https://www.ida.org.in/pdf/IDA_Preventive_Guidelines.pdf.

28. COVID-19 guidelines for dental colleges, dental students and dental professionals by dental council of India. Dental Council of India. [Internet]. 2020 (cited 24 April 2020). Available from: http://dciindia.gov.in/index.php/dciindia/threat.pdf.

29. ADA recommending dentists postpone elective procedures [Internet]. Ada.org. 2020 (cited 24 April 2020). Available from: https://www.ada.org/en/publications/ada-news/2020-archive/march/ada-recommending-dentists-postpone-elective-procedures.

30. Advisory by ISPPD Head office to all the oral health professionals & Paediatric Dentists. Indian Society of Pedodontics and Preventive Dentistry. [Internet] 2020 (cited 24 April 2020). Available from: http://isspd.org.in/pdfs/PHOTO-2020-03-25-12-23-30.pdf.