

Effects of COVID-19 Lockdown on Clinical Practice among Undergraduate Dental Students in Tamil Nadu- A Survey

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ABSTRACT

Introduction: The Coronavirus Disease-2019 (COVID-19) pandemic had not only developed as a key challenge to public health all around the world but also instigated physical and mental constraints on the healthcare professionals especially on the education of dental students with the sudden switch from traditional teaching methods to e-learning platforms thereby shutting all means of clinical experiences.

Aim: To assess the effects of lockdown on clinical practice among undergraduate dental students in Tamil Nadu, India.

Materials and Methods: A cross-sectional observational study was done among undergraduate dental students in Tamil Nadu, India, from June 1, 2021 to July 1, 2021, using convenience sampling method to yield a total of 510 responses for a self-administered online questionnaire that aimed at evaluating the consequence of lockdown on clinical practice. Statistical Package for the Social Sciences (SPSS) version 19.0 was used to analyse the data.

Results: A total of 510 responses (mean age: 21.72±2.2827 years; 323 female and 187 male) were analysed in the present

study. Majority of the students felt that COVID-19 lockdown had a negative impact on clinical exposure. In spite of following infection control measures, only 35.1% of students felt imperative to practice during pandemic. With over 82.7% of patient flow reduced due to fear of disease spread. 85.1% revealed being stressed in completing clinical quota in a short duration. Further questions on prospects in improvising their clinical knowledge; showed 45% recommending e-workshops, 29.4% opting for video demonstration followed by 22.2% on exposure to Objective Structured Clinical Examination (OSCE) to compensate for the loss of clinical practice.

Conclusion: New teaching protocols have to be adopted taking into account the changing aspects of the pandemic to improve their wellbeing, overcome mental stress and to enhance the sustainability of dental education. Focus on video demonstrations, lectures provoking their clinical reasoning, simulations on phantom heads and conducting workshops enhancing preclinical skills as well as following appropriate safety protocols must be implemented.

Keywords: Coronavirus disease-2019, Dentists, Education, Infection control, Online system, Pandemic

INTRODUCTION

Novel Coronavirus disease (COVID-19) is a highly contagious viral infection caused by Severe Acute Respiratory Syndrome-Coronavirus-2 (SARS-CoV-2) first observed at Wuhan City, China in December 2019 that caused significant economic and social breakdown across the world [1]. Later, World Health Organisation (WHO) declared COVID-19 outbreak a global pandemic threat that can seriously increase morbidity and mortality over a wide geographic area on 11th March 2020 [2]. It was recognised that this highly infective virus spreads through direct and indirect modes such as respiratory droplets, nasal droplets, direct contact of surfaces or indirect contact (fomites) or even through saliva [3].

Among various healthcare professionals, it is evident that dentists are at a higher risk of acquiring and spreading the disease due to close exposure to aerosols and infected droplets from patient's oral cavity [4,5]. The swift spread of the COVID-19 pandemic disease forced several countries to impose overnight restrictions, lockdowns, curfews; home isolation measures and protocols, social distancing norms, closure of schools, universities and shifts in the existing educational system to e-learning and distance learning systems [6]. Hattar S et al., reinforces that the sudden shift from traditional methods of teaching to e-learning and distant learning has created a greater challenge among the dental students especially at the undergraduate level [7]. Although new technologies with simulation and virtual reality techniques are gaining more interest, still the direct in person experience is one that cannot be simply replaced by virtual teaching platforms [7]. Consequently, COVID-19 outbreak has negatively impacted the activity of dental professional as well as

dental educational institutions on a larger scale and several routine dental clinical practice have been suspended owing to the risk of cross-infection during dental treatment [8].

Valekar SS et al., had shown that undergraduate dental students constantly undergo academic and professional stress such as fear of inability to understand the desired knowledge in due time, fear of infection, burden of increased content of curriculum, clinical anxiety, fear of making poor choice of profession, lack of professional growth, fear of helplessness to be paid [9]. Subsequently, Loch C et al., stated that undergraduate students also fears that online e-learning platforms along with closure of dental practices would cause extreme impacts on all these factors and impair their clinical competence due to pandemic [10].

Several studies have been published in the recent years eliciting the psychological status of students during pandemic but this study illustrates the struggles faced by students during clinical practice resuming after attending e-teaching modes for months with loss of clinical exposure due to lockdown [8-10]. The present study aimed at assessing the effects of lockdown on clinical practice among undergraduate dental students in Tamil Nadu and the ability to apply the theoretical knowledge gained in online platform while dealing with patients.

MATERIALS AND METHODS

The present cross-sectional observational study was done among undergraduate dental students in Tamil Nadu from June 1, 2021 to July 1, 2021. This study utilised non probability convenience sampling method that yielded information from 510 individuals. All

the respondents provided informed consent, and the data were collected anonymously. Ethical clearance for the study was obtained from the Institutional Review Board at Dr.M.G.R. Educational and Research Institute, Chennai, (certificate no. Dr.MGRERI/TMDCH/EC/2020-21/009 dated 22/04/2021) prior to the circulation of survey questionnaires to the candidates. An informed consent was obtained via Google forms in accordance to the protocols and principles under the purview of Helsinki Declaration (1964 and later) before the respondents volunteered to participate in the survey. The participants were assured that their e-mail ids and personal details will be maintained under complete confidentiality by the researcher.

Inclusion criteria: Undergraduate dental students who had recently passed out/currently studying in any dental college in Tamil Nadu, those of third year, final year and current intern batch, recently passed out batch of interns of academic year 2019-2020, who were able to understand and respond in English language were included in the study.

Exclusion criteria: Subjects who are not willing to participate and those who had not filled the questionnaire survey completely were excluded from the study.








Sample size calculation: A preliminary survey was conducted among 30 subjects and the estimated sample size was 498 with margin of error at 5% and 95% confidence level. Non probability, convenience sampling technique was employed that yielded responses from 510 dental practitioners out of 700 survey forms sent across various online platforms for this observational study with a cross-sectional design.

Questionnaire

The required information was collected through published scientific articles pertaining to the objective of the study using thorough search in electronic database like PubMed, EMBASE, Cochrane Library and Google Scholar by the authors independently [7,9-25]. Self-administered structured questionnaire comprising 40 questions [Table/Fig-1] in English language was prepared and evaluated by a panel consisting of professors of various clinical specialties in dentistry belonging to the institute and a statistician. The questionnaire had a combination of close ended questions (Yes/No) followed by questions of linear rating scale as well as open ended questions eliciting the mental status, physical constraints as well as economical hurdles faced on account of pandemic during their clinical practice after the lockdown. The survey was done through Google forms ensuring that all the participants were

S. No.	SECTION 1
	Yes or No type
1.	Do you feel that the COVID-19 lockdown has had an impact on your exposure to clinical practice? • Yes • No
2.	Do you feel safe practicing dentistry during the pandemic situation? • Yes • No
3.	Did your institute conduct any awareness programs on the Infection Control Protocol for COVID-19? • Yes • No
4.	Do you mandatorily wear the PPE kit while dealing with patients? • Yes • No
5.	Does your institute provide you with free PPE kits, masks and gloves while treating patients? • Yes • No
6.	Do you have a difficulty in acquiring transport services and accommodations on account of the lockdown? • Yes • No

7.	Do you feel that you have gained sufficient theory knowledge during the online classes compared to the conventional classes? • Yes • No
8.	Do you feel that you require supplementary workshops to gain better hands on clinical practice? • Yes • No
9.	Do you feel that patients have restrained from dental visits on account of the pandemic? • Yes • No
10.	Has there been a rise in the customary fee charged in your institute due to the pandemic? • Yes • No
11.	Did you have a reduction in the clinical quota burden on account of the lockdown? • Yes • No
12.	Do you feel that the stress in completion of clinical quota in a short duration has restricted you from enjoying your clinical practice? • Yes • No
13.	Have you been vaccinated against COVID-19 yet? • Yes • No
14.	Did your institute provide measures to vaccinate all the workers and students against COVID-19? • Yes • No
15.	Does your institute maintain digital records of the patient details in order to prevent the risk of contact in the use of manual case records? • Yes • No
16.	Does your institute maintain a record of the temperature and Oxygen saturation of everyone (includes workers and patients) entering the campus on daily basis? • Yes • No
17.	Does your institute follow adequate safety measures during the radiographic examinations of patients to prevent cross-infections? • Yes • No
18.	Do you use disposable drapes, tray covers and dental chair covers for each patient? • Yes • No
19.	Does your institute have separate rooms for performing aerosol generated procedures to prevent the risk of spread of COVID-19? • Yes • No
20.	Do you feel that you will be able to overcome the shortcomings due to the lockdown in regard to the clinical practice? • Yes • No
SECTION 2	
Linear rating scale	
21.	Your level of confidence while approaching a clinical case at present when compared to prelockdown period is <div style="text-align: center;"> 1 ○ ○ ○ ○ ○ 5 </div> <p style="text-align: center;">1- Very Poor to 5- Excellent</p>
22.	How efficiently are you able to apply the knowledge gained from online classes during practice? <div style="text-align: center;"> 1 ○ ○ ○ ○ ○ 5 </div> <p style="text-align: center;">1- Very Poor to 5- Excellent</p>
23.	How well is your knowledge about the infection control protocols of COVID-19? <div style="text-align: center;"> 1 ○ ○ ○ ○ ○ 5 </div> <p style="text-align: center;">1 - Very Poor to 5 - Excellent</p>

24.	How do you rate the out-patient flow before and after the lockdown in your institute?  1- Very Poor to 5- Excellent
25.	Your level of clinical experience compared to your seniors who had practiced during the prepandemic period is  1- Very Poor to 5- Excellent
26.	How do you rate the level of safety measures followed by your institute against the spread of COVID-19?  1- Very Poor to 5- Excellent
27.	How effective do you feel the use of PPE is in preventing the spread of COVID-19?  1- Very Poor to 5- Excellent
28.	How efficient do you think are the vaccines against COVID-19 infections?  1- Very Poor to 5- Excellent
29.	To what extent do you feel that the provision of exhausts aid in expulsion of aerosols generated during dental treatment?  1- Very Poor to 5- Excellent
30.	How effective does fumigation of clinics aid against COVID-19?  1- Very Poor to 5- Excellent

SECTION 3

Open ended questions

31.	What are the problems you face in your clinical practice due to the pandemic?
32.	By what means did the lockdown have an impact among the public on visiting a dentist?
33.	What initiatives were taken up by your institute to aid in constructively utilising the lockdown?
34.	By what means did your institute compensate for the lack of clinical practice on patients?
35.	What were the major sources of clinical knowledge that you gained during lockdown?
36.	How often are the clinics in various departments of your institute fumigated?
37.	What means of surface disinfection is used widely in your institute?
38.	What do you do if a patient coming to your clinic shows symptoms of cough, raised temperature and breathing difficulty?
39.	What are the possible means of reducing the spread of COVID-19 in dental institutes?
40.	What are your suggestions for betterment of clinical practice among undergraduate students?

[Table/Fig-1]: Self-administered structured questionnaire for survey. COVID-19: Coronavirus disease-2019; PPE: Personal protective equipment

informed about the purpose of the study. The questionnaire was validated and standardised using a test study among 30 samples showing adequate internal consistency with a Cronbach's alpha value of 0.7.

STATISTICAL ANALYSIS

Responses recorded among the selected population group were evaluated by frequency distribution and descriptive analysis using Microsoft Excel. On statistical evaluation, it was observed that

all 510 samples were valid for the study with Cronbach's alpha reliability score being 0.861 (Significant score). Statistical Package for the Social Sciences version 19.0 (SPSS Inc., Chicago, IL, USA) was used to analyse the data.

RESULTS

On analysis of the given data the mean age of the study population was observed to be 21.72±2.2827 years of age ranging between 18-27 years of age. On evaluation, a total of 323 female (63.3%) and 187 male (36.7%) respondents were present.

In the present study, as described in [Table/Fig-2], depicts the frequency and percentage of each response for questions of Section A (Yes/No) questioning the steps taken by the institute and individual in the safety measure followed and the aspects related to patient flow. Section B (Linear Rating Scale) elicits the perception and degree of acceptance of undergraduate students towards the pandemic scenario as was observed that the majority of the participants (99%) feel COVID-19 lockdown had an impact on clinical practice exposure. The measures taken by their respective institutes on account of pandemic had been questioned revealing that 80.8% maintain a record of the temperature and oxygen saturation for all individuals including workers entering the campus on a daily basis. About 65.9% of institutions have conducted COVID-19 infection control protocol awareness programs and encouraged students in taking up certified courses in reinforcement of clinical practice during COVID-19.

[Table/Fig-3] illustrates the responses to open-ended questions that demanded the reasons behind various hurdles faced in treating patients, completion of quota and applying the theoretical knowledge into practical use. Fear of exposure to COVID-19 (30%) was the response by most when questioned regarding the problem faced in clinical practice due to COVID-19. A 35.5% of the students

S. No.	Questions	Options	Frequency	Percentage
1	Do you feel that the COVID-19 lockdown has had an impact on your exposure to clinical practice?	Yes	505	99.0
		No	5	1.0
2	Do you feel safe practicing dentistry during the pandemic situation?	Yes	179	35.1
		No	331	64.9
3	Did your institute conduct any awareness programs on the infection control protocol for COVID-19?	Yes	336	65.9
		No	174	34.1
4	Do you mandatorily wear the PPE kit while dealing with patients?	Yes	467	91.6
		No	43	8.4
5	Does your institute provide you with free PPE kits, masks and gloves while treating patients?	Yes	173	33.9
		No	337	66.1
6	Do you have a difficulty in acquiring transport services and accommodations on account of the lockdown?	Yes	418	82.0
		No	92	18.0
7	Do you feel that you have gained sufficient theory knowledge during the online classes compare to the conventional classes?	Yes	208	40.8
		No	302	59.2
8	Do you feel that you require supplementary workshops to gain better hands on clinical practice?	Yes	462	90.6
		No	48	9.4
9	Do you feel that patients have restrained from dental visits on accounts of the pandemic?	Yes	422	82.7
		No	88	17.3
10	Has there been a raise in the customary fee charged in your institute due to the pandemic?	Yes	295	57.8
		No	215	42.2

11	Did you have a reduction in the clinical quota burden on account of lockdown?	Yes	325	63.7
		No	185	36.3
12	Do you feel that the stress in completion of clinical quota in a short duration has restricted you from enjoying your clinical practice?	Yes	434	85.1
		No	76	14.9
13	Have you been vaccinated against COVID - 19 yet?	Yes	246	48.2
		No	264	51.8
14	Did your institute provide measures to vaccinate all the workers and students against COVID-19?	Yes	284	55.7
		No	226	44.3
15	Does your institute maintain digital records of the patient details in order to prevent the risk of contact in the use of manual case records?	Yes	293	57.5
		No	217	42.5
16	Does your institute maintain a record of the temperature and oxygen saturation of everyone entering the campus on daily basis?	Yes	412	80.8
		No	98	19.2
17	Does your institute follow adequate safety measures during the radio-graphic examinations of patients to prevent cross-infections?	Yes	366	71.8
		No	144	28.2
18	Do you use disposable drapes, tray covers and dental chair covers for each patient?	Yes	442	86.7
		No	68	13.3
19	Does your institute have separate rooms for performing aerosol generated procedures to prevent the risk of spread of COVID-19?	Yes	284	55.7
		No	226	44.3
20	Do you feel that you will be able to overcome the short comings due the lockdown in regard to the clinical practice?	Yes	327	64.1
		No	183	35.9
21	Your level of confidence while approaching a clinical case at present when compare to prelockdown period.	1.0	12	2.4
		2.0	62	12.2
		3.0	290	56.9
		4.0	110	21.6
22	How efficiently are you able to apply the knowledge gained from only classes during practice?	1.0	6	1.2
		2.0	91	17.8
		3.0	273	53.5
		4.0	114	22.4
23	How well is your knowledge about the infection control protocols of COVID-19?	1.0	1	0.2
		2.0	9	1.8
		3.0	239	46.9
		4.0	190	37.3
24	How do you rate the out-patient flow before and after the lockdown in your institute?	1.0	33	6.5
		2.0	85	16.7
		3.0	272	53.3
		4.0	101	19.8
25	Your level of clinical experience compare to your seniors who had practiced during the prepandemic period.	1.0	73	14.3
		2.0	107	21.0
		3.0	217	42.5
		4.0	98	19.2
		5.0	15	2.9

26	How do you rate the level of safety measures followed by your institute against the spread of COVID-19?	1.0	20	3.9
		2.0	72	14.1
		3.0	189	37.1
		4.0	189	37.1
27	How effective do you feel the use of PPE is in preventing the spread of COVID-19?	1.0	0	0.0
		2.0	17	3.3
		3.0	127	24.9
		4.0	293	57.5
28	How effective do you think are the vaccines against COVID-19 infections?	1.0	2	0.4
		2.0	30	5.9
		3.0	183	35.9
		4.0	251	49.2
29	To what extent do you feel that the provision of exhausts aid in expulsion of aerosols generated during dental treatment?	1.0	2	0.4
		2.0	17	3.3
		3.0	252	49.4
		4.0	215	42.2
30	How effective does fumigation of clinics aid against COVID-19?	1.0	2	0.4
		2.0	8	1.6
		3.0	155	30.4
		4.0	258	50.6
		5.0	87	17.1

[Table/Fig-2]: The frequency and percentage of each response towards questions that elicited the perception and degree of acceptance of undergraduate students towards the pandemic scenario.

felt that conducting free dental camps can increase the patient flow and thus compensate the loss in clinical experience, while 24.11% felt that reducing the treatment charges to benefit the people from various social strata could help.

Q. No.	Question	Responses	Frequency	Percentage
31	What are the problems you face in your clinical practice due to COVID-19?	Lack of clinical practice	108	21.5
		Fear of exposure to COVID-19	154	30
		Unable to complete clinical quota	143	28
		Lack of proper infection control	105	20.5
32	By what means did the lockdown have an impact among the public in visiting a dentist?	Economical restraints due to lockdown	136	26.6
		Fear of getting infected by COVID-19 hence avoid dental check up	189	37.1
		Lack of dental camps or awareness programs	102	20
		All the above	83	16.3
33	What initiatives were taken up by your institute to aid in constructively utilising the lockdown?	E-paper and e-poster presentations	144	28.2
		Encouraging research publications	90	17.6
		Organising webinars	229	45
		None of the above	47	9.2
34	By what means did your institute compensate for the lack of clinical exposure?	Exposure to Objective Structured Clinical Examination (OSCE)	113	22.2
		Simulation of clinical practice on Phantom heads	128	25.1
		Video demonstrations	150	29.4
		Nil	119	23.3

35	What were the major sources of clinical knowledge that you gained during lockdown?	Certified online courses and workshops	102	20
		Online classes, books, journals etc.,	242	47.5
		Unauthorised sources (e.g., YouTube, Google etc.,)	148	29
		Nil	18	2.9
36	How often are the clinics in your institute fumigated?	Everyday	146	28.7
		Once a week	143	28.0
		Once in 2 days	143	28.0
		Once in 3 days	78	15.3
37	What means of surface disinfection is used widely in your institute?	0.1% Sodium Hypochlorite	186	36.5
		0.5% Hydrogen Peroxide	64	12.5
		70-90% Isopropyl Alcohol	260	51.0
38	What are the possible means of reducing the spread of COVID-19?	Alternative shifts for each week among the clinicians to prevent high risks of spread	27	5.3
		Patients' history of any symptoms must be taken before they seated for oral screening	73	14.3
		Patients must be made to follow safety protocols while being seated for treatment	152	29.8
		Compulsory wear of PPE kits, surgical/N95 masks and gloves while dealing with patients	73	14.3
		All the above	185	36.3
39	What are your suggestions for betterment of patient flow?	By conducting free dental camps	181	35.5
		Hygienic maintenance of the premises and clinical setup	102	20
		Increasing the dental chairs to accommodate multiple patients to compensate the time for disinfection	104	20.4
		Reducing the treatment charges to benefit the people from various social strata	123	24.11
40	What do you do if a patient coming to your clinic shows symptoms?	Ask the patient to directly take a COVID-19 test and return with the report	110	21.6
		Advise him to isolate, family members to get tested	145	28.4
		Report to the higher officials regarding the possible exposure to infection	122	24
		Ask the patient to refer a physician immediately informing their health risk	133	26.1

[Table/Fig-3]: The frequency and percentage of each response towards open-ended questions illustrating the hurdles faced by clinical students and the necessary actions to be taken to overcome.

DISCUSSION

Coronavirus Disease-2019 transmissions are associated with the release of respiratory droplets by coughing, sneezing, and through aerosol route. Due to the nature of dental procedures and the large number of droplets and aerosols generated during dental treatment associated with close contact with patients, several standard protective measures and guidelines have been adopted in daily dental clinical work to prevent the spread of COVID-19 [11,12]. [Table/Fig-4] illustrates the comparison of the responses attained in the present study with other studies [7,9,10,13-15,17, 19-21].

S. No.	Author and Year	Number of subjects	Parameters compared	Conclusion
1	Hattar S et al., 2020 [7]	310	Students finding it hard to adapt to e-learning methods	The overall self-perceived preparedness level was promising; however students had reservations regarding independent practice following graduation.
2	Valekar SS et al., 2021 [9]	118	Patients restraining from dental visits during the period of Pandemic	The study has shown that significant number of dental students had disturbed mental well-being due to stress created related to loss of academic year and clinical experience
3	Loch C et al., 2021 [10]	136	Lack of clinical competence	Both students and staff considered the closure of clinics would cause extreme impact on students' clinical competence; however, online case-based discussions and tutorials were suggested as potential alternative teaching methods that could be adopted during that period.
4	De Vos J 2020 [13]	NA*	Patient flow has been reduced drastically	The spread of the COVID-19 virus has resulted in unprecedented measures restricting travel.
5	Sinjari B et al., 2020 [14]	440	Patients restraining from dental visits during the period of pandemic	Government implied restrictions adopted to contain the infection could have forced the general public to avoid visiting dentist even in a dental emergency situation.
6	Meng L et al., 2020 [15]	NA*	Following adequate screening of patients and staff for COVID-19 and inculcating strict infection control measures	Concern for potential transmission of disease to the family members and close inmates of undergraduate students and clinical staff while working in dental teaching and clinical environment
7	Iosif L et al., 2021 [19]	352	Difficulty in travelling to work places and educational institutes	Restricted mobility due to the lockdown enforced in most countries to control the spread of the pandemic
8	Coulthard P, 2020 [17]	NA*	Aerosol generation and its threats in dentistry	Emergency dental care was provided with advice on strict personal protection and measures to reduce and avoid production of droplets and aerosols, use of high-volume aspiration, and others, as had been recommended during the earlier SARS outbreak
9	Gallagher JE et al., 2020 [20]	NA*	Means to avoid cross-infection	Signified the importance of Personal Protective Equipment (PPE) for health and social care personnel
10	Villani FA et al., 2020 [21]	NA*	To prevent the transmission of COVID during dental practice	Clinically, the use of a rubber dam is essential. FFP2 (or N95) and FFP3 respirators, if compared to surgical masks, provide greater protection for health workers against viral respiratory infections.
11	Present study	510	Assessing the effects of lockdown on clinical practice among undergraduate dental students in Chennai.	Majority of the participants (99%) felt COVID-19 lockdown had an impact on clinical practice exposure. Most of the students felt that conducting free dental camps can increase the patient flow and thus compensate the loss in clinical experience.

[Table/Fig-4]: Depicts the comparison of results of the present study with those of previously published articles [7,9,10,13-15,17, 19-21].

*Not Applicable; SARS: Severe acute respiratory symptoms; FFP: Filtering facepiece

About 65.9% of institutions conducted COVID-19 Infection Control Protocol awareness programs, 71.8% follow adequate safety measures during the radiographic examinations and 55.7% prefer separate rooms for performing aerosol generated procedures in institutions similar to those of Loch C et al., Meng L et al., and Ge ZY et al., as mentioned in [Table/Fig-4] [10,15,16]. Coulthard P believe that the use of the PPE kits can be useful during dental practice to limit the spread of aerosol and aerogenic infections caused during dental practice [17].

Apart from the restraints of cross-infection, another hurdle faced during clinical practice was the restrictions in transport facilitation. Deshmukh SV and Iosif L et al., observed that limited transportation due to the lockdown enforced in most countries to control the spread of the pandemic created a negative impact on the patient flow as well as the difficulty in mobilisation of dental professionals across the city for work [18,19].

As a solution for reduced transmission of disease, Personal Protective Equipment (PPE), head caps, protective goggles, double surgical masks or N95, disposable surgical gowns, special foot-wears, and protective screens are essential while working in dental teaching and clinical environment [20,21]. Apart from the health-related issues, 85.1% feared the completion of clinical quota in a short duration and recommend (90.6%) supplementary workshops to gain better hands on clinical practice. This was similar to the study by Khanna MY et al., illustrating as high as 85% of the individuals with stress level (>7 in a score of 0-10) attributed to concerns about clinical experiences and research experience, and other factors such as employment predictions [22].

On evaluation of their perception on a linear rating scale about 56.9% of the students had rated 3 out of 5 when questioned if confident while approaching a clinical case at present when compared to prelockdown period by applying the knowledge gained from online classes during practice efficiently. In order to improve the clinical practice and gain knowledge, about 45% recommend organising webinars, 29.4% opted for video demonstration followed by 22.2% on exposure to OSCE to compensate for the loss of clinical practice and also suggests frequent workshops and hand-on exercises (35.5%) for better clinical practice. Coulthard P, Jiang Z et al., Chang TY et al., and Hung M et al., in their respective studies observed that students were experiencing higher levels of stress and feel their clinical education has impacted on a larger scale [17,23-25]. From these observations, it is evident that proper protocols should be established for the safety of students at institutions and to overcome the problems which could be created due to travel restrictions for both students and patients seeking dental treatment. Thus, adapting adequate precautionary measures as per government and WHO, Centers for Disease Control and Prevention(CDC), Americans with Disabilities Act (ADA) guidelines will protect the dentist as well as prevent cross contamination of the infection.

Limitation(s)

This study was done on an online platform using self-administered structured questionnaires on account of the pandemic situation leading to the lack of accountability and veracity of the response due to absence of an interviewer.

CONCLUSION(S)

Coronavirus Disease-2019 has had a deleterious impact on the clinical practice among undergraduate students as well as their intellect in applying their theoretical knowledge practically. The pandemic has trained every professional to cope with restraints and hurdles, lest the field of education has had the necessity to utilise newer teaching programs. Majority of the participants (99%) felt COVID-19 lockdown had an impact on clinical practice exposure.

Most of the students felt that conducting free dental camps can increase the patient flow and thus compensate the loss in clinical experience. Video demonstrations live clinical training programs, workshops on infection control protocols, practice on simulations like phantom heads alongside psychological counselling and motivational therapies at regular intervals will aid in improving their clinical application as well as to overcome mental stress and fear to enhance the sustainability of dental education.

It is the responsibility of the institute to follow strict safety protocols by the provision of necessary equipment to the practitioners as well as avoid demanding increased treatment charges on account of pandemic, which inadvertently prevents the patients from availing dental services. Further studies must be taken up to evaluate newer teaching methods and incorporating counselling sessions regularly in the curriculum to encourage the students to cope with the inevitable impacts of COVID-19 successfully.

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