

An Assessment of Common Problems of Post Graduate Students Pursuing Post-Graduation In Orthodontics and Dentofacial Orthopedics, due to COVID 19 Lockdown

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Abstract

Objective: To assess the common concerns of FCPS and MDS trainees in Orthodontics due to COVID-19 lockdown.

Methods: This cross-sectional study was conducted in different institutes of Sindh which offered FCPS/MDS training in Orthodontics. The study was carried out after approval from the ethical committee. A questionnaire was designed comprising of 15 questions. Each question aiming to assess the difficulties faced by trainees due to the imposition of lockdown. The questionnaire was distributed amongst 80 participants/trainees in the training year 2 to 4.

Results: The average age of study participants was 29 years with range of 27 to 38 years. In this study a large number of subjects said that they were unsure regarding completion of cases due to lockdown i.e; n=63,(77.8%). Approximately half of the study subjects thought that there will be massive patient burden after resuming to the normal practice i.e 40(49.4%). Nearly quarter of them were puzzled that due to lockdown it was difficult to focus on thesis and research work i.e 18(22.2%). Few of them also responded that after resuming to the normal practice there would be pressure from superior authorities for academic works i.e; n=9,(11.1%).

Conclusion: This study analyzed those major concerns were non-availability of basic materials for procedures, fear of completion of cases due to lockdown and massive patient burden in clinics after uplifting of lockdown. Therefore, Covid-19 lockdown has in many ways affected the academic and clinical activities of the post-graduate students. The uncertainty to tackle this surprise situation is still an unanswered question.

Keywords: Questionnaire, COVID-19, FCPS and MDS students

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Introduction

COVID-19 pandemic is an ongoing viral flu which has affected many parts of the world. It is also termed as Corona virus pandemic. It first emerged as a disease in the Wuhan province of China in December 2019¹. The SARS-CoV-2, which was also named Novel Corona Virus or COVID-19

by the World Health Organization (WHO) is a beta-corona virus. The representation of this virus can be done by two types of corona viruses which infect the respiratory tract, SARS-CoV and MERS-CoV². It mostly affects the upper and lower respiratory tract, in some cases also a diffused type of infection is seen³.

The COVID 19 virus is highly contagious and able to cause severe respiratory tract infections. It has many modes of transmission, it can be transmitted from one person to another, from aerosols in sneezing, saliva, surfaces exposed to virus after being touched by infected person, or close contact while talking to an infected person⁴. This disease till

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date has affected most of the parts of the world. According to United Nations Development Programme (UNDP), COVID-19 was considered as more dangerous than the global health crisis in the present time and the biggest challenge that world faced after World War II. On January 30th 2020, a world-famous health organization, WHO announced COVID as an international emergency. Especially for the countries which had overall poor health setups and vulnerable immunities⁵. Because of its fast transmission, COVID-19 disease raised public health concerns as global community came into its grip with in a span of few weeks since its first transmission in China. Over the months, this pandemic has affected human lives badly and has put a halt to most of the daily life activities, many private and public sector businesses have been affected badly, course curriculum of students, delay in exams etc. These are some of the effects posed by this pandemic throughout the world⁶.

Most of the dental services can only be performed with close contact with patients. Further, it is not possible for patients to wear face mask during the procedures and the responsibility of protection solely depends on dental practitioners. Moreover, as per the caution note of Occupational Safety and Health Administration (OSHA) regarding health worker exposure to COVID-19, dental practitioners are observed to fall in higher risk category for acquiring nosocomial infections during COVID-19 era and highly likely to become virus carriers because of daily aerosol producing dental procedures. Hence, amongst all the sector involved medicine was mostly affected by this pandemic specially dentistry because dentists are the ones which are exposed to aerosol infections most frequently and amongst dentist the students pursuing post-graduation in orthodontics are the ones effected the most because this practice requires monthly follow-ups⁷.

Much of the dental and Orthodontic schools remained closed during this pandemic⁸. There is also a state of worry amongst orthodontist regarding the interest of patients to continue their treatment because the relapse may or may not have c-

hanged their interest in continuing the procedure^{9,10}.

Recommencing routine clinical practice at dental clinics following the lockdown period post COVID-19 is a great challenge from an administrative perspective. It is essential to work on the supposition that the pandemic will not be fully resolved and there may be a possibility of a second wave. In fact, going back to the pre-COVID-19 era will take long time unless an effective and harmless vaccine is developed and dispersed across the globe. Many such questions will remain unanswered until properly addressed; hence this study is aimed and focused on understanding the problems faced by the trainees or postgraduate students and their possible solutions. The ultimate objective to assess the common concerns of FCPS and M.D.S trainees in Orthodontics due to COVID-19 lockdown to assess their attitude towards resuming back to the work environment, to assess their worry and concern about their ongoing orthodontic cases in college. The study also aims to compare attitudes and concerns between males and females FCPS and MDS trainees

Subjects and Methods

The basic design of this study is cross-sectional and this study is aimed to assess the common concerns of FCPS and MDS trainees in Orthodontics because of COVID lockdown to assess their attitude towards resuming back to the work environment and to assess their worries and concerns about their training, tasks related to training and their Orthodontic cases in college which have not been attended since a while. This study was conducted over a period of 3 months from February to April 2021. A printed questionnaire was distributed in different institutes of Sindh, which offered FCPS/MDS training in orthodontics, The study was carried out after approval from the ethical committee. Inclusion criteria for this study is postgraduate trainees in the year 2 to 4 and exclusion criteria includes trainees who have completed their post graduate requirements and trainees belonging to other specialities. The sample

size of the study was calculated using the Open Epi, software and taking statistics after evaluating the number of postgraduate trainees. The confidence limit was 95% and absolute precision was 10%, the sample size was 80 and the sampling technique used was non-probability consecutive sampling technique. The printed questionnaire was designed to address or assess the common problems of postgraduate FCPS and MDS trainees in the speciality of Orthodontics and Dentofacial Orthopedics, due to lockdown imposed in COVID 19 pandemic. A precise synopsis was designed and was sent to the Institute Review Board (IRB#: JSMU/IRB/2020/391) along with questionnaire for approval, and after the approval from the Review Board questionnaire was circulated among the postgraduate FCPS and MDS trainees of different institutes. The questionnaire comprised of 15 questions each addressing the possible problems faced by the trainees due to lockdown, a written consent was also signed by the trainees.

Data was analyzed using SPSS version 21. Categorical variables were expressed as frequency and percentages. Numerical variables summarized as median and range after assessing assumption of normality with Shapiro Wilk test. Chi square test was applied to determine the differences in responses on the basis of gender. A two tailed p-value less than 0.05 was taken as statistically significant i.e; ($p < 0.05$).

Results

The average age of the recruited participants was 29 years with a range of 27 - 38 years. Most of the participants had an age range of less than 30 years i.e; 62 (76.5%). More than half of the participants were females i.e; 51 (63%), enrolled in FCPS training were (88.9%), belonged to public sector institutes, were 61(75.3%).

The majority of the respondents reported that there was the availability of basic materials for procedures i.e;65 (80.2%). On inquiring regarding when trainees attended the patients last time, about half of them responded they attended a patient three months ago i.e; 42 (51.9%). Nearly a

quarter of the participants reported that they attended a patient 2 months ago i.e; 22(27.2%) and a few of them also reported that they attended a month ago i.e;4 (4.9%) and 4 months ago i.e;4 (4.9%).

The majority of the respondents said that they were unsure regarding the completion of cases due to lockdown i.e;63 (77.8%). Approximately half of the study subjects thought that there will be a massive patient burden after resuming the normal practice i.e;40 (49.4%). Nearly a quarter of them were puzzled that due to lockdown it was difficult to focus on their thesis and research work i.e;18 (22.2%). Few of them also responded that after resuming the normal practice there would be pressure from supervisors for academic work i.e;9 (11.1%) and there will be a lot of seminars and presentations from the aspect of management of COVID-19 i.e;9(11.1). When participants were asked to rate their fear on a scale of 1 to 10 of performing duties during the pandemic, 50 (61.7%) rated their fear of 5 or more points whereas the median fear point was 7 with a range of 3 to 9.

About all of the participants had fear of contracting COVID-19 infection i.e; 77 (95.1%). Nearly three-fourths of participants felt that their training had been compromised due to imposing strict lockdown i.e;62 (76.5%). In view of 67 (82.7%) respondents, their academic had also been affected due to longer stay at home. Only a quarter of the students considered online education as a good substitute for regular face-to-face classes i.e;21 (25.9%). Participants were also asked to rate on a scale of 1 to 10 how they were worried for not attending regular patients. 59 (72.8%) rated 5 or more points with a median rating of 6 of range 2 to 10.

About half of the participants had fear that their patients will not show up for follow-up due to lockdown and will not be visiting for the remaining treatment as 24 (29.6%) agreed and 21 (25.9%) strongly agreed to this statement while about half of them disagreed to this statement i.e;36(44.4%). 53 (67.4%) reported that due to lockdown the rem-

aining time available to complete dissertation work is insufficient. When asked about the lack in surgical expertise and handling of the procedure due to long break, 41 (50.6%) disagreed and 4 (4.9%) strongly disagreed to the statement whereas 30 (37%) agreed and 6 (7.4%) strongly agreed for this question.

Participants' characteristics and responses to survey questions were compared among males and females but none of the participants' characteristics and survey question was significantly different on the basis of gender.

Table 1. Distribution of participants' characteristics and survey responses among males and females

Study variables	Groups	Gender		p-value
		Female	Male	
Age	<30 years	39(76.5)	23(76.7)	0.984
	≥30 years	12(23.5)	7(23.3)	
Training type	FCPS	48(94.1)	24(80)	0.070
	MDS	3(5.9)	6(20)	
Working sector	public	39(76.5)	22(73.3)	0.752
	private	12(23.5)	8(26.7)	
Basic material available for procedures public & private sector	yes	41(80.4)	24(80)	0.966
	no	10(19.6)	6(20)	
	post COVID			
Last time attended you attended a patient expect emergency	less than one month	2(3.9)	2(6.7)	0.180
	1 months	4(7.8)	5(16.7)	
	2 months	18(35.3)	4(13.3)	
	3 months	25(49)	17(56.7)	
	4 months	2(3.9)	2(6.7)	
Doubtful regarding completion of cases due to this lockdown	yes	40(78.4)	23(76.7)	0.854
	no	11(21.6)	7(23.3)	
Rate how worried are you regarding performing duties in pandemic	<5	19(37.3)	12(40)	0.806
	≥5	32(62.7)	18(60)	

Aspect after practice resuming the work to normal practice	patient workload	22(43.1)	18(60)	0.248
	seminar & presentation	7(13.7)	2(6.7)	
	thesis & research	14(27.5)	4(13.3)	
	staying away from home again	4(7.8)	1(3.3)	
	pressure by the supervisor authorities	4(7.8)	5(16.7)	

Worried about the contracting the COVID-19 virus during day-to-day OPD practice	yes	48(94.1)	29(96.7)	1.00
	no	3(5.9)	1(3.3)	

Do you feel training is compromised due to lockdown?	yes	39(76.5)	23(76.7)	0.984
	no	12(23.5)	7(23.3)	

Staying home due to COVID-19 pandemic has affected your academics	yes	42(82.4)	25(83.3)	0.910
	no	9(17.6)	5(16.7)	

Online education is good substitute to regular education system before pandemic?	yes	15(29.4)	6(20)	0.351
	no	36(70.6)	24(80)	

Rate on a scale of 1-10 how worried are you for attending your running cases (regarding loss of follow-up patients)	<5	14(27.5)	8(26.7)	0.939
	≥5	37(72.5)	22(73.3)	

Do you feel your patient which you selected for your exam will not show up for the remainder of the treatment?	strongly disagree	0(0)	0(0)	0.436
	disagree	25(49)	11(36.7)	
	agree	15(29.4)	9(30)	
	strongly agree	11(21.6)	10(33.3)	

Do you feel that there will be a lot of pressure on you by patents department and authorities?	strongly disagree	3(5.9)	3(10)	0.877
	disagree	24(47.1)	12(40)	
	agree	22(43.1)	14(46.7)	
	strongly agree	2(3.9)	1(3.3)	

Remaining time of your training program is insufficient to complete your dissertation work?	yes	32(62.7)	21(70)	0.507
	no	19(37.3)	9(30)	

Do you feel this lockdown has made you under confident as you have lost touch of dealing with the patients?	strongly disagree	1(2)	3(10)	0.364
	disagree	27(52.9)	14(46.7)	
	agree	20(39.2)	10(33.3)	
	strongly agree	3(5.9)	3(10)	

Fisher-exact test was reported

Discussion

COVID-19 is the third major infectious communicable disease outbreak since the beginning of the century. Since the virus causes respiratory infections and also transmits through saliva and nasal droplets in the form of sneezing and coughing, therefore, dental professionals are in big trouble for meeting the new surge of appropriate demands and remain at high risk of becoming virus carriers due to their nature of work. The fear of acquiring the virus and limiting the teaching activities in the classroom and clinics is making this group of health workers a little anxious, particularly students who are in their learning phases and the COVID-19 situation is affecting routine activities due to which they are not able to learn new skills more confidently. Preparation of the “new normal” requires the procurement of particular apparatus, which are not generally available in dental clinics like pulse oximeter, N95 mask, and face shields. Obtaining these types of equipment from the present market may signify a challenge due to the raised requests. When introducing the “new normal” at dental training and practice and training institutes, all students and staff would be expected to follow the new rules and guidelines. These rules include sufficient social distancing, lesser gatherings in buildings, in clinical and educational settings. All of these situations have put post-graduate trainees in a situation in which there is suspense regarding the completion of their degrees and remaining work necessary for the completion of their program and the work assigned to them by the institute^{11,12}. Many dental schools are also short of manpower for teaching as the teaching staff is not available¹³.

Related to resuming of work after COVID-19 lockdown also demands the health care workers to abide by new international guidelines of social distancing while not compromising the patient care which is quite challenging not only for dental even for every clinical specialty. However, it is thought to be more difficult in the domain of dentistry as the close contact with patients is mandatory for their clinical assessments and to carryout the dental pr-

ocedures. A similar study was conducted by Rodrigues Lishoy for Indian postgraduate trainees¹⁴, but there is a definitive difference in the training setups between Indian and Pakistani population and also the criteria for selection of the trainees, years of training and level of practice. Every aspect in both populations is somewhat different hence there is a possibility that there might be a difference between concerns and worries amongst the trainees. In short, many such studies are available but few were conducted in Pakistan and there could be variation among attitude and concerns of students from region to region. Therefore, the present study was planned to ascertain the COVID-19 related problems among dental students in our local settings.

In the present study, the average age of the participants came out to be 29 years with ages ranging from 27 to 38 years and more than 70% of the students aged less than 30 while in the previous study which was conducted by Rodrigues Lishoy the age range was 25 to 35 years and the average age of 30 years, that clearly states that the average age of trainees differs between the countries¹⁴. In this study, nearly a quarter i.e; 22 (27.2%) of the participants reported that they attended a patient 2 months ago and a few of them also reported that they attended a patient a month ago i.e; 4 (4.9%) and 4 months ago i.e; 4 (4.9%). This long gap between appointments is seen because of the strict guidelines discussed by Sunjay Suri, where he discusses the implementation of clinical guidelines by many institutes. He suggests that an orthodontist should try to cater to Orthodontic emergencies via a phone and if possible, should try to guide the patient over a phone call to explain to the patient how to tackle small emergencies at home. However, in case of more than one patient appointments should be staggered as much as possible¹⁵.

It seems that the main source of infection transmission in dental clinics is bioaerosol. Additional contamination causes include work surfaces and infected tools. Contamination of surroundings and environment in this way makes

dental, a highly vulnerable group due to which fear among dental regarding resuming duties after lockdown exists. This study indicates that almost all of the participants of this survey had a fear of contracting the COVID-19 virus i.e; 77(95.1%). Similarly, in another study conducted by V.B.P Suryakumari the percentage of dentists worried about carrying the infection from their respective practices to their families was a high number of (93.81%) and (68.40%) wanted to shut their respective practices until the decrease in COVID-19 cases due to this fear¹⁶. Further, it is evident in the literature that there is a frequent lack of compliance to standard safety precautions in the pre-COVID-19 era which is a great obstacle to overcome during COVID-19 and post-COVID-19 era. Commonly dental handpieces, dental chairs, dental burs and hand mirrors are not sterilized. Therefore, it is a great challenge for maintaining a highly sterilized environment in post-COVID-19.

There is some legislation regarding Orthodontic emergencies. These emergencies have limited the span of daily practice to very few procedures¹⁷. Moreover, many studies have confirmed the spread of this condition within dental schools. Meng et al conducted a study reporting 9 detected cases of COVID-19 amongst the members of the dental unit at the dental school and Hospital of Stomatology, Wuhan University¹⁸. Due to this pandemic, the academic situation of the institution has been damaged and administration, teaching staff and students are putting up all their effort into implementing the use of available technology to somehow line up the academic activities¹⁹. Academic dental schools are considered modest and demanding learning centres for dental students. Though there have been many magnificent advances in teaching methods during the recent years in the higher education sector, the COVID-19 pandemic emphasized the basic difference between dental and medical schools in the methods of instruction and the practical and clinical educational routine activities. Post-graduate trainees shifted from normal face to face learning to e-learning or distant learning which includes zoom, Google classroom etc., which though prevented the

spread of infection²⁰. Many universities and training institutes across the world have considered this method effective and have started practicing this method of e-learning, this method is being widely admired by learners^{21,22}. This method despite being effective has questionable outcomes and whether it is a successful learning method or not, dentists are quite doubtful. However, it cannot be denied that clinical and moralistic skills are two unlike outcomes of education. None of the virtual sessions can be replaced with physical experience with the patients.

During dental schooling, students have a two-year course work which does not require clinical exposure whereas the last two years course has been designed to gain clinical exposure as well to develop the required competence level upon their completion of graduation degree. Practical teaching in dental clinics at the chairside is much more difficult than theoretical course work, as the treating dentist is responsible for appropriately managing the oral health of the patients. Simply, dental students are practically taught about the right timing of the required interventions and ultimately gain positive outcomes for their patients. Due to the emergence of COVID-19 in person teaching sessions in clinics and classes in college were stopped and shifted to distant online learning systems. However, in-person teaching sessions in wards and clinics are irreplaceable with online learning as it limits the real-time visualization of patients, interaction and feedback. The survey results also reveal the attitude of residents towards the current e-learning method used for distant learning, this method was adopted very late in Pakistan, despite its appreciation in different parts of the world. The survey shows that only a quarter of the students considered e-learning as a good replacement for the regular face to the face education system i.e; 21(25.9%). In a similar study conducted by Aiza Anwar, it was established that 28.6% of the participants disagreed that the slides incorporated in e-learning were not clear. While the same study reported that 27.6% disagreed with the fact that they could understand the lectures better via e-learning while 30% agreed²³. Another study

conducted by Lisa.R. reported that 44.2% of students preferred distant learning over classroom learning which compared to this survey is a higher ratio overall²⁴. However, another Pakistani survey among dental students demonstrated that more than half of the students had a negative response regarding improvement in clinical skills in online classes²⁵.

This study in short has addressed many aspects regarding the worries, concerns and attitude of trainees towards this lockdown, but these worries can be managed with effort of the trainees, administration and the governing bodies. However, the study was conducted in a single center institute which limits the generalizability of results.

Conclusion

This study analyzed that major concerns were non-availability of basic procedural materials, fear of completion of cases due to lockdown and massive patient burden in clinics after uplifting of lockdown. Therefore, the COVID-19 lockdown has in many ways affected the academic and clinical activities of the post-graduate students. The uncertainty to tackle this surprise situation is still an unanswered question.

Conflict of Interests

Authors have no conflict of interests and received no grant/funding from any organization.

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