

## Dental Practice During SARS-CoV2 Pandemic

Nada Sanhour, M.<sup>1\*</sup> & Elhadi Mohieldin Awooda<sup>2</sup>

<sup>1</sup>Associate Professor, Department of Oral Rehabilitation, Faculty of Dentistry, University of Khartoum, Sudan  
University for Sciences and Technology, Sudan

<sup>2</sup>Associate Professor, Consultant of Restorative Dentistry, Private Sector, Sudan

**\*Correspondence to:** Dr. Nada Sanhour, M., Associate Professor, Department of Oral Rehabilitation, Faculty of Dentistry, University of Khartoum, Sudan University for Sciences and Technology, Sudan.

### Copyright

© 2020 Dr. Nada Sanhour, M., *et al.* This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Received: 21 July 2020

Published: 23 July 2020

**Keywords:** SARS-CoV2; Dental Care; Oral Health

### Introduction

SARS-CoV2 prevalently known as the COVID-19 virus, Coronavirus, [1,2] originated in December 2019 in Wuhan, China [3] and rapidly continued spreading all over the world; it was declared on 11 January 2020 by the WHO as a global pandemic [4]. Since 31<sup>st</sup> of December 2019 and according to the update of 8<sup>th</sup> July 2020, globally, there have been 11,500,302 confirmed cases of SARS-CoV2, including 535,759 deaths [5].

The disease is caused by the Severe Acute Respiratory Syndrome Coronavirus-2 (SARS-CoV-2), which belongs to the species of SARS-CoV [6]. It appears to be less lethal and highly transmissible than its predecessor SARS-CoV and MERS-CoV [1,2]. Clinically an infected person can manifest various symptoms and signs from day 2-14 after exposure and infection [7]. It could be manifested as low to high respiratory illness; characterized with cough, breathing problems (shortness of breath), high temperature (Fever), tiredness (Fatigue) and nausea, [8-10]. Recently it has been manifested only or with other symptoms of ageusia and anosmia [11]. Furthermore, chronic inflammation of the lung (pneumonia), malfunctioning of the kidney (kidney failure) and death have also appeared in patients with severe cases of COVID-19 [11,12].

The lockdown principles and the state of emergency implemented by many countries of the world have caused increased economic losses, affecting both developing and developed countries; consequently, the emergence of COVID-19 may cause psychological, social, and political impacts globally [13].

Dentistry seemed to be one of the most risky professions in SARS-CoV2 transmission, due to its nature of aerosol generating procedures [14].

This review provides an overview of the general mode of transmission specifying transmission in dental clinics. It is also overviewing the norming of dental care during this unprecedented period.

### **Possible Transmission Route in Dental Practice**

The possible mechanism of transmission of SARS-CoV-2 is primarily through two pathways; either from natural droplets when an infected person coughs, sneezes, or talks, or through oro-fecal pathways [15]. That occurs through droplet inhalation; direct contact with the person infected by the disease, direct contact with the persons exposed to the virus, infected animals, and indirect (fomites) contact transmission [16].

### **Dental Care During COVID-19**

Considering the wide spread of SARS-CoV-2 among health workers [17], dental profession resembles the top of the pyramid regarding the chances of transmitting and acquiring the virus.

Within the dental clinics, the virus with its 0.06 - 0.14 $\mu$ m size, together with the intimate proximity of patients and dental health providers supplemented by the unique type of dental procedures presented by the use of air/water syringes, low and high speed handpieces, ultrasonic scalers, air polishers and electro-surgery units, all result in aerosol generation [18]. The virus has been shown to survive in aerosols for hours and on some surfaces for days. The entire above mentioned make the dental profession a real threat regarding the spread of SARS-CoV-2 [18].

The conception of strict protocol for dental health care setting became of paramount importance. This resulted in categorizing and triaging of patients before any oral health service is provided, so during this pandemic, worldwide, dental clinics were obliged to provide exclusively emergency dental care to maximize both dental personnel's as well as patients' safety. According to the American Dental Association (ADA) dental emergencies are conditions that chance patient's life; necessitating immediate treatment to; stop bleeding, manage and reduce pulpal, periodontal or traumatic situations, take a biopsy and stop infection [19].

Dental treatments of oncology patients as well as dental adjustments when function is impaired are considered as emergencies according to ADA. Emergencies also include, replacing and adjusting of painful temporary fillings in endodontic access cavities, adjustment of the orthodontic apparatus if resulted in pain or ulceration of the oral mucosa [20].

## What Will Be the New Normal for Dental Practice?

The highest risk of transmission of respiratory viruses is during AGPs of the respiratory tract, and use of enhanced respiratory protective equipment is indicated for health and social care workers performing or assisting in such procedures... A long-sleeved disposable fluid repellent gown (covering the arms and body) or disposable fluid repellent coveralls, a filtering face piece class 3 (FFP3) respirator, a full-face shield or visor and gloves are recommended during AGPs on possible and confirmed cases, regardless of the clinical setting [21].

Regular dental practice is apparently standing still as the COVID-19 crisis had ceased all non-urgent dental treatments.

Very recently dental clinics started resuming their regular dental procedures under very strict infection control measures. The questions to be raised are:

- Will dentists be able to pay for the expensive personal protective equipment (PPE)?
- Will patients, health care systems and insurance companies be able to withstand the dramatic increase in the cost of dental management?
- The triaging of dental patients and infection control measures had decimated the daily number of patients seen; what are the consequences of such measures on the DMFT and dmft?
- Are dental industries still keeping their old pace of work?

The answer to the last question was mentioned in the British dental journal stating “the dental industry has also come to a grinding halt, with no sales of dental materials, equipment of consumables just like many other industries [18].

This answer will lead to the assumption that nearly all companies may raise the prices of their products to make up for their losses during this COVID-19 period challenging the dental profession for a parallel raise creating a virtuous circle of events that needs great efforts to mitigate the consequences on the future of dental profession and oral health.

## Conclusion

Most countries are keeping their cards close to their chest waiting for what the future may reveal regarding the provision of massive vaccination for populations and the chances of suppression of this crisis or maybe a severer attack in the winter time taking October as the expected date for the occasion.

Till that time many countries will keep eyes wide open for what developed countries may come to hoping for the best for the dental world.

Cohort studies and case control studies are highly required to scrutinize the post SARS-CoV-2 pandemic culmination on oral health and quality of life of dental patients.

## Bibliography

1. Zhu, N., Zhang, D., Wang, W., et al. (2020). A novel coronavirus from patients with pneumonia in China, 2019. *N Engl J Med.*, 382, 727-733.
2. Gorbalenya, A. E. (2020). *Severe acute respiratory syndrome-related coronavirus: The species and its viruses - a statement of the Coronavirus Study Group.* bioRxiv., (pp. 1-15).
3. Centers for Disease Control and Prevention. Transmission of coronavirus disease 2019 (COVID- 19).
4. Chen, Y., Liu, Q. & Guo, D. (2020). Emerging coronaviruses: Genome structure, replication, and pathogenesis. *J Med Virol.*, 92(4), 418-423.
5. Coronavirus disease (COVID-2019) situation reports.
6. Chan, J., Kok, K., Zhu, Z., et al. (2020). Genomic characterization of the 2019 novel human pathogenic coronavirus isolated from a patient with atypical pneumonia after visiting Wuhan. *Emerg Microbes Infect.*, 9(1), 221-236.
7. Centers for Disease Control and Prevention. 2019 Novel Coronavirus, Wuhan, China. *Symptoms & Complications.* 2020.
8. Lin, Q., Zhao, S., Gao, D., et al. (2020). A conceptual model for the outbreak of coronavirus disease 2019 (COVID-19) in Wuhan, china with individual reaction and governmental action. *International Journal of Infectious Diseases.*
9. Tian, S., Hu, N., Lou, J., et al. (2020). Characteristics of COVID-19 infection in Beijing. *J Infect.*, 80(4), 401-406.
10. Ayenigbara, I. (2020). COVID-19: An International Public Health Concern. *Central Asian Journal of Global Health*, 9(1).
11. Spinato, G., Fabbris, C., Polesel, J., et al. (2020). Alterations in Smell or Taste in Mildly Symptomatic Outpatients with SARS-CoV Infection. *JAMA.*, 323(20), 2089-2090.
12. Wu, J., Liu, J., Zhao, X., et al. (2020). Clinical Characteristics of Imported Cases of COVID-19 in Jiangsu Province: A Multicenter Descriptive Study. *Clinical Infectious Diseases.*
13. Orrù, G., Ciacchini, R., Gemignani, A. & Conversano, C. (2020). Psychological intervention measures during the COVID-19 pandemic. *Clinical Neuropsychiatry*, 17(2), 76-79.
14. Peng, X., Xu, X., Li, Y., et al. (2020). Transmission routes of 2019-nCoV and controls in dental practice. *Int J Oral Sci.*, 12(9).

15. Meng, L., Hua, F. & Bian, Z. (2020). Coronavirus disease 2019 (COVID-19): emerging and future challenges for dental and oral medicine. *J Dent Res.*, 99(5), 481-487.
16. Wu, Y., Chen, C. & Chan, Y. (2020). The outbreak of COVID-19: An overview. *J Chin Med Assoc.*, 83(3), 217-220.
17. Lan, L., Xu, D., Ye, G., *et al.* (2020). Positive RT-PCR test results in patients recovered from COVID-19. *JAMA.*, 323(15), 1502-1503.
18. Proffitt, E. (2020). What will be the new normal for the dental industry? *Br Dent J.*, 228(9), 678-680.
19. American Dental Association. *What constitutes a dental emergency?*
20. Lucaciu, O., *et al.* (2020). Oral healthcare during the COVID-19 pandemic. *Journal of Dental Sciences.*
21. Public Health England (2020). Guidance: COVID-19 personal protective equipment (PPE).