

| | | |
|---|--|---|
|  <p>ISSN NO. 2320-5407</p> | <p>Journal Homepage: -www.journalijar.com</p> <p>INTERNATIONAL JOURNAL OF ADVANCED RESEARCH (IJAR)</p> <p>Article DOI:10.21474/IJAR01/11828 DOI URL: http://dx.doi.org/10.21474/IJAR01/11828</p> |  <p>INTERNATIONAL JOURNAL OF ADVANCED RESEARCH (IJAR) ISSN 2320-5407 Journal Homepage: http://www.journalijar.com Journal DOI:10.21474/IJAR01</p> |
|---|--|---|

RESEARCH ARTICLE

IMPACT OF COVID-19 ON POST-GRADUATE DENTAL TRAINING PROGRAMME

Ruchika Iyer¹ and Vinod Anju²

1. PG Student, Department of Prosthodontics, Bangalore Institute of Dental Sciences and Research Centre, Bangalore, Karnataka, India.
2. PG Student, Department of Paediatric and Preventive Dentistry, Bangalore Institute of Dental Sciences and Research Centre, Bangalore, Karnataka, India.

Manuscript Info

Manuscript History

Received: 05 August 2020

Final Accepted: 10 September 2020

Published: October 2020

Key words:-

Coronavirus Infection, Dentistry, Residency

Abstract

The Coronavirus pandemic has affected all walks of life in an unprecedented manner and in order to curb the spread of the same the government imposed a stringent lockdown. This led to profound effects on the education and training of medical programmes including dentistry. The study was conducted as a cross sectional online survey circulated among dental post graduate students in Karnataka, India. This study assesses the impact of COVID-19 on the dental post graduate training programme considering various factors like; impact on teaching, training, dissertation, various problems and difficulties faced by the residents and reasons for stress induced among them. It also addresses suggestions which would help in alleviation of the problems. The Government must ensure that the concerned teaching organisations should take the required measures in order to relieve the residents of the various problems faced and provide rational solutions for the same.

Copy Right, IJAR, 2020,. All rights reserved.

Introduction:-

The Coronavirus disease 2019 (COVID-19) was declared as a pandemic on 11th March 2020 by the World Health Organization (WHO)¹. The Government of India announced a nationwide lockdown on March 25th 2020 as an attempt to contain and prevent the pandemic and promoted social distancing and infection control guidelines like use of masks and personal protective equipment (PPE).^{2,3} This stringent lockdown not only disrupted the daily life but also affected the field of dentistry.⁴

Taking into the account the post graduate dental training program; the routine out-patient department (OPD) services and elective procedures were cancelled which in turn reduced the patient influx to the hospitals and institutes. Also, all the academic face to face teaching activities were cancelled and substituted with various online teaching methods. This affected the post graduate teaching and learning programme in an unparalleled manner.⁵

This study aims at evaluating the impact of COVID-19 on postgraduate dental training programme.

Corresponding Author:- Dr. Ruchika Iyer

Address:- No. 5/3, Hosur Main Road, Lakkasandra, Adjacent to NIMHANS Convention Centre, Bengaluru, Karnataka 560027.

Materials and Method:-

The study was conducted as a cross sectional survey amongst the dental residents in the state of Karnataka, India. The recruitment email described the study as follows: "Impact of COVID-19 on the post graduate dental training programme". A web-link to an anonymous web-based survey was included in this email and responding to the survey was considered implicit consent. No follow-up emails were sent. A total of 208 post graduate students participated in the survey (n=208).

The survey was divided into the following 6 parts:

1. Impact on Teaching
2. Difficulties and Problems faced by the post graduate students due to COVID-19
3. Impact on Dissertations
4. Impact on PG Training
5. Suggestions for Alleviation of Problems faced
6. Stress induced and reasons for the same

A pilot study was conducted before finalising the study with 25 participants to vindicate the study. The data recorded was downloaded and entered in excel spread sheet and analysed by statistical software (SPSS 12.0 for Windows, SPSSInc., Chicago, USA) for descriptive statistics.

Results:-

Table 1 shows the year of post-graduation of the participant. Table 2 and 3 shows the impact of COVID-19 on teaching and the satisfaction of the PG students with the current teaching methods. Table 4 and 5 addresses the problems and difficulties faced by the students due to the COVID-19 pandemic, respectively. Table 6 represents the impact of COVID-19 on the dissertation. Table 7 illustrates how the pandemic impacted the PG training. The survey also took into consideration various suggestions for alleviation of the problems faced by the students (Table 8). Table 9 addresses the factors which induced stress amongst the students due to the pandemic.

Table 1:- Year of Post-Graduation.

| | Frequency | Percentage |
|----------------------|-----------|------------|
| 1 st Year | 9 | 0.04% |
| 2 nd Year | 56 | 26.9% |
| 3 rd Year | 143 | 68.75% |

Table 2:- Number of Seminars.

| | Pre-COVID | | During COVID | |
|----------------|-----------|------------|--------------|------------|
| | Frequency | Percentage | Frequency | Percentage |
| Daily | 39 | 18.7 | 44 | 21.1 |
| One per week | 63 | 30.2 | 75 | 36.0 |
| Two per week | 49 | 23.5 | 43 | 20.6 |
| Three per week | 57 | 27.4 | 46 | 22.1 |

Table 3:- Satisfaction with Classes.

| | Frequency | Percentage |
|---------------|-----------|------------|
| Satisfied | 14 | 6.7% |
| Neutral | 148 | 71.1% |
| Not Satisfied | 46 | 22.1% |

Table 4:- Problems Faced by the PG Students.

| | Frequency | Percentage |
|---|-----------|------------|
| Decreased Out Patient Department(OPD) | 169 | 81% |
| Decreased Follow Up Cases | 155 | 74.5% |
| Decreased New Recruitment of Cases | 157 | 75.4% |
| Follow up Patients do not have smart phones for teledentistry | 66 | 31% |
| Not physically seeing and examining patients | 155 | 74.5% |

| | | |
|--|-----|-------|
| No regular contact and learning from seniors | 119 | 57.2% |
| No group study sessions | 83 | 39.9% |
| No inter department meetings | 111 | 53.3% |
| Others | 29 | 13.9% |

Table 5:- Difficulties Faced by the PG Students.

| | Frequency | Percentage |
|-----------------------------|-----------|------------|
| Decreased Clinical Exposure | 194 | 93.2% |
| Changes in Working Schedule | 130 | 62.5% |
| Decreased Teaching Time | 91 | 43.7% |

Table 6:- Problems Faced by PG Students in Dissertations.

| | Frequency | Percentage |
|--|-----------|------------|
| No Problem with Thesis | 30 | 14.4% |
| Difficulty in access to infrastructure and resources | 127 | 61.0% |
| Limited functioning of dental hospitals | 138 | 66.3% |
| Decrease in number of OPD | 149 | 71.6% |
| Decrease in recruiting new cases | 132 | 63.4% |
| Decrease in Number of follow ups | 131 | 62.9% |
| Others | 58 | 27.8% |

Table 7:- Impact of COVID-19 on PG Training.

| | Frequency | Percentage |
|--|-----------|------------|
| Decreased clinical skill | 180 | 86.5% |
| Apprehension regarding passing clinical examination | 136 | 65.3% |
| Feeling of incompetency to work independently after completion of PG | 138 | 66.3% |

Table 8:- Suggestions for Alleviation of Problems Faced.

| | Frequency | Percentage |
|---|-----------|------------|
| Modify rules of training | 128 | 61.5% |
| More virtual workshops for clinical skills | 121 | 58.1% |
| Virtual conferences /Conventions | 105 | 50.4% |
| Change of dissertation topic from in vitro studies as against in vivo/ex vivo studies | 93 | 44.7% |
| Relaxation in sample size and duration of study | 121 | 58.1% |
| Extension for completion from university | 124 | 59.6% |
| Modification of rules from DCI | 146 | 70.1% |
| Modify rules for PG exit exam | 140 | 67.3% |

Table 9:- Reasons for Stress among PG students during COVID-19.

| | Frequency | Percentage |
|---|-----------|------------|
| Do not feel stressed | 14 | 6.7% |
| Decreased confidence in diagnosis, examination, and clinical skills | 105 | 50.4% |
| Inability to provide evidence based treatment | 98 | 47.11% |
| Uncertainty about professional life | 141 | 67.7% |
| Spread of infection | 146 | 70.1% |
| Fear of contracting COVID-19 | 131 | 62.9% |
| Away from family | 86 | 41.3% |
| Delay for submission of dissertation | 120 | 57.6% |
| Delay of PG exit exam | 100 | 48.0% |

Discussion:-

Postgraduation (PG) courses in dentistry hone the professionals to provide high quality and specialized health care services. COVID-19 has caused unprecedented changes to the postgraduate training academically as well as clinically. The dental residents are unquestionably facing both daily challenges to personal health and long-term questions about their training experience.⁶ The current survey evaluated the impact of the pandemic on the postgraduation training, the problems and difficulties faced by the residents and addressed suggestions for the alleviation of the said issues.

Majority of the respondents were in their third (final) year of postgraduation followed by 2nd year residents (Table 1). This could be attributed to the timing of the study as the fresh batch of residents had not joined the courses. As an impact of COVID-19, all the in-person classes have been cancelled in teaching hospitals and institutions to curb the spread of infection³. Instead virtual classes have been practised by all the institutions and the number of seminars and journal clubs presented has not significantly changed from before to during the pandemic (Table 2). However, only 6.7% of the respondents were very satisfied with the virtual classes (Table 3).

When asked regarding the problems faced (Table 4), majority of the residents responded as decreased OPD (81%), followed by decreased new recruitment of cases (75.4%) and decreased follow up cases (74.5%). This could be due to the nationwide lockdown in India, the lockdowns in 'hotspot' areas and the fact that lesser number of patients are reporting to the hospitals due to apprehension regarding the spread of infection. Teledentistry, as recommended by the Centres for Disease Control (CDC) has been hindering the learning experience for the residents due to the inability to examine patients physically and lack of face to face interactions (74.5%). Moreover, the respondents expressed the difficulty in reaching patients who do not own smart phones (31%). Routine OPD has been reduced and elective procedures have been suspended in almost all the institutions and teaching hospitals.⁷ Social distancing norms have prevented group studies and discussions among postgraduate students (PGs). In addition to this the PG curriculum requires the postgraduates to attend national conferences, conventions, workshops and continued dental education (CDE) programs during their tenure. The residents expressed that even though online conferences are held there were no hands-on courses and workshops to boost and sharpen their clinical skills. Virtual meetings do not replicate face-to-face interaction and thus, PG students lose their opportunity to network with experts in these meetings.⁵

The survey also addressed the difficulties faced by the residents (Table 5). A greater part of residents responded decreased clinical exposure (93.2%) as the major difficulty faced, which could be attributed to the reduced patient inflow. The other snag faced was change in the working schedule (62.5%) as interim changes were made in the operatory to reduce the aerosol production and exposure in accordance to CDC guidelines.⁸ If this paradigm shift continues for too long, the residents may lose skills in managing a broad range of oral pathologies.⁹ The reduced patient load has affected the demonstration of many clinical skills in all specialisations as reflected in this survey. This could be combatted with the use of card cases, simulation of the cases for clinical discussions and demonstration of procedures on extracted teeth and typhodonts. The faculty members can use instructional videos to teach PG students and discuss with them online.¹⁰ The reduced clinical practise during residency has led to a feeling of incompetency to work independently after completion of the postgraduation (66.3%). Furthermore, the apprehension regarding passing their PG clinical exit exam is one of the major reasons for stress amongst the residents who partook in the study (66.5%).

Another reason for angst amidst the residents was the submission of dissertation, which is critical to clearing the degree examination. Depending on the type of the study the problems faced by the residents varied. The residents whose dissertations were in vitro or questionnaire studies expressed that they had no problem (14.4%) or that the problem they encountered was that they couldn't access the infrastructure and resources (61.0%) due to the limited functioning of the colleges and hospitals (66.3%). The most affected residents were the ones whose studies were in-vivo, ex-vivo and randomised controlled trials; they expressed apprehension due to decreased OPD (71.6%), lesser number of new cases (63.4%) and the significant reduction in the follow up cases (62.9%). Patients who are the part of their clinical studies have not been able to come to the hospital for follow up because of lockdown, travel restrictions, migration to home states from big cities and fear of contracting COVID-19.⁵ This has caused great inconvenience for the PG students and faculty members. (Table 6)

All dental postgraduation courses are of fixed tenure of three years in India, the pandemic has resulted in loss of precious time due to lockdown restrictions and interim protocols advised by Dental Council of India (DCI). As a

result, it is anticipated that these residents may graduate and become specialist/consultant without achieving proficiency in essential procedures. Similar finding has been brought out during the survey where 66.3% participants do not feel competent enough to work independently after residency.

The survey asked regarding the possible suggestions and recommendations to counter the issues (Table 8), majority of them responded as need for modification of the rules by DCI to appear for the clearing exams (70.1%) like reduction of the quota of cases to be done, increasing the tenure of the course to compensate for the lost time and increasing virtual and simulatory workshops. A major part of the participants responded that it would be better if the rules for PG exit exam could be altered (67.3%) like for example exit exams can be conducted as objective structured clinical exam (OSCE). The respondents felt that the Universities should give them waiver with respect to the dissertation in terms of changing the follow up and in- vivo studies to more feasible studies (44.7%). Furthermore, the Universities can accept the students' request for reducing the sample size and duration of study (58.1%).

The COVID-19 pandemic has resulted in extreme stress and anxiety among the residents both personally and professionally (Table 9). The residents were stressed regarding the spread of infection (70.1%) as all dentists work in close proximity with the patients and there is extensive aerosol production in almost all the procedures in dentistry. Another reason of stress especially among the final year residents was the submission of dissertation as they have lost considerable amount of time due to the pandemic (57.6%). The reduced clinical time, in flow of patients and in person examination of patients has resulted in a feeling of ineptitude, decreased confidence in diagnosis, examination and clinical skills (50.4%) and inability to provide evidence-based treatment (47.11%). All these factors have resulted in profound uncertainty about their professional life (67.7%).

Apart from the discussed suggestions another issue that needs to be addressed is the enormous number of webinars conducted. The DCI in association with the departmental societies must take regulatory measures to ensure the quality of the webinars. Moreover, the higher teaching bodies must conduct more clinical oriented programmes which would benefit the students in their tenure.

Limitations of the study was that the survey was open for all postgraduates but the first-year students had not joined the courses at the time of the study hence the maximum number of students who responded were in third and second year of residency, which could be a possible source of bias. As we have not asked the name of institutes from participants, there may be a possibility that many PG students from a single dental college/hospital have responded. Lastly COVID 19 has undoubtedly created unique difficulties for all thus varying moods and circumstances may lead to variability in survey participation and may also affect responses.

Conclusion:-

COVID-19 has caused unprecedented impact on the education and training of postgraduates in all the branches of dentistry. There is significant reduction in the clinical training due to the reduced inflow of the patients and lesser attendance in the OPDs. The residents are also facing problems in completion of their dissertations. In addition, the PGs have increased stress due to the uncertainty and the lack of confidence to practise independently after residency. These problems need to be acknowledged by the councils and the teaching bodies and necessary steps need to be implemented to help the residents in their tenure.

References:-

1. World Health Organisation. Coronavirus disease (COVID-19) pandemic. accessed on <https://www.who.int/emergencies/diseases/novel-coronavirus-2019>. Accessed June 15, 2020.
2. COVID-19 India. accessed on <https://www.mohfw.gov.in>. Accessed June 15, 2020.
3. Ministry of Health and Family Welfare. Government of India (MOHFW) eSanjeevani- an integrated telemedicine solution. <https://esanjeevani.in/>
4. Ghani F. Covid-19 Outbreak – Immediate and long-term impacts on the dental profession. Pak J Med Sci. 2020 May;36(COVID19-S4):S126-S129.
5. Upadhyaya GK , Jain VK, Iyengar KP, Patralekh MK , Vaish A. Impact of COVID-19 on post-graduate orthopaedic training in Delhi-NCR J ClinOrthop Trauma. 2020 Jul 25.

6. An TW, Henry JK, Igboechi O, et al. How are orthopaedic surgery residencies responding to the COVID-19 pandemic? An assessment of resident experiences in cities of major virus outbreak. *J Am AcadOrthop Surg.*2020 Aug 1;28(15):e679-e685.
7. Circulars for COVID-19/ministry of home affairs/GOI. Available at: <https://www.mha.gov.in/notifications/circulars-covid-19>. Accessed August 7, 2020
8. Interim Infection Prevention and Control Guidance for Dental Settings During the Coronavirus Disease 2019 (COVID-19) Pandemic. CDC; updated on 28th august 2020. Available on <https://www.cdc.gov/coronavirus/2019-ncov/hcp/dental-settings.html>
9. Edigin E, Eseaton PO, Shaka H, Ojemolon PE, Asemota IR, Akuna E. Impact of COVID-19 pandemic on medical postgraduate training in the United States.*Med Educ Online.*2020;25(1):1774318.
10. Iyengar KP, Jain VK, Vaish A, Vaishya R, Maini L, Lal H. Post COVID-19: planning strategies to resume orthopaedic surgery -challenges and considerations. *J ClinOrthop Trauma.* 2020 May;11(Suppl 3):S291-S295.