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Dilemmas and Opportunities in Dentistry in the Face of the Covid-19 Pandemic

AMINA SULTAN* and AKANKSHA JUNEJA

Dept of Pediatric & Preventive Dentistry, Faculty of Dentistry, Jamia Millia Islamia, New Delhi.

Abstract

On March 21, 2020, the "Janta Curfew" was enforced in India and extended in three parts, restricting all movement. Due to the lack of physical medical services available during that time, the suffering of people with various oral conditions increased. There was an essential lag in this face-to-face treatment during the lockdown, and the dental treatment of children declined the most among all age groups. The altered stress-related sleep patterns in younger children led parents to use faulty methods to promote sleep more frequently, such as bottle-feeding children with fermentable liquids like milk rather than honey or sugar-laden pacifiers. These actions increased their vulnerability to developing early childhood caries (ECC). The COVID-19 pandemic provides a reason for dentistry to move from a surgical intervention-based approach to that emphasising prevention and associated with the decreased aerosol generation, such as selective carious tissue excavation, sealants, resin infiltration, Silver Diamine Fluoride (SDF) application, and Hall technique. The current scenario should also prompt the researchers to do additional research applying the pandemic "shock" to dentistry to systematically explore how treatment delays affect dental health and overall well-being.

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Introduction

The World Health Organisation (WHO) declared coronavirus disease 2019 (COVID-19) a pandemic on March 11, 2020, adding to the list of life-threatening diseases in history along with bubonic plague, smallpox, cholera, and influenza. The novel Coronavirus- 2 (SARS-CoV-2) primarily spreads by direct or indirect contact with the infected patients' respiratory secretions.[1,2] During the pandemic, dental facilities worldwide remain closed to all but urgent and emergency procedures due to an upsurge in infections. Dental care providers experienced difficulties because of their closeness to infected patients. Also, the patients' mouths are open and uncovered during the treatment, increasing the risk of direct and indirect contact with infectious

CONTACT Amina Sultan asultan@jmi.ac.in Dept of Pediatric & Preventive Dentistry; Faculty of Dentistry, Jamia Millia Islamia, New Delhi.

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substances.[1] The official advisory instructed patients "to avoid non-emergent dental care" in situations they were covid-positive. Dental professionals were told, "if possible, [to] delay dental care until the patient has recovered."[3] Because of this, access to dental care was reduced globally.[1] On March 21, 2020, the "Janta Curfew" was enforced in India and later extended into three parts, restricting all movement. Due to the lack of physical medical services available during that time, the suffering of people with various oral conditions increased. Oral health care had taken a backseat. Most dentists concentrated on addressing dental emergencies as everyone was concerned about their well-being.[4] Aerosols harbouring the virus can be a risk.[2] So far, no convincing evidence in the literature exists that SARS-COV-2 virus-laden droplets have affected patients and of course, no data to reject that, either.[2] Aerosol-generating procedures on suspected or confirmed COVID-19 patients are categorised as "very high-risk" by the Occupational Safety and Health Administration. Also, infection transmission from asymptomatic individuals is a grave concern for dental staff in safeguarding themselves from the supplies of Personal protective equipment (PPE), aerosols generating procedures and equipment add to the danger.[1] Many people dread going to medical and dental care facilities because they feared the novel Covid-19 and its rapid dissemination via human-to-human contact and aerosols. Females were significantly more fearful than males.[5] There was a drop in dental patient flow and elevated anxiety in both patients and supporting staff, as reported in an Indian cross-sectional study. A 45.2% of dentists reported a significant decrease in patient numbers since the pandemic began. They also observed an alteration in patient behaviour, with 81% of patients appearing to take additional safety measures, 52.4% to be significantly anxious, 35.7% unwilling to seek treatment, 35.7% going for teleconsultations, and 14.3% completely refusing consultations, resulting in an accumulation of dental problems. In addition, 34.2% of dentists reported experiencing their auxiliary staff leaving their clinical practice.[6] Likewise, researchers in China observed that the COVID-19 pandemic significantly influenced the demand for dental services. A retrospective study conducted in Beijing, China, indicated that 1567 patients received emergency dental care pre-COVID-19, in contrast to 970 patients throughout the pandemic. Data observed a 38.1% drop in emergency dental care utilisation, demonstrating that the COVID-19 outbreak hugely impacted emergency dental care utilisation.[7]

The COVID-19 global pandemic and associated longer lockdowns have directly affected the lives of children and caused changes in the surrounding environment of the younger population in which they develop.[8] The economic consequences of the pandemic have resulted in decreased family revenue and elevated parental anxieties and stress. Many countries had imposed school closures, affecting over eighty per cent of children.[9]

Due to the pandemic and associated lockdowns in 2020, 1.5 million schools in India were closed, affecting 247 million children enrolled in primary and secondary schools. Furthermore, approximately six million girls and boys had already been out of school much before the arrival of COVID-19.[10] The closing of schools and the adoption of online employment intensified the responsibility of the parents, particularly mothers who perform their jobs from home.[11] which could have resulted in the absence of appropriate caregiving. These alterations may have increased ECC risks, considering that reduced household income, anxiety among parents, and neglectful attitude are all known determinants for childhood dental caries.[12] There was an essential lag in this face-to-face treatment during the lockdown, and the dental treatment of children declined the most among all age groups.[13] The frequency of follow-ups and dental check-ups was also affected, limiting the prevention and promotion of oral health care for children.[8] Teledentistry provided remote diagnosis and oral care to children with dental issues in these situations most frequently.[14] Furthermore, zone-based quarantine and isolation measures, the disruptions to families, communities, and everyday routines also negatively impacted the movements of children.[15] Children were somewhat or significantly less active and confined to their homes during social isolation. While there was an increase in the consumption of foods high in carbohydrates during the pandemic, children's reports of their brushing practice varied, indicating brushing habits did not change or get worse. However, social isolation-related lifestyle changes, patient socioeconomic level, and the temporary closure of dental clinics may have had an impact on the risk for caries lesions formation. Poor oral

hygiene and a cariogenic diet can lead to dysbiotic microbiota and the emergence of biofilm-mediated dental ailments, like, Dental caries and gingivitis[14]

Throughout the lockdown in Wuhan, preschool children reported being proactive in brushing their teeth, yet, 60.8, 35.5, and 18.3% reported dental caries, toothache, and halitosis, respectively.[16] Likewise, during the social isolation of the pandemic, parents/guardians in Brazil and Portugal observed alterations in the daily routine and an association of poor oral health with altered sleep patterns in their children.[17]

The infection anxiety and home confinement during the Covid-19 pandemic were also associated with elevated stress levels that affected the physical and mental health of children. The altered stress-related sleep patterns in younger children led parents to use faulty methods to promote sleep more frequently, such as bottle-feeding children with fermentable liquids like milk rather than honey or sugar-laden pacifiers. These actions increased their vulnerability to developing early childhood caries (ECC).[8]

Pediatric dentistry must adopt new approaches and management techniques once the pandemic ends. It does not; however, appear that this pandemic might end any time soon, given the current state of COVID-19's global spread. Furthermore, there is a growing concern that SARS-CoV-2 will not go away and might become another endemic virus in the general population.[4] Although there is a lot that we do not know about COVID-19, we must adjust to dealing with the pandemic since we cannot continue to live in fear forever. Moreover, the COVID-19 pandemic provides a reason for dentistry to move from a surgical intervention-based approach to one emphasising prevention.[3] As COVID-19 endangers increased disparities in dental health access for the most disadvantaged population, healthcare professionals related to oral well-being have no choice but to move toward preventive care. This endeavour will reinforce nonsurgical, non-aerosol-generating caries prevention and management strategies.[1] Utilisation of minimally invasive therapies as well as atraumatic restorative techniques, such as selective carious tissue excavation, sealants, resin infiltration, Silver Diamine Fluoride (SDF) application, Hall technique and decreased aerosol-generating procedures (AGP), reduces the risk of viral cross-infection, favouring a safer clinical environment.[2,14] SDF (Silver Diamine Fluoride) is a colourless solution with a pH of 10. To minimise droplet and aerosol production, the carious tooth surface is dried with cotton instead of compressed air, and then SDF is applied using a micro brush or a tiny applicator tip without the need for complicated instruments and dental equipment. SDF is beneficial in treating early childhood caries, particularly when conventional management cannot be performed for young patients.[2] Dentists can also consider using GIC or ART sealants instead, as these do not require rinsing or desiccation for placement, to prevent further progress of dental caries.

Considering that dental services have decreased though evenly across society, should push government officials and controlling bodies from various groups establish regulations and implement or sponsor policies that encourage people to visit the dentist. The inability to do so may worsen the already existing oral health inequities.[13] The COVID-19 pandemic may also promote the adoption of advanced dental workforce simulations, such as dental therapists or hygienists who carry out at least three years of higher education and offer a restricted variety of services along with a dentist, including restorative and periodontal therapies. Studies have proved that dental therapists lessen total dental expenses and enhance access in indigenous and remote areas. The decreased cost of dental therapists may encourage acceptance or a flexible range of practice in a recovering economy.[18] The current scenario should also prompt the researchers to do additional research applying the pandemic "shock" to dentistry to systematically explore how treatment delays affect dental health and overall well-being.[13] Research could further emphasise the importance and challenges associated with dental treatment as a tool for enhancing the standard of health and eliminating health inequities.

Conclusion

As policymakers work towards reducing the COVID-19 pandemic's damaging impact on oral health services, they should continue to study the long-term implications of the pandemic on delayed dental treatment.

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Conflict of Interest

Nil

References

1. Brian Z, Weintraub JA. Oral Health and COVID-19: Increasing the Need for Prevention and Access. Prev Chronic Dis. 2020 Aug 13;17: E82. doi: 10.5888/pcd17.200266. Erratum in: Prev Chronic Dis. 2020 Aug 27;17: E93.
2. Sultan A, Juneja A, Singh N. Aerosol phobia and SARS-CoV-2 spread amongst dentists: Hype vs reality! Int J Oral Health Dent 2020;6(4):262-266
3. Centers for Disease Control and Prevention. Guidance for dental settings. https://www.cdc.gov/coronavirus/2019-ncov/hcp/infection-control-recommendations.html [assessed on 24/04/23]
4. Singh N, Sultan A, Juneja A, Aggarwal I, Palkit T, Ohri T. Integration of Teledentistry in oral health care during COVID-19 pandemic. Saint Int Dent J 2020; 4:77-81
5. Nazir M, Almulhim K, AlDaamah Z, et al. Dental fear and patient preference for emergency dental treatment among adults in COVID-19 quarantine centers in Dammam, Saudi Arabia. Patient Prefer Adherence. 2021; 15:1707–1715. doi: 10.2147/ppa.s319193
6. Shinde O, Jhaveri A, Pawar AM, Karobari MI, Banga KS, Arora S, Bhardwaj A, Djuanda AG, Wahjuningrum DA. The Multifaceted Influence of COVID-19 on Indian Dentists: A Cross-Sectional Survey. Psychol Res Behav Manag. 2022 Aug 1; 15:1955-1969. doi: 10.2147/PRBM.S370637.
7. Guo H, Zhou Y, Liu X, Tan J. The impact of the COVID-19 epidemic on the utilization of emergency dental services. J Dent Sci. 2020; 15:564–567. doi: 10.1016/j.jds.2020.02.002
8. Luzzi V, Ierardo G, Bossù M, Polimeni A. Paediatric oral health during and after the COVID-19 pandemic. Int J Paed Dent. (2021) 31:20– 6. doi: 10.1111/ipd.12737
9. Van Lancker W, Parolin Z. COVID-19, school closures, and child poverty: a social crisis in the making. Lancet Public Health. 2020;5: e243–4. https://doi.org/10.1016/s2468-2667(20)30084-0.
10. https://www.unicef.org/india/press-releases/covid-19-schools-more-168-million-children-globally-have-been-completely-closed
11. Heggeness ML. Estimating the immediate impact of the COVID-19 shock on parental attachment to the labor market and the double bind of mothers. Rev Econ Househ. 2020;18(4):1053–78. https://doi.org/10.1007/s11150-020-09514-x.
12. Yusuke Matsuyama, Aya Isumi, Satomi Doi, Takeo Fujiwara; Impacts of the COVID-19 Pandemic Exposure on Child Dental Caries: Difference-in-Differences Analysis. Caries Res 3 February 2023; 56 (5-6): 546–554. https://doi.org/10.1159/000528006
13. Semprini J. Estimating the Within-Person Change in Dental Service Access Measures during the COVID-19 Pandemic in the United States. Int J Dent. 2023 Apr 25; 2023:5601447. doi: 10.1155/2023/5601447.
14. Reis RM, Carlo HL, Dos Santos RL, Sabella FM, Parisotto TM, de Carvalho FG. Possible Relationship Between the Oral and Gut Microbiome, Caries Development, and Obesity in Children During the COVID-19 Pandemic. Front Oral Health. 2022 May; 3:887765. doi: 10.3389/froh.2022.887765
15. Juneja A, Singh N, Sultan A, Juneja A, NEGATIVE IMPACT OF COVID - 19 ON THE LIVES OF CHILDREN: AN INDIAN PERSPECTIVE.J Adv Sci Res, 2020;11 Suppl 3: 44-48
16. Liu C, Zhang S, Zhang C, Tai B, Jiang H, Du M. The impact of coronavirus lockdown on oral healthcare and its associated issues of pre-schoolers in China: an online cross-sectional survey. BMC Oral Health. (2021) 21:54. doi: 10.1186/s12903-021-01410-9
17. Baptista AS, Prado IM, Perazzo MF,

Pinho T, Paiva SM, Pordeus IA, et al. Can children's oral hygiene and sleep routines be compromised during the COVID-19 pandemic? Int J Paediatr Dent. (2021) 3:12–9. doi: 10.1111/ipd.12732

18. https://psnet.ahrq.gov/primer/covid-19-and-dentistry-challenges-and-opportunities-providing-safe-care Updated February 23, 2022