

# **Knowledge Attitude Practice Of Dental Practitioners Regarding The COVID-19 Pandemic - A Pilot Survey**

**ASMIDHA.T**

Department of Public Health Dentistry  
Saveetha Dental College and Hospitals,  
Saveetha Institute of Medical and Technical Science, Saveetha University, Chennai.  
Email Id: asmidhathiyagarajan@gmail.com

**Dr.D.Sri Sakthi**

Reader

Department of Public Health Dentistry  
Saveetha Dental College and Hospitals,  
Saveetha Institute of Medical and Technical Science, Saveetha University, Chennai.  
Email Id: srisakthi@saveetha.com

**Corresponding Author**

**Dr.D.Sri Sakthi**

Department of Public Health Dentistry  
Saveetha Dental College and Hospitals,  
Saveetha Institute of Medical and Technical Science, Saveetha University, Chennai.  
Velappanchavadi,  
Chennai-600077.  
Tamil nadu, India.  
Phone: 8122399966  
Email Id:srisakthi@saveetha.com

## **Abstract:**

### **Background:**

COVID-19 has been declared as a global public health emergency that is affecting people across the globe. With the increasing severity of COVID 19 pandemic it is essential that the dental health practitioners are prepared. The COVID 19 is a respiratory disease with high transmissibility and the dentist has high risk because the aerosol generated during the dental procedures exposes the dentist to the respiratory and oral section of patients. However since the dental services are stopped for a long time it is important to the dentist to be fully prepared before resuming their services.

### **Aim:**

The aim of the study was undertaken to assess the knowledge, attitude, perception of dental practitioners regarding COVID 19.

### **Materials and Methods:**

This cross sectional study was conducted amongst 52 dental practitioners. A pre-validated questionnaire was prepared based on KAP components regarding COVID-19, consisting of 15 questions. It was circulated to participants through an online platform (Google forms). The statistics were done using SPSS Software. Chi square test was used to check the association and the p value of 0.05 was said to be statistically significant.

### **Conclusion:**

The knowledge, attitude and practice of dental practitioners towards COVID-19 was found to be satisfactory, but in a feedback during the survey, many expressed interest in attending a structured CDE program covering all the minute and intricate details related to infection control and practice during and after this pandemic.

**Keywords:**

Covid-19,dental practitioners, dental treatments,highrisk,patients, innovative analysis

**Introduction:**

COVID-19 is caused by the novel coronavirus family. The unique features of this is it can transfer itself to another member of the family and it is highly transmissible and low pathogenicity(1). Its incubation period varies from 4 days to 14 days. Human to human transmission of viruses through aerosol and contact with infected people. This virus was first found in Wuhan in China(2). It is highly contagious in nature, and has spread across the world, causing many deaths. Many aged people are affected by this disease. COVID-19 has become a global health crisis with 15,296,920 cases and 6,28,903 deaths worldwide(3).Patients may be symptomatic or asymptomatic. The symptoms of the diseases are dry cough , body ache, loss of taste and smell(4).

Dentists have a high risk of contracting such infection due to their work and environment. There were a lot of chances to spread covid 19 to the dentist by the asymptomatic patients. The aerosols produced during the dental treatment pose a high risk for COVID transmission(5). Since coronavirus can be transmitted by humans,it is plausible that any patient who visits the dentist can transmit it(6))(7). During dental procedure it was unavoidable in using hand piece and ultrasonic instruments and in generation of saliva and blood(8). The risk of transmission to the dentist should be understood by the actions of the viruses(9).

The dental instruments have to be disinfected properly after every patient and dentist should see that their staff in their hospital follow all the preventive methods(10) . The dentist should make sure the patient appointments are given in a way to avoid crowding during the pandemic. Even though a lot of literature has been published regarding COVID-19 and WHO guidelines are constantly updated, many dentists are still fearful and anxious about treating their patients(11).Our team has extensive knowledge and research experience that has translate into high quality publications(12–31).The current study was undertaken to assess the knowledge, attitude , perception of dental practitioners regarding COVID 19, which would serve as a baseline for mitigation efforts and for planning continuing education programs/ workshops for the dental fraternity. Our team has performed various categories of original research and this would add to the literature base and aid in evidence based decision making.(12–20)

**Materials and Methods**

**Study Design:** cross sectional questionnaire survey

**Study setting:** Dental practitioners from a private dental institution in Chennai

**Sample size :** 52 dental practitioners

**Sampling and Scheduling:** Owing to the nature of the study design and setting, a convenience sampling method was used. The data was collected over a period of one month. Out of 102 individuals to whom the questionnaire was sent, only 52 responded and only fully filled forms were included in the survey.

**Survey Instrument:** A pre tested and validated questionnaire was used to measure the knowledge, attitude and practice of dental practitioners towards risk of COVID-19 in a private dental institution.

**Inclusion and Exclusion Criteria:** All those who were willing to participate were included in the study. Incomplete submissions were excluded from the study.

**Ethical Clearance:** Prior to the start of the study, ethical clearance was obtained from the institution ethical committee of Saveetha university

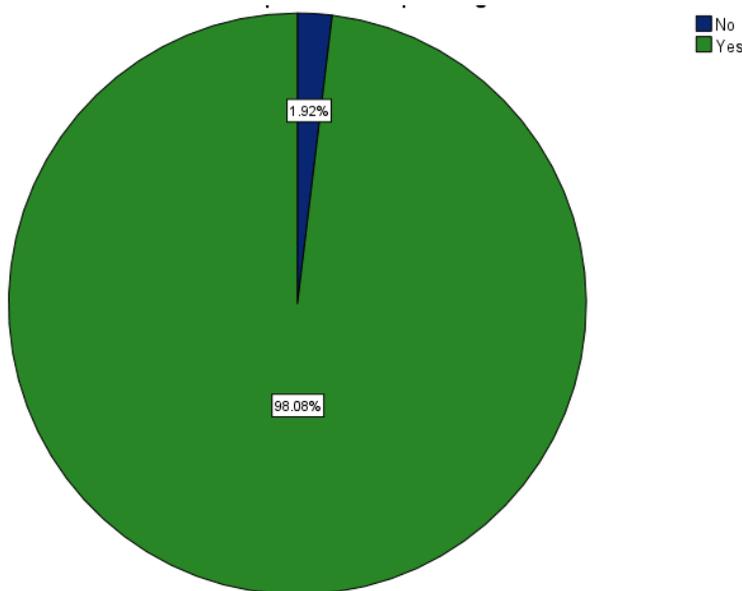
**Statistical Analysis:** The responses from the google sheet was transferred into excel and was then exported to SPSS software, version 25. Descriptive statistics was done using frequency and percentage. Inferential statistics was done using Chi square test. Interpretation was based on a p value less than 0.05, which was considered statistically significant. Comparisons were done between independent variables like age, gender and knowledge, attitude practice responses by the participants.

**Results:**

52 dental practitioners participated in this survey of which 61.54 % were females and the remaining 38.46% were males. The participants were divided into two age groups in which 63.46% of them were between 18 to 25 and 36.54 % were between 26 to 35. Considering the knowledge component, 100% participants responded that COVID 19 was diagnosed in China. 100% participants responded that the respiratory system was first affected by COVID 19.

For symptoms 36.5% told dry cough and fever, 15.4% told dry cough, fever and breathlessness, and 25% told loss of taste and smell. 84.62% responded the mode of spreading is by direct contact and for 15.38 % it is Indirect contact. 98.08% of practitioners responded yes that dentists have an important role in spreading awareness about covid 19 and 1.92% responded no that dentists did not have the role of spreading awareness about covid 19. 86.54% of dentists spread awareness regarding covid 19 and 13.46% of dentists did not spread awareness about covid 19. 63.46% of participants did not stop eating non vegetarian food during covid and 36.54% stopped eating non veg during covid 19. Social life was not affected for 40.38% of the participants whereas for 59.62% of participants covid 19 affects their social life. 90.38% of the dentists take the travel history of the patients. 98.08% of them are aware of their patients to take care of their health. 98.08% of them take preventive measures for covid 19. 96.2 % of dentist’s hospital staff were sanitized as per the WHO guidelines.

**Figure 1: Distribution of study subjects based on response regarding dentist’s role in spreading awareness regarding covid 19.**



**Figure 1:** Pie chart showing the percentage of dentists according to dentists have an important role in spreading awareness regarding covid 19. Wherein, green represents yes (98.08%) and blue colour represents no (1.92%). We observed that the majority of them felt that dentists have the important role of spreading awareness regarding covid 19 towards the patients.

Figure 2: Distribution of study based on did covid 19 affect your social life

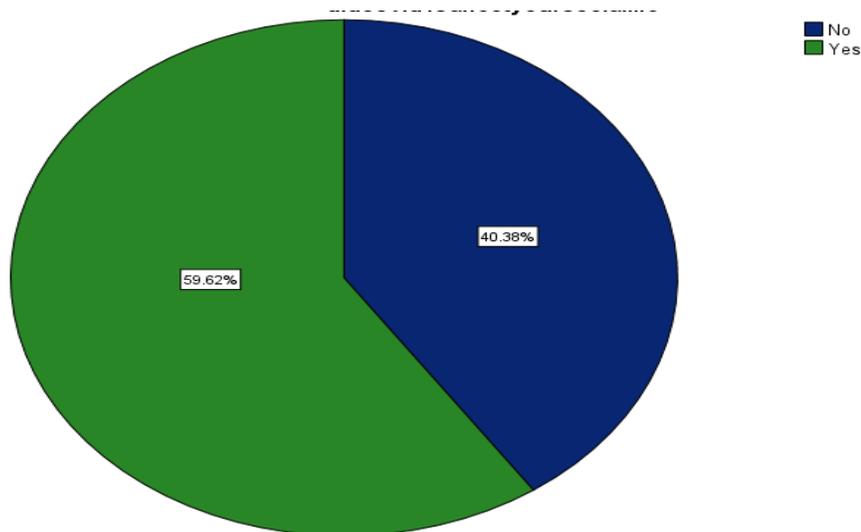
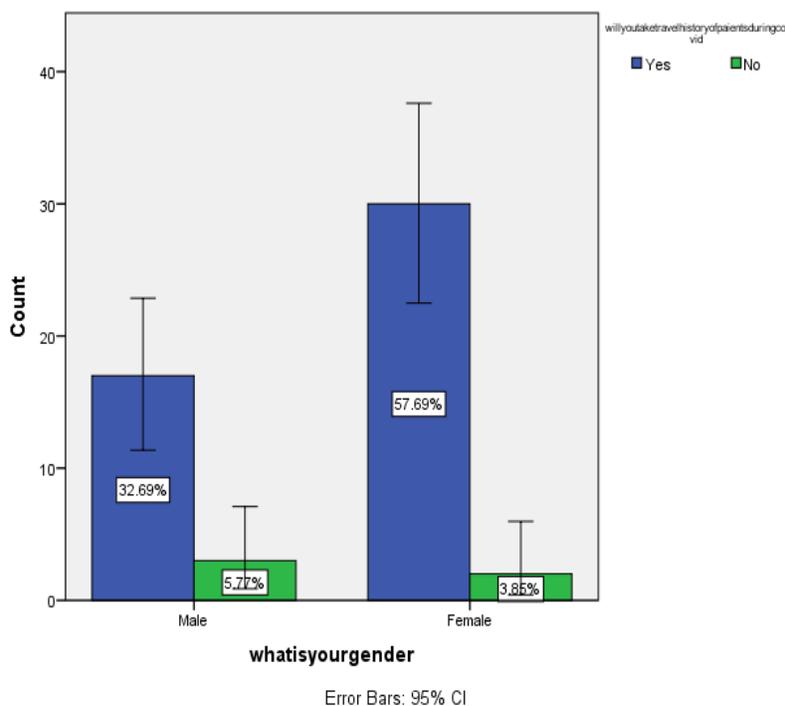


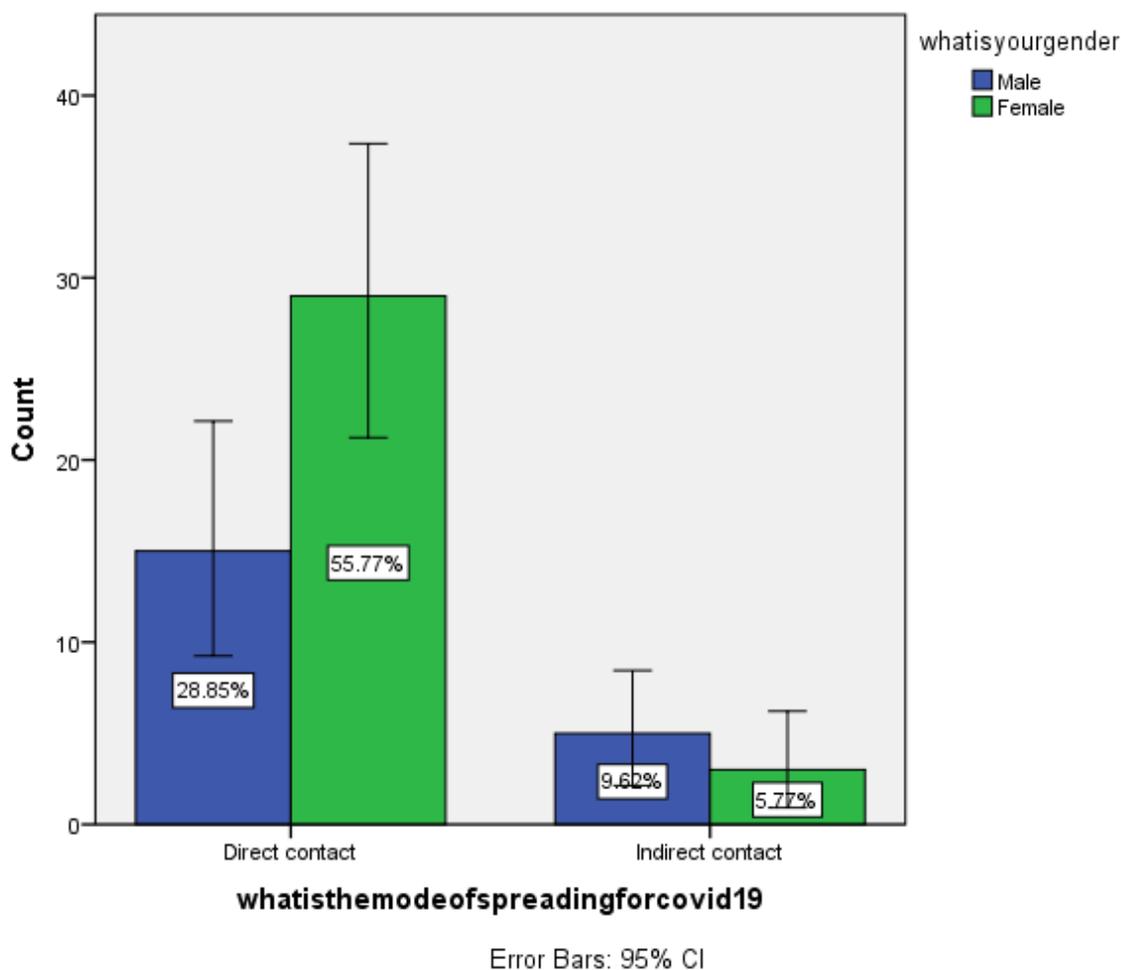
Figure 2: Pie chart depicts the distribution of study subjects based on whether COVID 19 has affected their social life or not. About 59.62% of the participants (Green) felt that the pandemic has indeed affected their social life. And 40.36% (blue) had felt vice versa

Figure 3 : Distribution of the subjects based on the taking travel history of patients who comes to dental treatments and gender of the participants



**Figure 3** : Bar graph depicts the association between the travel history of the patients and the gender of the participants. X axis represents the gender of study subjects. Y axis represents the percentage of responses. The blue colour represents the no of participants responding yes for collecting the travel history of the participants and green colour represents the no of participants responding no for collecting travel history of the participants. Majority of them in both male (32.69%) and female (57.62%) felt that it is important to collect the travel history of the patients during covid. However females felt it important to collect the travel history of the patients then the male. However this difference was statistically insignificant (chi square test value - 0.28;,  $p > 0.05$ )

**Figure 4** : distribution of subjects based on the mode of transmission of covid and the gender of the participants



**Figure 4** : Bar graph depicts the association between the mode of transmission of covid and gender of the participants. The X axis represents the mode of spreading. Y axis represents the percentage of responses. The green colour indicates the female and blue colour indicates the male. Majority of the participants both male (5.77%) and female (55.77%) felt that the mode of transmission of covid 19 is direct contact. However females responded that the mode of transmission of covid 19 is direct contact then the males. This difference was statistically insignificant (chi square test is 0.129,  $p$  value is greater than  $p > 0.05$ )

### **Discussion and Conclusion:**

COVID-19 is a contagious disease which has caused many deaths in the world. In this study 98% of them were aware of COVID 19 compared to a previous study in which 92.7% only were aware of covid 19. In the present study 90.36 % of the dentists took the travel history of the patients in comparison to previous articles 96.38% of dentists took the travel history of the patients . 86.54% created awareness about the COVID 19 study whereas in the previous study 92.7% all the dentists spread the awareness about COVID 19 (32)

In the present study 98.08% of the respondents were aware that their patients had information about COVID 19 because they believed that the dentist has a major role in spreading awareness regarding COVID- 19 to their patients. This is high than the awareness compared to a previous study of Ahmed MA, et al in which 79% of them were aware of their patients regarding COVID 19 (33). In this study 100% of the participants were aware that COVID 19 first affects the respiratory systems whereas in previous study of Kamate S, et al only 85.5% of them knew that it first affects the respiratory system and oral mucus is considered as the entry of COVID 19 so the dentist has a high risk of getting affected by covid 19(34).

In a previous study of Singh KT, et al 68.5% of them knew about vaccine availability because it was difficult to find the vaccine to covid 19 because it has a unique feature which is it can change its shape in one form to another member of the corona family. In this study all the participants are aware of the vaccine availability (35).

In the previous study of Jose J, et al the common symptoms of covid 19 majority of them told dry cough is 84.6 % and In this study 82.64% of them told dry cough as common symptoms of covid 19 and the covid 19 has other symptoms also which is fever , breathlessness, loss of smell and taste, and body aches(36). In the previous study of Aly MM, et al 94.0% of them aware of the mode of transmission of covid 19 and in these study 84.3% of the participants aware of the mode of transmission of covid 19(37).

Limitations of the study is that the sample size cannot be generalised over a population of a particular area. Surveys should be conducted on a large scale. If the survey is conducted on a large scale across the different geographical areas, more significant results can be obtained about the dentist's knowledge, attitude and practice towards the covid 19 pandemic.

In this study the dentists had good knowledge, Attitude and practise toward covid 19 pandemic. The dentist had a high risk of contracting such infection due to their work. The aerosol during the dental treatment has a high risk of covid transmission due to this the dentist has a high problem during covid. However, dental professionals have been updated with the CDC or WHO guidelines for cross-infection control.

### **Author contributions :**

**ASMIDHA T** - Study design, Data collection, Data analysis, Manuscript writing.

**Sri Sakthi D** - Study concept, Data verification, Data analysis, Manuscript drafting and correction.

### **Acknowledgment :**

We thank all the participants and Saveetha Dental College for their support to conduct this study.

### **Conflict of interest :**

The authors reported the conflict of interest while performing this study to be nil.

### **Source of funding :-**

The present project is supported/funded/sponsored by

**1. Saveetha Institute of Medical and Technical Sciences**

SaveethaDental College and Hospitals  
Saveetha University

**2. Funding organization name: Master Linque Automation**

**Reference Articles:**

1. Imran E, Khurshid Z, Adanir N, Ashi H, Almarzouki N, Baeshen HA. Dental Practitioners' Knowledge, Attitude and Practices for Mouthwash Use Amidst the COVID-19 Pandemic [Internet]. Vol. 14, Risk Management and Healthcare Policy. 2021. p. 605–18. Available from: <http://dx.doi.org/10.2147/rmhp.s287547>
2. Srivastava KC, Shrivastava D, Sghaireen MG, Alsharari AF, Alduraywish AA, Al-Johani K, et al. Knowledge, attitudes and practices regarding COVID-19 among dental health care professionals: a cross-sectional study in Saudi Arabia [Internet]. Vol. 48, Journal of International Medical Research. 2020. p. 030006052097759. Available from: <http://dx.doi.org/10.1177/0300060520977593>
3. Arora S, Abullais Saquib S, Attar N, Pimpale S, Saifullah Zafar K, Saluja P, et al. Evaluation of Knowledge and Preparedness Among Indian Dentists During the Current COVID-19 Pandemic: A Cross-Sectional Study. J Multidiscip Healthc [Internet]. 2020 Aug 24;13:841–54. Available from: <http://dx.doi.org/10.2147/JMDH.S268891>
4. Ahmadi H, Ebrahimi A, Ghorbani F. The impact of COVID-19 pandemic on dental practice in Iran: a questionnaire-based report. BMC Oral Health [Internet]. 2020 Dec 3;20(1):354. Available from: <http://dx.doi.org/10.1186/s12903-020-01341-x>
5. Khan AM, Nawabi S, Javed MQ. Dental Faculty's Knowledge and Attitude regarding COVID-19 disease in Qassim, Saudi Arabia [Internet]. Available from: <http://dx.doi.org/10.21203/rs.3.rs-25805/v1>
6. Suryakumari VBP, Pallavi Reddy Y, Yadav SS, Doshi D, Surekha Reddy V. Assessing Fear and Anxiety of Corona Virus Among Dental Practitioners [Internet]. Disaster Medicine and Public Health Preparedness. 2020. p. 1–6. Available from: <http://dx.doi.org/10.1017/dmp.2020.350>
7. Bakaeen LG, Masri R, AlTarawneh S, Garcia LT, AlHadidi A, Khamis AH, et al. Dentists' knowledge, attitudes, and professional behavior toward the COVID-19 pandemic: A multisite survey of dentists' perspectives. J Am Dent Assoc [Internet]. 2021 Jan;152(1):16–24. Available from: <http://dx.doi.org/10.1016/j.adaj.2020.09.022>
8. Gupta S, Hrishi TS, Gupta S, Kumar S, Javadi H, Gupta R. Challenges faced by dental professionals during COVID-19- A cross sectional survey [Internet]. Vol. 9, Journal of Advances in Internal Medicine. 2020. p. 60–4. Available from: <http://dx.doi.org/10.3126/jaim.v9i2.32816>
9. Mustafa RM, Alshali RZ, Bukhary DM. Dentists' Knowledge, Attitudes, and Awareness of Infection Control Measures during COVID-19 Outbreak: A Cross-Sectional Study in Saudi Arabia. Int J Environ Res Public Health [Internet]. 2020 Dec 3;17(23). Available from: <http://dx.doi.org/10.3390/ijerph17239016>
10. Duruk G, Gümüşboğa ZŞ, Çolak C. Investigation of Turkish dentists' clinical attitudes and behaviors towards the COVID-19 pandemic: a survey study. Braz Oral Res [Internet]. 2020 May 29;34:e054. Available from: <http://dx.doi.org/10.1590/1807-3107bor-2020.vol34.0054>

11. Mahdee AF, Gul SS, Abdulkareem AA, Qasim SSB. Anxiety, Practice Modification, and Economic Impact Among Iraqi Dentists During the COVID-19 Outbreak. *Front Med* [Internet]. 2020 Dec 21;7:595028. Available from: <http://dx.doi.org/10.3389/fmed.2020.595028>
12. Mathew MG, Samuel SR, Soni AJ, Roopa KB. Evaluation of adhesion of *Streptococcus mutans*, plaque accumulation on zirconia and stainless steel crowns, and surrounding gingival inflammation in primary molars: randomized controlled trial. *Clin Oral Investig* [Internet]. 2020 Sep;24(9):3275–80. Available from: <http://dx.doi.org/10.1007/s00784-020-03204-9>
13. Samuel SR. Can 5-year-olds sensibly self-report the impact of developmental enamel defects on their quality of life? *Int J Paediatr Dent* [Internet]. 2021 Mar;31(2):285–6. Available from: <http://dx.doi.org/10.1111/ipd.12662>
14. Samuel SR, Kuduruthullah S, Khair AMB, Al Shayeb M, Elkaseh A, Varma SR, et al. Impact of pain, psychological-distress, SARS-CoV2 fear on adults' OHRQOL during COVID-19 pandemic. *Saudi J Biol Sci* [Internet]. 2021 Jan;28(1):492–4. Available from: <http://dx.doi.org/10.1016/j.sjbs.2020.10.033>
15. Samuel SR, Kuduruthullah S, Khair AMB, Shayeb MA, Elkaseh A, Varma SR. Dental pain, parental SARS-CoV-2 fear and distress on quality of life of 2 to 6 year-old children during COVID-19. *Int J Paediatr Dent* [Internet]. 2021 May;31(3):436–41. Available from: <http://dx.doi.org/10.1111/ipd.12757>
16. Samuel SR, Acharya S, Rao JC. School Interventions-based Prevention of Early-Childhood Caries among 3-5-year-old children from very low socioeconomic status: Two-year randomized trial. *J Public Health Dent* [Internet]. 2020 Jan;80(1):51–60. Available from: <https://onlinelibrary.wiley.com/doi/10.1111/jphd.12348>
17. Vikneshan M, Saravanakumar R, Mangaiyarkarasi R, Rajeshkumar S, Samuel SR, Suganya M, et al. Algal biomass as a source for novel oral nano-antimicrobial agent. *Saudi J Biol Sci* [Internet]. 2020 Dec;27(12):3753–8. Available from: <http://dx.doi.org/10.1016/j.sjbs.2020.08.022>
18. Chellapa LR, Rajeshkumar S, Arumugham MI, Samuel SR. Biogenic Nanoselenium Synthesis and Evaluation of its antimicrobial, Antioxidant Activity and Toxicity. *Bioinspired Biomim Nanobiomaterials* [Internet]. 2020 Jul 23;1–6. Available from: <https://www.icevirtuallibrary.com/doi/10.1680/jbibr.19.00054>
19. Samuel SR, Mathew MG, Suresh SG, Varma SR, Elsubeihi ES, Arshad F, et al. Pediatric dental emergency management and parental treatment preferences during COVID-19 pandemic as compared to 2019. *Saudi J Biol Sci* [Internet]. 2021 Apr;28(4):2591–7. Available from: <http://dx.doi.org/10.1016/j.sjbs.2021.02.002>
20. Barma MD, Muthupandiyan I, Samuel SR, Amaechi BT. Inhibition of *Streptococcus mutans*, antioxidant property and cytotoxicity of novel nano-zinc oxide varnish. *Arch Oral Biol* [Internet]. 2021 Jun;126:105132. Available from: <http://dx.doi.org/10.1016/j.archoralbio.2021.105132>
21. Muthukrishnan L. Nanotechnology for cleaner leather production: a review. *Environ Chem Lett* [Internet]. 2021 Jun 1;19(3):2527–49. Available from: <https://doi.org/10.1007/s10311-020-01172-w>
22. Muthukrishnan L. Multidrug resistant tuberculosis - Diagnostic challenges and its conquering by nanotechnology approach - An overview. *Chem Biol Interact* [Internet]. 2021 Mar 1;337:109397. Available from: <http://dx.doi.org/10.1016/j.cbi.2021.109397>

23. Sekar D, Auxzilia PK. Letter to the Editor: H19 Promotes HCC Bone Metastasis by Reducing Osteoprotegerin Expression in a PPP1CA/p38MAPK- Dependent Manner and Sponging miR- 200b- 3p [Internet]. *Hepatology*. 2021. Available from: <http://dx.doi.org/10.1002/hep.31719>
24. Gowhari Shabgah A, Amir A, Gardanova ZR, Olegovna Zekiy A, Thangavelu L, Ebrahimi Nik M, et al. Interleukin-25: New perspective and state-of-the-art in cancer prognosis and treatment approaches. *Cancer Med* [Internet]. 2021 Aug;10(15):5191–202. Available from: <http://dx.doi.org/10.1002/cam4.4060>
25. Kamala K, Sivaperumal P, Paray BA, Al-Sadoon MK. Author response for “Identification of haloarchaea during fermentation of *Sardinella longiceps* for being the starter culture to accelerate fish sauce production” [Internet]. Wiley; 2021. Available from: <https://publons.com/publon/47375106>
26. Ezhilarasan D, Lakshmi T, Subha M, Deepak Nallasamy V, Raghunandhakumar S. The ambiguous role of sirtuins in head and neck squamous cell carcinoma. *Oral Dis* [Internet]. 2021 Feb 11; Available from: <http://dx.doi.org/10.1111/odi.13798>
27. Sridharan G, Ramani P, Patankar S, Vijayaraghavan R. Evaluation of salivary metabolomics in oral leukoplakia and oral squamous cell carcinoma. *J Oral Pathol Med* [Internet]. 2019 Apr;48(4):299–306. Available from: <http://dx.doi.org/10.1111/jop.12835>
28. R H, Hannah R, Ramani P, Ramanathan A, Jancy MR, Gheena S, et al. CYP2 C9 polymorphism among patients with oral squamous cell carcinoma and its role in altering the metabolism of benzo[a]pyrene [Internet]. Vol. 130, *Oral Surgery, Oral Medicine, Oral Pathology and Oral Radiology*. 2020. p. 306–12. Available from: <http://dx.doi.org/10.1016/j.oooo.2020.06.021>
29. J PC, Pradeep CJ, Marimuthu T, Krithika C, Devadoss P, Kumar SM. Prevalence and measurement of anterior loop of the mandibular canal using CBCT: A cross sectional study [Internet]. Vol. 20, *Clinical Implant Dentistry and Related Research*. 2018. p. 531–4. Available from: <http://dx.doi.org/10.1111/cid.12609>
30. Wahab PUA, Abdul Wahab PU, Madhulaxmi M, Senthilnathan P, Muthusekhar MR, Vohra Y, et al. Scalpel Versus Diathermy in Wound Healing After Mucosal Incisions: A Split-Mouth Study [Internet]. Vol. 76, *Journal of Oral and Maxillofacial Surgery*. 2018. p. 1160–4. Available from: <http://dx.doi.org/10.1016/j.joms.2017.12.020>
31. Mudigonda SK, Murugan S, Velavan K, Thulasiraman S, Krishna Kumar Raja VB. Non-suturing microvascular anastomosis in maxillofacial reconstruction- a comparative study. *Journal of Cranio-Maxillofacial Surgery* [Internet]. 2020 Jun 1;48(6):599–606. Available from: <https://www.sciencedirect.com/science/article/pii/S1010518220301098>
32. Sharma A, Kolte R, Kolte A. Knowledge, Attitude and Behaviour among dental students concerning infection control measures [Internet]. *Journal of Indian Dental Association*. 2019. Available from: <http://dx.doi.org/10.33882/jida.13.25165>
33. Ahmed MA, Jouhar R, Ahmed N, Adnan S, Aftab M, Zafar MS, et al. Fear and Practice Modifications among Dentists to Combat Novel Coronavirus Disease (COVID-19) Outbreak. *Int J Environ Res Public Health* [Internet]. 2020 Apr 19;17(8). Available from: <http://dx.doi.org/10.3390/ijerph17082821>
34. Kamate S, Sharma S, Thakar S, Srivastava D, Sengupta K, Hadi AJ, et al. Assessing Knowledge, Attitudes and Practices of dental practitioners regarding the COVID-19 pandemic: A multinational study

[Internet]. Vol. 57, Dental and Medical Problems. 2020. p. 11–7. Available from: <http://dx.doi.org/10.17219/dmp/119743>

35. Singh KT, Mishra G, Shukla AK, Behera S, Tiwari AK, Panigrahi S, et al. Preparedness among dental professionals towards COVID-19 in India. *Pan Afr Med J* [Internet]. 2020 Jun 19;36:108. Available from: <http://dx.doi.org/10.11604/pamj.2020.36.108.23694>

36. Jose J, Deepak S, Sugumaran S. Assessment of Knowledge, Attitude, Practice among Dental Practitioners during Covid-19 Crisis in South Indian Population - A Questionnaire Based Survey [Internet]. Vol. 11, *International Journal of Research in Pharmaceutical Sciences*. 2020. Available from: <http://dx.doi.org/10.26452/ijrps.v11ispl1.3714>

37. Aly MM, Elchaghaby MA. Impact of novel coronavirus disease (COVID-19) on Egyptian dentists' fear and dental practice (a cross-sectional survey). *BDJ Open* [Internet]. 2020 Oct 12;6:19. Available from: <http://dx.doi.org/10.1038/s41405-020-00047-0>