

“Impact of Covid-19 on the Dentistry – Improvise, Adapt & Overcome”

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Abstract

COVID-19 became a major public health crisis worldwide in February 2020. India is among the top three worst-affected nations. Dental professionals are at high risk of getting COVID-19 due to aerosol-generating procedures, saliva splatter etc. This pandemic has highlighted some of the major gaps in dental research and the need for new relevant knowledge to manage the current crisis and minimize the impact of such outbreaks on dentistry in the future. Dental clinics were closed due to lockdown; which has affected the dentists financially. COVID-19 is going to be a part of life, therefore we have to improvise and adapt to overcome the situation and losses incurred. This research focuses on the analysis of dental practice before and after Corona, its impact on the psychology of dentists, financial and other losses sustained thereby giving recommendations for the dental practice during patient screening, infection control strategies, and patient management protocol; as COVID-19 has long-term impacts on clinical practice, dental education, and dental research.

Keywords: COVID-19, Coronavirus, Dentist, Pandemic, Lockdown

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I. Introduction

✓ Several outbreak (such as H1N1, H5N1, avian influenza, Ebola, SARS, Zika, and Nipah) have affected India and other countries in the past, which were successfully tackled with appropriate research. COVID-19 became a major public health crisis worldwide in February 2020. India is among the top three worst-affected nations.^{1,2} Coronavirus pathogens lead to respiratory illness and spread by coughing and sneezing without covering the mouth.² Dental professionals are at high risk of getting COVID-19 due to aerosol-generating procedures, saliva splatter etc.^{3,4}

RESEARCH OVERVIEW

The research paper focuses on:

- ✓ Analysis of difference in dental practice before and during COVID-19;
- ✓ COVID-19 impact on the psychology and working of dentists;
- ✓ Long-term impacts of COVID-19 on clinical practice, dental education and dental research;

IMPACT OF COVID-19 ON DENTISTRY

1. Psychological impact
2. Societal pressure
3. Impact on dental practice
4. Requisites in dental setup
5. Financial loss
6. Creating awareness: The need for communication

PSYCHOLOGICAL IMPACT

Our medical fighters and medical resources are limited to combat the COVID-19 pandemic. Doctors and paramedical staff are getting sick due to exhaustion as they are working for extra hours. Dentists feel so helpless like an amputated person that even after being a major in such a prestigious medical degree, they are unable to combat this pandemic with my fellow doctors. Hence, there is an urgent need for reform in dental education system, so that dentists can also lend a hand in such situations.

SOCIETAL PRESSURE

Societies play a significant role in uplifting or downgrading a person’s motivation level. Doctors were fighting the Coronavirus and Dentists (doctors) were relaxing at home, have arisen due to the gaps in dental education. Dentist couldn’t help much nation in such a difficult situation.⁵

IMPACT ON DENTAL PRACTICE

All dentists limit their dental care to only emergency cases. Patient flow to clinics were affected because of involved risks. All dental practices were advised to run a remote service. Prosthodontist deal with geriatric patients most of the time and these patients generally have low immunity and more vulnerable to the infection. The lack of such patients in the clinics will surely affect the practice.^{6,7}

IMPACT ON DENTAL PATIENTS

Patients tend to go for extraction (single visit treatment) as a definitive treatment. Patients above 60 years of age are more prone to catch COVID so they avoid any type of treatment that affects their health and mental status.

IMPACT ON DENTAL ACADEMICS

Routine face-to-face educational sessions are stopped and shifted to online lectures, webinars and computer-based exams. Students can get very stressed due to the fear of getting infected by the virus or delay in their academic years.

IMPACT OF COVID-19 ON DENTAL RESEARCH

COVID lead to the immediate lockdown around the globe, due to which dentists had to stop routine dental procedures and outreach activities. Post-graduate student research projects were suspended.

REQUISITES IN DENTAL SETUP

Dentists and their assistants must use complete personal protective gear, thoroughly wash their hands, rubber dam isolation and use of anti-retraction handpiece. Strict disinfecting protocol for clinical environment dental clinics will require newly structured and redesigned clinics. Clinics should have high power exhaust fans and all reusable instruments and items should be pre-treated, cleaned and sterilized properly. Posting visual alert icons at the entrance.

AT THE TIME OF TREATMENT

PPE (Personal Protective Equipment) kit should be used by dental surgeon and dental assistant and before starting any procedure mouth rinse with 0.5–1% hydrogen peroxide.

POST TREATMENT

Coronaviruses lose their viability significantly after 72 hours. Mop the floor (1% sodium hypochlorite) and disinfecting waterlines (0.01% sodium hypochlorite) can help reduce the risk of cross-infection. All biomedical waste should be carefully disposed. Treatment outcomes can be monitor by using mobile photography.⁸

FINANCIAL LOSS

Significant monetary investments are required to continue the safe dental practice. **(FIGURE-1)**

CREATING AWARENESS: THE NEED FOR COMMUNICATION

Communication is required at different levels. Dentists need to find the right way of articulating knowledge and information to prevent fear-mongering amongst patients.

ROLE OF TELE-MEDICINE: It is a great initiative to close the distance between the public, doctors and healthcare providers.^{9,10}

SURVEY

The overall aim of the study is to examine the impact of COVID-19 on the dental students and dental practitioners and to put forward the required changes in dentistry.

- Various dental colleges, hospitals and clinics based in India were selected for the study.
- Primary data was collected from respondents through the online and offline filling of the questionnaire.
- The number of responses received is 70. **(FIGURE-2)**

RESULT: SURVEY ANALYSIS

(FIGURE-3 TO 8)

CONCLUSION: IMPROVISE, ADAPT & OVERCOME

“WHO's stated that there is a chance that the novel coronavirus can never be eradicated as the HIV has not been yet”

- ✓ There is a need of mental health counseling, patient counseling and education.
- ✓ Increased the role of e-consultancy and tele-medicine.
- ✓ Non-clinical teaching can be prioritized until the clinical teaching facilities can re-open.
- ✓ Lastly, the government should come forward to collaborate with the dental and medical fraternity to ensure dentists get all the help they need to surge through these extraordinary circumstances.^{11,12}

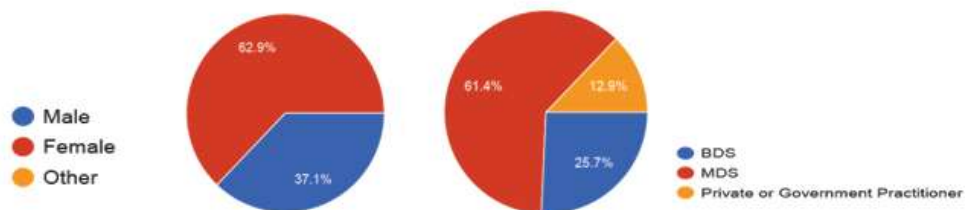
“We are in this together – and we will get through this, together”

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INCOMPLETE TREATMENT	PROBLEM ARISING	LOCKDOWN EFFECT	EXTRA COST BORE BY THE DENTIST
Undelivered Dentures	Shrinkage and distortion	After 100 days these dentures are of no use.	Total or partial cost of new dentures.
Undelivered crown/ prosthesis	Post RCT (Root Canal Treatment), teeth become brittle.	Patients suffering from difficulty in mastication.	Total or partial cost of recovery of patient's lost teeth.
Unattended Full mouth rehabilitation cases	If temporary prosthesis breaks, it will result in a change in dimensions	Procedures were left in the middle, with undelivered crown	Total or partial cost of new prostheses

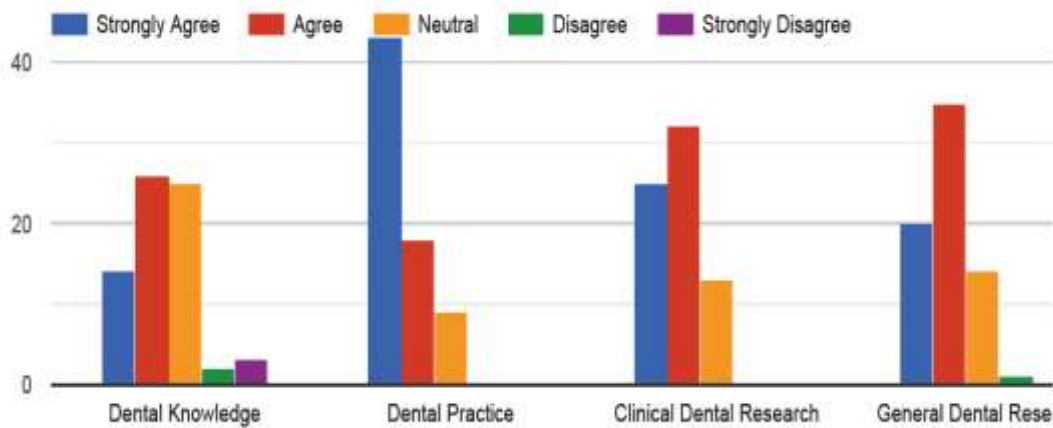
(FIGURE-1)



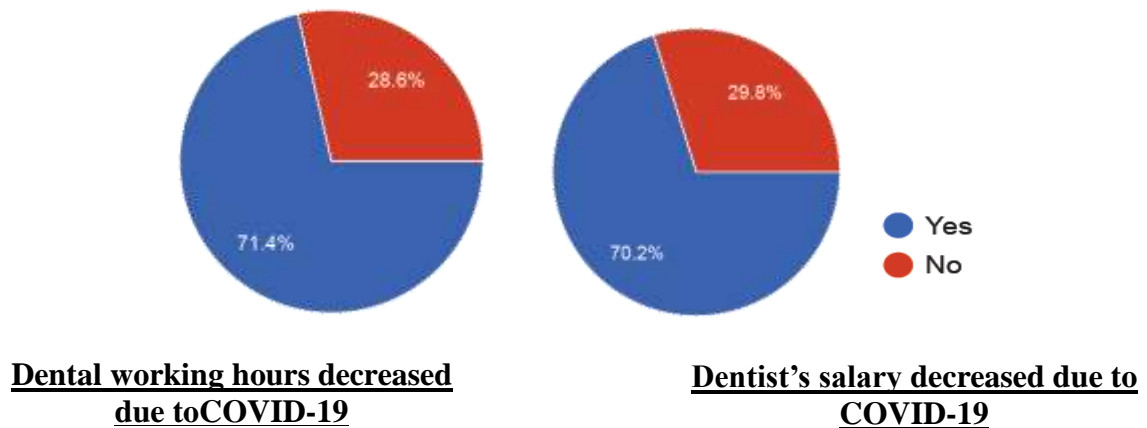
(FIGURE-2)

NULL HYPOTHESIS	RESULT
<ul style="list-style-type: none"> • COVID-19 has affected dental students and practitioners psychologically and financially. • COVID-19 has affected dental knowledge severely. 	<ul style="list-style-type: none"> • COVID-19 has not only affected them psychologically (60%) and financially(52.9%), but has also impacted their academics(58.6%). • Majority respondents (57.14%) believe their academics were affected in terms of knowledge and research.

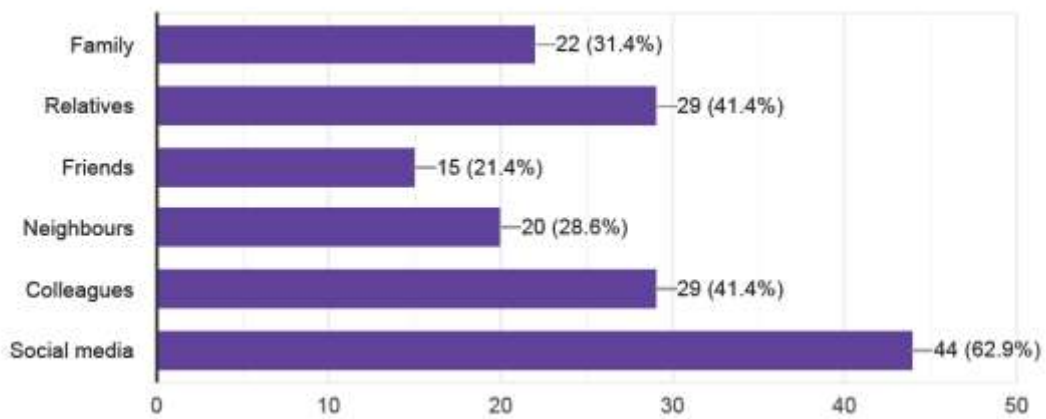
(FIGURE-3)



(FIGURE-4.IMPACT OF COVID-19 ON DENTAL ACADEMICS)



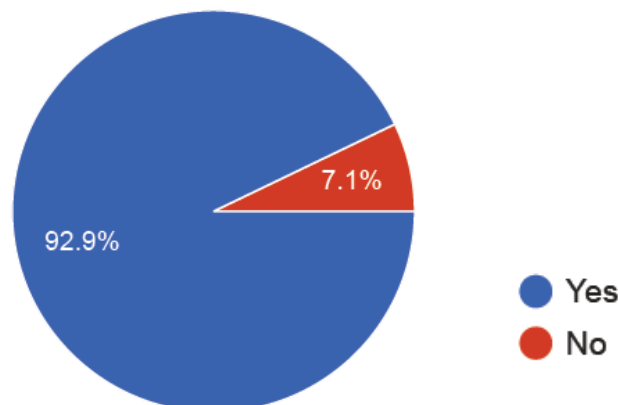
(FIGURE-5)



(FIGURE-6. IMPACT OF SOCIETY)

NULL HYPOTHESIS	RESULT
<ul style="list-style-type: none"> • Dentists would have proven to be an asset in fighting COVID-19 along with other doctors if they were given basic medical knowledge and practice in their academics. • Patients want Single visit treatment • CAD-CAM or 3D printing is a good alternative to prevent the spread of infection. • Dental course structure need to be revised to train dentists for basic medical emergencies. 	<ul style="list-style-type: none"> • Yes(92.9%) • Patients want Single visit treatment(82.9%) instead of conservative treatment. • 70% of respondents agree with it. • 95.7% of respondents agree with it.

(FIGURE-7)



(FIGURE-8. Dentists would have proven to be an asset in fighting COVID-19 along with other doctors if they were given basic medical knowledge and practice in their academics)

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