



# Implications of COVID-19 on the Training and Mental Health of Oral Medicine and Radiology Residents in India: A Questionnaire Study

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## ABSTRACT

**Introduction:** The Coronavirus disease 2019 pandemic has significantly affected oral health services and clinical education. Interruption of educational activities, challenge of training in an ambiguous environment of constantly evolving quarantine, patient care and travel guidelines, abrupt social seclusion and fear of contracting the virus or infecting family members may have affected residents' psychological well-being.

**Aims and objective:** To evaluate the resident and faculty perception of the influence of the Coronavirus disease 2019 pandemic on the education, teaching practice and psychological well-being of oral medicine and radiology residents.

**Materials and methods:** An anonymous 20 items online questionnaire was e-mailed to faculty and residents of the Indian academy of oral medicine and radiology accredited OMR residency programs in India. Survey questions aimed at the pandemic's effect on resident educational, clinical and research activities and the welfare of the residents. Survey data were collected using Google forms.

**Results:** 104 participants to the survey. Despite the interruptions in the clinical, research and educational activities, on-time resident graduation was accomplished.

**Conclusion:** Irrespective of restraints owing to the pandemic, OMR residency programs efficaciously sustained clinical activities, didactic training, research proficiency through virtual means and a hybrid delivery care model consigning a positive impact as inaugurating opportunities towards the mental well-being of the residents.

**Keywords:** COVID-19; Mental health; Oral Medicine and radiology; Pandemic; Didactic training

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## INTRODUCTION

The world health organization, on March 11, 2020, declared the Coronavirus (COVID-19) outbreak a global pandemic [1]. In addition to the rapid, global spread, new and comparatively more contagious variants are of considerable concern. These emerging mutations threatened global public health, creating COVID-19 surges in different countries [2]. Strict isolation strategies such as social distancing and stay at home orders affected the delivery of patient care and clinical and didactic training and adversely affected faculty and trainees' mental health and well-being [3]. At the beginning of the pandemic, to limit COVID-19 transmission and also to conserve personal protective equipment for those on the frontline offering medical care to patients severely affected by COVID-19, the Dental Council of India recommended most dental education institutions limit dental services and all routine clinical activities of all specialties were deferred [4]. In contrast to general dental practice, oral medicine and radiology is the specialty that focuses on the diagnosis and medical management of complex diagnostic and medical disorders affecting the mouth and jaws, radiology part equips the budding dentists in the field of diagnosis using conventional and advanced imaging methods and thus does not routinely involve aerosol-generating procedures. Most dental residency programs, didactic activities transitioned to virtual academic sessions, national educational/research conferences were postponed or canceled and standardized examinations were modified to adopt remote technology. Several clinical practices successfully adopted a hybrid model with telemedicine services to maintain continuity of care. Interventions in the situation led to a toll on the mental status of the residents. Residency exemplifies a vulnerable window for mental health in the physician's life cycle. Interruption of educational activities, the challenge of training in an ambiguous environment of constantly evolving quarantine, patient care and travel guidelines, abrupt social seclusion and fear of contracting the virus or infecting family members may have affected residents' psychological well-being [5]. This study aimed to evaluate the impact of the COVID-19 pandemic on the training experience, education and psychological well-being of OMR residents.

## MATERIALS AND METHODS

Ethical clearance obtained from the concerned department under the guidance of head of department.

**Table 1:** Demographic characteristics of 104 survey respondents from the department of oral medicine and radiology.

Demographic characteristics (N=104)	N	Percentage
<b>Designation in the program</b>		
Faculty	41	39.40%
Junior resident 1 <sup>st</sup> year	16	15.40%
Junior resident 2 <sup>nd</sup> year	15	14.40%

## Study Population

A survey based study to evaluate resident and faculty discernments of the effect of the COVID-19 pandemic on the training, education and well-being of residents in the IAOMR accredited residency programs in India.

## Survey Tool and Data Collection

A 20-element online survey questionnaire was developed using Google Form (Google drive). The survey was emailed the faculty and residents of IAOMR accredited residency programs in India. All participants gave their implied consent through participation in the study. The survey was open from February 27, 2022, through March 20, 2022. The study endpoints included the evaluation of the pandemic's impact on the education (both clinical and didactic of the OMR residency programs and its perceived effect on the mental well-being of the residents.

## Statistical Analysis

Eloquent statistics, involving quantitative analysis of the valid responses, were examined. The content of each response was assessed and evaluated through Google Forms, Surveys created and analyzed on web browser no special software required. Instant results obtained as the forms were filled and, summarized survey results at a glance with charts and graphs.

## RESULTS

### Respondent's Attributes

A total of 104 individuals (60.5% residents and 39.4% faculty members from IAOMR accreditation, India responded to the online survey. Most respondents were from programs that had more than 5-residents. (38.5%; n=40, followed by residents More than 3 but less than 5 (31.7%; n=33) and programs with less than 3 residents (29.8%; n=31) (Table 1).

Junior resident 3 <sup>rd</sup> year	20	19.20%
Senior resident or higher	12	11.50%

#### Training setting of your program

Dental school setting	56	53.80%
Hospital based setting	35	33.70%
Private dental setting	11	10.60%
Other	2	1.90%

#### Program size

Less than 3	31	29.80%
More than 3 but less than 5	33	31.70%
More than 5	40	38.50%

### Effect on Resident Educational, Clinical and Research Activities

Most of the respondents (51.9%; N=54) reported that the Residents were involved in in-person consultations only despite the pandemic, followed by an adaptation to a newer modality where residents (41.3%; N=43) were involved in both tele-health and in-person consultations and a very few residents (3.8%; N=4) not assisting with any clinical activities. Most of the respondents (29.8%; N=31) reported decrease in 25%-50% of clinical patient interaction, at its lowest with majority residents (41.3%; N=43) reporting that some off-site rotations were being held in-person and others were being conducted virtually. As in terms of the didactic training, majority of the respondents (40.4%; N=42) reported 25%-50% of the didactic training switched to a virtual platform. This did entail a Positive impact amongst the respondents. (57.7%; N=60) empowering over the negative impact (23.1%; 24) and no impact (19.2%; 20) respondent (39.40%; N=41) reported

that the examinations and assessments were being conducted both in-person and virtually, majority (51%; N=53) reported that the process of academic examinations and assessments remain unchanged and continue in-person. In terms of research activities, 50% (N=52) reported that there have been slight delays in the research activities, followed by 32.70% (N=34) of the activities halted indefinitely have been resumed currently. 15.40% (N=16) did report research activities to remain unchanged. Despite the interruptions in the clinical, research and educational activities 22.10% (N=23) reported timely graduation of the residents. Whereas majority (47.10%; N=49) told timely graduation of some of the graduates to be delayed. 20.20% (N=21) predicted the graduation of all the currently enrolled residents may be delayed and 10.60% (N=11) remained unsure or did not know (Table 2).

**Table 2:** Effect on resident activities (N=104).

Effect on resident activities (N=104)	N	Percentage
<b>Clinical activities</b>		
Residents are involved in both tele-health and in-person consultations	43	41.30%
Residents are involved in in-person consultations only	54	51.90%
Residents are involved in tele-health consultations only	3	2.90%
Residents are, currently, not assisting with any clinical activities	4	3.80%
<b>Reduction in the patient volume, at its lowest</b>		
No change	11	10.60%

Decrease in <25% of clinical patient interactions	30	28.80%
Decrease in 25%-50% of clinical patient interactions	31	29.80%
Decrease in 50%-75% of clinical patient interactions	18	17.30%
Decrease in >75% of clinical patient interactions	8	7.70%
Resident clinical activities completely halted	6	5.80%
<b>Impact on external/off-site rotations</b>		
Off-site rotations remain unchanged and continue to be in-person	23	22.10%
Off-site rotations have now shifted to virtual platforms	27	26%
Some off-site rotations are being held in-person and others are being conducted virtually	43	41.30%
All the offsite rotations are on hold indefinitely	11	10.60%
<b>Didactic training program being switched to a virtual platform</b>		
0%, all the didactic training continues to-be in-person	15	14.40%
Less than 25% of the didactic training has switched to a virtual platform	37	35.60%
25-50% of the didactic training has switched to a virtual platform	42	40.40%
100%, all the didactic training has switched to a virtual platform	8	7.70%
All the didactic sessions have halted	2	1.90%
<b>Academic examination of its residents in-lieu of social distancing</b>		
The process of academic examinations and assessments remain unchanged and continue in-person	53	51%
The examinations and assessments are now conducted on a virtual platform only	8	7.70%
The examinations and assessments are conducted both in-person and virtually	41	39.40%
Due to the pandemic, all the examinations and assessments have been halted	2	1.90%
<b>Overall impact on the research activities</b>		
Research activities remain unchanged	16	15.40%
There have been slight delays in the research activities	52	50%
Research activities were on hold, but have resumed now	34	32.70%

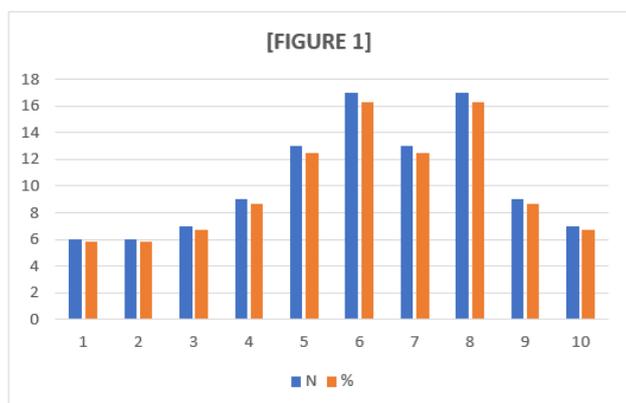
Research activities continue to be halted 2 1.90%

**Timely graduation of the residents**

No, all the residents will graduate on time 23 22.10%  
 Yes, the graduation of some of the currently enrolled residents may be delayed 49 47.10%  
 Yes, the graduation of all the currently enrolled residents may be delayed 21 20.20%  
 Do not know/unsure 11 10.60%

**Alleged Effect on Resident Morale**

On inquiring about the impact of COVID-19 on the morale of the residents, 54.80% (N=57) respondents conveyed a Negative impact in **Figures 1 and 2**.



**Figure 1:** On a 1-10 sliding scale, where 1 denotes a minimal effect and 10 denotes the maximal effect.



**Figure 2:** Among factors negatively influencing resident morale, fear of loved ones contracting the virus.

**Table 3:** Factors influencing resident morale during the COVID-19 pandemic (respondents selected all that apply; total responses=104).

Factors influencing resident morale during the COVID-19 pandemic (respondents selected all that apply; total responses=104)	No. of Responses	Percentage
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Survey choices (option of multiple selections) (N=104)

Factors negatively influencing resident morale

Among factors negatively influencing resident morale, fear of loved ones contracting the virus, (61.5%; N=64), fear of contracting the virus (51.9%; N=54), Feeling of isolation (39.4%; N=41), financial insecurity (36.5%; N=38), lack of guidance from departmental leadership (22.1%; N=23) and fear of hiring freeze for graduating residents (10.6%; N=11). The most communal factors positively prompting resident morale during the pandemic included support of family, friends or community (73.1%; N=76), internal motivation to lead in difficult times (46.2%; N=48), support and resolve of fellow residents (43.3%; N=45) and support and guidance from your program’s leadership (41.3%; N=43) and lastly efforts at maintaining personal wellbeing (39.4%; 41). Access to mental health resources during the COVID-19 pandemic respondents (49%; N=51) reported some but only limited access followed by Adequate access (31.7%; N=33) and No adequate access at al. (19.2%; N=20). Among the mental and well-being resources available to the residents, virtual/phone based counseling services were the most predominant (Table 3). It was observed that majority respondents (65.4%; N=68) considered the institution adopting to mental health care facilities in the work setting. Also, (57.7%; N=60) reported self-measures taken such as spending time with family and friends, developing new hobbies/interpersonal skills and increased utilization of online academia to combat any mental health issues and even seeking professional help. All these leading to majority of the respondents (96.2; N=100) to agree that institutional support for doctors, in protecting and promoting their mental health in the current and in future pandemics is imperative.

Fear of contracting the virus	54	51.90%
Fear of loved ones contracting the virus	64	61.50%
Feeling of isolation	41	39.40%
Financial insecurity	38	36.50%
Lack of guidance from departmental leadership	23	22.10%
Fear of hiring freeze for graduating residents	11	10.60%
Factors positively influencing resident morale		
Support of family, friends or community	76	73.10%
Support and resolve of fellow residents	45	43.30%
Support and guidance from your program's leadership	43	41.30%
Internal motivation to lead in difficult times	48	46.20%
Efforts at maintaining personal well being	41	39.40%
Access to mental health resources during the COVID-19 pandemic		
Yes, the access is adequate	51	49%
Some, but limited access	33	31.70%
No, access is inadequate	20	19.20%
Should the institution adopt to mental health care facilities in the work setting		
Yes	68	65.40%
No	20	19.20%
Maybe	16	15.40%
Institutional support for doctors, in protecting and promoting their mental health in the current and in future pandemics is important		
Yes	100	96.20%
No	4	3.80%

## DISCUSSION

In this study, we account on the effect of the COVID-19 pandemic on the training encounters and observed the mental well-being of oral medicine and radiology residents across India. During the lockdown period, digital technologies were useful and effective tools that oral medicine practitioners deemed. A cross-sectional observational retrospective research study done to evaluate the impact of the SARS-CoV-2 pandemic induced lockdown and a brief analysis of COVID-19 impact on OPD health service utilization of some important NCD in India showed that the total mean number of dental OPD patients accessing health facilities declined by 69.122% as compared to previous 12 month OPD [6,7]. Our study also revealed decrease in 25-50% of clinical patient interaction, at its lowest when seen by the OPD due to the COVID-19 pandemic. All dental colleges ceased their

conventional classroom learning sessions [8]. Our study showed this shift provided residents with the opportunity to continue to be actively involved. In comparison to other dental specialties, it may have been more feasible for OM to adapt to telehealth [9]. Moreover, patients may still require in-person procedures for definitive diagnosis, including biopsies of oral mucosal conditions. A hybrid model of patient care was adopted and 51.9% did report residents are involved in in-person consultations. In India, most dental colleges use conventional didactic lectures, education needs to be imparted not only through didactic lectures but also by simulation of real-life situations. In terms of the didactic training, 40.4% reported 25%-50% of the didactic training switched to a virtual platform entailing somewhat a positive impact amongst the residents. The aspect of oral medicine and radiology to be most affected by the pandemic has been in the field of clinical research, electronic health records,

thesis submission, patient interaction, etc. with 50% acknowledging slight delays in the research activities. It is evident from the data analysis that complete lockdown in India tends to have a detrimental and deleterious impact on health delivery services and utilization. Two studies found that many forms of distress existed among medical students and that they may significantly impact students' academic and professional lives [10,11]. Similarly our findings unearth that majority of the respondents (96.2; N=100) to agree that institutional support for doctors, in protecting and promoting their mental health in the current and in future pandemics is essential and ought to be inculcated.

## CONCLUSION

This pandemic had constrained access to clinical learning opportunities for students. Modern technology allowed the students to attend lectures safely from their homes, shunning mass gatherings as in colleges and thus aiding in controlling the spread of COVID-19. The profound effects of pandemic can be taken as an opportunity for lasting transformation in dental education and how future dentists are educated in their concerned specialties. As for the specialty of oral medicine and radiology, the pandemic has enabled the residents towards a newer outlook maintaining resiliency amidst the pandemic. It has enhanced the learning skills and most importantly taught to adapting to the changes owing to their mental well-being. After all, the only truly consistent source of stability is the eagerness to change and adapt to everything.

## LIMITATIONS AND FUTURE PROSPECTS

The survey was confined to a national database. Future results would be well-planned, keeping in mind a more comprehensive category of residents of Oral Medicine and Radiology.

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