

Role of Social Media in Orthodontics and Dental CDE during Covid-19 Pandemic

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Abstract

Background: The outbreak of COVID-19 globally has alarmed everyone around the globe. To control the spread of this pandemic the government has imposed lockdown as a result of which the dental clinics and colleges have been shut down. In these tough times, the social media has provided the students and practitioners with new ways of communication. During this pandemic time, significant losses of theory and practical class has incurred. Online teaching platforms like Zoom, Skype, WebEx, Google

Classroom, GoToWebinar, etc. have made it possible to partly overcome this adversity and helps the students and teachers to communicate with each other effectively.

Material & Method: A self-directed questionnaire was prepared using Google Forms. The questionnaire was divided into two sections: *demographic section* and *general questionnaire section*. The sample size was 300. The questionnaire was circulated into different WhatsApp groups having Orthodontic post graduates, practitioners and academicians from different parts of the country.

Kolmogorov- Smirnov test and Shapiro-Wilks test were employed to test the normality of data. Chi square test was performed for quantitative variables.

Result: Study revealed that there was a majority of Females (57%) and Post-Graduates (69.6%). 58.2% participants had experience of online teaching and Zoom was their preferred platform for learning (87.3%). It was beneficial from exam point of view (43%) and enhancement of theoretical (58.2%) and clinical knowledge (57%) with online teaching. (44.3%) of the participants found it to be somewhat interactive. Sessions were 25-50% efficient in coping up with the losses and 86.1% thought that webinars should continue post lockdown.

Conclusion :Internet (social media) has served as an efficient tool in providing dental education during lockdown.

The internet is open to everything and anything. From just social media applications to online teaching platforms, the internet has seen much of an evolution and so has social media.

Keywords: Covid 19, Lockdown, Social Media, Webinar.

Introduction

The outbreak of COVID-19 globally has alarmed everyone around the globe. In order to control the spread of this pandemic the government has sealed the border & imposed lockdown. The lockdown has jeopardized every single being and calls for self-quarantine, evidently marking a rough time for dentists as the route of transmission of this disease is through nasopharyngeal airway and salivary glands.^[1] The risk of cross infection between the dental practitioner and patient may be high due to which only emergency cases are attended to.^[2] Due to direct communication with the patient and exposure with saliva, blood and handling of sharp dental instruments the dentists are at an extreme risk of getting

infected.^[3] It has adversely affected the dental practitioners and the dental students as well. In these tough times, the social media has provided the students and practitioners with new ways of communication with teachers & patients respectively. Social media is defined as “Assembly of internet-based tools that generate a platform for community to gather and convey, permitting uncomplicated sharing of knowledge, news and associating it with real time.”^[4]

Tim Berners Lee in 1989 invented world wide web that revolutionized the transference and expression of complex systemic data. 20 years later, web of 2010 changed eventfully. Presently, it is well known as Web 2.0 which includes social media like WhatsApp, Twitter, Facebook, Skype and Instagram, video sharing application such as YouTube, interactional websites like Wikipedia and blogs for learning and health care.^[5,6] Over the last few decades, social media has brought about significant changes in whole business, education and politic system with dental education being no exception to it.^[7] During this pandemic time, significant losses of theory and practical class has incurred due to closure of dental colleges. Online teaching platforms like Zoom, Skype, WebEx, Google Classroom, GoToWebinar, etc. have made it possible to partly overcome these losses and helps the students and teachers to communicate with each other effectively. Students are just one click/link away to what it takes to cope up with challenge. The ongoing online sessions have kept everyone updated and are as effective as the offline sessions. Just like classroom teaching, students are asked to join the online class and present seminars, journal clubs without any threat to their comfort quotient or to attend online webinars conducted by national/ international faculties. These sessions are interactive and have given ample of theoretical knowledge and clinical skills which will help the participants in the long run. Variety of

educational approaches has been provided by social media to us during this lock down phase and this a cost-effective method of teaching & learning which is easily available.

Null Hypothesis tested that there was no difference between the groups in online teaching by social media in providing education during lock down.

The purpose of this study was to assess the role of social media in providing education to practitioners and students during lock down phase of Covid- 19.

Material & Methods

A self-directed questionnaire was prepared using Google Forms. These forms provide statistical results instantly by evaluating the responses so to as to get an inference. The sample size was 220 calculated using G power software. The questionnaire was divided into two sections: **demographic section** in which the participants were asked to identify their gender, their qualification, years of experience and **general questionnaire section** which included 25 questions relevant to the study. All the questions were mandatory. The participants can fill up the form anytime at their comfort. The responses will be kept anonymous. The questionnaire was circulated into different WhatsApp groups having Orthodontic post graduates, practitioners and academicians from different parts of the country. The responses that we got were recorded and analysed.

Statistical Analysis

The data collected was entered in Microsoft Excel and subjected to statistical analysis using Statistical Package for Social Sciences (SPSS, IBM version 20.0). The level of significance was fixed at 5% and $p \leq 0.05$ was considered statistically significant. The power of study is 80%. Kolmogorov- Smirnov test and Shapiro-Wilks test were employed to test the normality of data. Chi square test was performed for quantitative variables.

Result

The mean age of the participants in the present study was 29.83 ± 7.9 years. The demographic assessment of the present study revealed that there was a majority of Females (57%) and Post-Graduates (69.6%) (**Table 1**). It was also observed that larger portion of the participants in the present study had experience of online teaching (58.2%) and Zoom as their preferred platform for learning (87.3%). Participants reported experiencing technical difficulties (60.8%) and disturbance/distractions while attending sessions (74.7%). A considerable proportion of the participants did not feel that the webinars covered enough orthodontic syllabus (62.7%); however, reported that they were self-participating (78.5%) in the lectures. Participants had neutral/ partly efficient (38%) opinion regarding the methods of teaching being equivalent to classroom teaching, and neutral opinion regarding it being beneficial from exam point of view (43%) and enhancement of theoretical (58.2%) and clinical knowledge (57%) with online teaching. None of the participants rated the experience as not at all interactive and majority of the participants found it to be somewhat interactive (44.3%). Participants felt that these sessions helped in coping up 25-50% of the losses due to closure of dental colleges and 86.1% thought that webinars should continue post lockdown (**Table 2**).

A comparative evaluation of gender-wise assessment revealed significant difference between males and females. It was seen that males had more difficulty in following the procedure of booking the sessions and the email communication (**Table 3**).

It was revealed during the assessment of various designations that there were significant differences in experiencing technical difficulties, lectures being mailed, conducting JC/Seminar and this method being more effective than classroom teaching (**Table 4**).

Discussion

The ease of access and use of online tools are extremely important for the successful implementation of online learning (Alhomod and Shafi, 2013).^[8] Further, the students should have the necessary technical skills and good quality of internet services to utilize efficiently the online contents (Soong et al., 2001).^[9] Furthermore, the effective online learning requires the suitable applications in addition to easy content navigation tools (FitzPatrick, 2012).^[10]

Taking into consideration these important aspects of the online tools, the present study was carried out among 220 participants to check the efficacy of social media in providing dental education during lockdown. This one of its kind study among the orthodontists incorporating the utilization of different social media platforms in providing dental education.

Female postgraduate represented a major proportion of the participants in the present study thus strengthening the notion of greater female predilection in the dental stream. As these programs were targeted primarily for the post graduate students, they represented the maximum participation in these dental education programs.

Participants in our study reported experiencing online teaching prior to the commencement of the study too. In the line with the findings of the present study, a research conducted by Margie R Arnett et al., (2013)^[11] also reported that the respondents in their study used applications with frequency of several times a day.

The inability to carry out classroom teaching in this lockdown situation online dental education programs have served as an effective means of providing efficient education. In the present study majority of the participants reported that the maximum number of links to them was provided through WhatsApp, in contrast to our findings Facebook was found to be most frequently used social

media site in the study done by Margie R Arnett et al., (2013).^[11]

WhatsApp has emerged as one of the most frequently used means of communication with rapid expansion of mobile technology and increasing number of internet users. Incorporation of additional features of link sharing has even increased the utilization of this platform to a greater extent and making it the top choice for sharing the online resources. The most effective medium for conducting webinars in the present study was however reported to be Zoom (87.3 %).

The constraints of e-Learning and education via social media means was also highlighted in the current study as majority of the participants reported technical difficulties (60.8%) and disturbances/distractions (74.7%) while attending sessions. These lacunae strengthen the need of effective training and provides a scope of improvement.

The utility of online lectures, sessions and dental education programs were highlighted in the fact that majority of the participants felt that the online sessions and lectures covered enough orthodontic syllabus (62.7%). Interest and willingness to engage in similar activities during lockdown was reported among the participants and the majority of them were self- motivated to attend the webinars.

These dental education programs were well received and it was felt these CDE's (Continuing Dental Education) were helpful in the revision of subject and 86.1% even felt that the webinars should continue post lockdown. In accordance to study by Amal Linjawi et al,^[12] our study also showed that the on-line orthodontic e-course was a good supplement to the traditional learning methods in orthodontics such as; lecture handouts, books and articles. Males in this study reported significantly greater difficulty in booking the sessions and the e-mail communication and they experienced more significant technical difficulties

and this method being partly efficient than classroom teaching was seen among participants belonging to different designations.

The present study being cross-sectional did not take into consideration a differentiation of cause and effect from the simple association. This study was carried out during the time of lockdown amidst the COVID 19 pandemic and was one of its kind highlighting the role of new technologies in delivering the dental education among the orthodontists hence a comparative evaluation with a larger number of other studies could not be done. The assessment via Google forms for gathering the information in the current scenario represented only a subjective assessment of the perception regarding dental education amongst the orthodontists.

However, despite the limitation, this unique study not only highlighted the role of these different forums in delivering the dental education continuously even but also provided an insight into lacunae and constraints in the utilization of these media.

Upgrading and advancing technology along with changing global scenario will pave way for researchers in this nascent field of online learning and this study will not only serve as the initiator but also torchbearer in the advancing researches amongst orthodontists and other specialties.

Table 1: Demographic Details of the study participants

Variables	Categories	Percentage (%)
Gender	Female	57
	Male	43
Designation	Post Graduate	69.6
	Practitioner	25.3
	Academician	5.1
PG Year	I year	51.9
	II year	33.3

	III year	14.8
Experience	1-5 years	61.1
	6-10 years	13.9
	11-15 years	8.3
	More than 15 years	16.7

Table 2: Online Teaching Questionnaire assessment among the participants

Questions	Categories	Percentage (%)
Have you ever experienced online teaching before?	Yes	58.2
	No	41.8
Which social media has provided you with the maximum number of links for webinar?	WhatsApp	88.6
	Facebook	8.9
	Instagram	1.3
	Twitter	1.3
Which is the most preferred platform by you for online/ during lockdown by you?	Zoom	87.3
	Facebook Live	6.3
	Go to Webinar	6.3
	Meet	0
How did you find the procedure of booking the sessions and the email communication?	Easy	77.2
	Neither easy nor difficult	20.3
	Difficult	2.5
	Very difficult	0
Did you experience technical difficulties during the webinar?	Yes	60.8
	No	39.2
Did you experience any sort of distraction while attending online	Yes	74.7
	No	25.3

sessions?		
Did you face any language issue?	Yes No	2.5 97.5
Did you think the number of participants per lecture should be increased?	Yes No	63.3 36.7
Did you think these lectures should be mailed to you for later access?	Yes No	93.7 6.3
Do you think that the sessions covered the entire orthodontic syllabus?	Yes No	38 62
During the lockdown was your department conducting any Journal Club/seminar for you?	Yes No	74.7 25.3
If so, how many per week?	1	9.7
	2	12.9
	3	19.4
	4 or more	58.1
Do you think these sessions have provided you with the knowledge in other branches of dentistry as well?	Yes No	77.2 22.8
Did you find the sessions obligatory or self-participating?	Obligatory Self-Participating	21.5 78.5
How many lectures did you attend per	1	25.3
	2	39.2

day?	3	16.5
	4 or more	19
Do you think this method of teaching is more effective than classroom teaching?	Very efficient	19
	Neutral	38
	Partly efficient	38
	Not at all efficient	5
To what degree did this teaching activity enhance your theoretical knowledge?	Very helpful	16.5
	Neutral	58.2
	Somewhat helpful	24.2
	Not at all helpful	1.3
To what degree did this teaching activity enhance your current knowledge of clinical skill?	Very helpful	20.3
	Neutral	57.0
	Somewhat helpful	20.3
	Not at all helpful	2.5
To what extent did the webinar content help you in understanding the stated educational/ learning objective?	Very satisfied	46.8
	Neither satisfied nor dissatisfied	50.6
	Dissatisfied	2.5
	Very dissatisfied	0
How did you find this method of teaching is beneficial from examination point of view?	Extremely helpful	25.3
	Neutral	43.0
	Partly helpful	30.4
	Not at all helpful	1.3
How you find these sessions for revision purpose for the exam going PGs?	Extremely helpful	40.5
	Somewhat helpful	29.1
	Not so helpful	27.8
	Not at all helpful	2.5

How effectively are you able to understand the topic through the webinars?	Highly understanding	39.2
	Somewhat Understanding	40.5
	Neutral	19.0
	Not at all understanding	1.3
Based on your experience, how would you rate the interactive level of the CDE?	Very interactive	22.8
	Somewhat interactive	44.3
	Neutral	39.8
	Not at all interactive	0
Up to what percentage do you think these sessions can help to cope up with the losses due to closure of dental colleges due to lockdown?	0-25%	19
	25-50%	44.3
	50-75%	32.9
	75-100%	3.8
Based on your experience what do you think these webinars after lockdown should continue?	Yes	86.1
	No	13.9

Table 3: Gender wise evaluation of Online Teaching Questionnaire

Questions	Pearson Chi square	p value
Have you ever experienced online teaching before?	1.030	.310
Which social media has	5.518	.138

provided you with the maximum number of links for webinar?		
Which is the most preferred platform by you for online/ during lockdown by you?	1.344	.511
How did you find the procedure of booking the sessions and the email communication?	6.329	.042* (s)
Did you experience technical difficulties during the webinar?	.094	.759
Did you experience any sort of disturbance/ distraction while attending online sessions?	1.857	.173
Did you face any language issue?	.041	.840
Did you think the number of participants per lecture should be increased?	1.368	.242
Did you think these lectures should be mailed to you for later access?	.626	.429
Do you think that the sessions covered the entire orthodontic syllabus?	.002	.967
During the lockdown was your department conducting any Journal Club/seminar for you?	3.143	.076
If so, how many per week?	2.991	.393
Do you think these sessions have provided you with the knowledge in other branches of dentistry as well?	.461	.497

Did you find the sessions obligatory or self-participating?	2.202	.138
How many lectures did you attend per day?	2.079	.556
Do you think this method of teaching is more effective than classroom teaching?	5.508	.138
To what degree did this teaching activity enhance your theoretical knowledge?	1.636	.651
To what degree did this teaching activity enhance your current knowledge of clinical skill?	1.843	.606
To what extent did the webinar content help you in understanding the stated educational/ learning objective?	.196	.906
How did you find this method of teaching is beneficial from examination point of view?	5.822	.121
How you find these sessions for revision purpose for the exam going PGs?	2.836	.418
How effectively are you able to understand the topic through the webinars?	1.861	.602
Based on your experience, how would you rate the interactive level of the CDE?	1.861	.394
Up to what percentage do you think these sessions can help to cope up with the losses due	4.164	.244

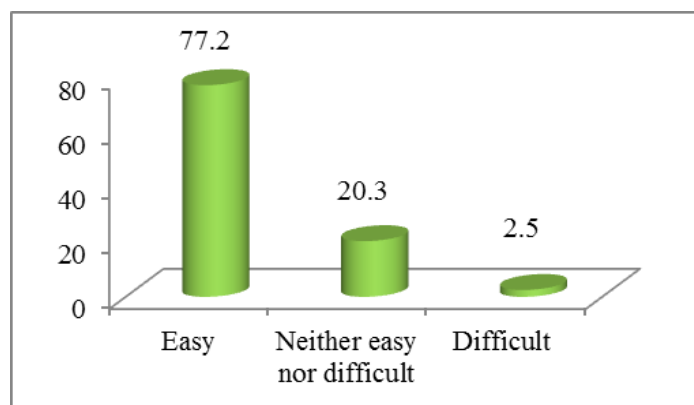
to closure of dental colleges due to lockdown?		
Based on your experience what do you think these webinars after lockdown should continue?	.030	.861

Table 4: Evaluation of Online Teaching Questionnaire with Designation of participants

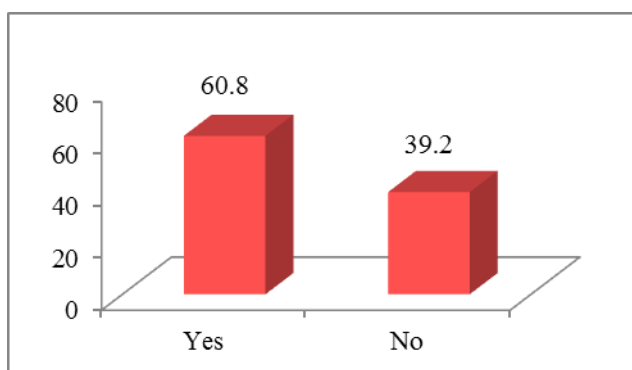
Questions	Pearson Chi square	p value
Have you ever experienced online teaching before?	3.426	.180
Which social media has provided you with the maximum number of links for webinar?	5.007	.543
Which is the most preferred platform by you for online/ during lockdown by you?	3.862	.425
How did you find the procedure of booking the sessions and the email communication?	3.846	.427
Did you experience technical difficulties during the webinar?	14.466	.001* (s)
Did you experience any sort of disturbance/ distraction while attending online sessions?	1.348	.510
Did you face any language issue?	.711	.701
Did you think the number of participants per lecture should be increased?	2.034	.362

Did you think these lectures should be mailed to you for later access?	6.776	.034* (s)
Do you think that the sessions covered the entire orthodontic syllabus?	2.464	.292
During the lockdown was your department conducting any Journal Club/seminar for you?	17.455	.001* (s)
If so, how many per week?	6.2641	.395
Do you think these sessions have provided you with the knowledge in other branches of dentistry as well?	4.282	.118
Did you find the sessions obligatory or self-participating?	.059	.971
How many lectures did you attend per day?	7.466	.280
Do you think this method of teaching is more effective than classroom teaching?	13.17	.040* (s)
To what degree did this teaching activity enhance your theoretical knowledge?	2.604	.857
To what degree did this teaching activity enhance your current knowledge of clinical skill?	4.760	.575
To what extent did the webinar content help you in understanding the stated educational/ learning objective?	7.997	.092
How did you find this method	5.567	.473

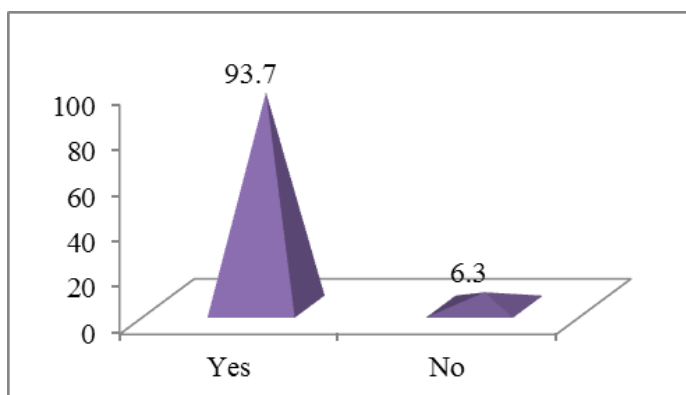
of teaching is beneficial from examination point of view?		
How you find these sessions for revision purpose for the exam going PGs?	9.351	.155
How effectively are you able to understand the topic through the webinars?	3.783	.706
Based on your experience, how would you rate the interactive level of the CDE?	2.531	.639
Up to what percentage do you think these sessions can help to cope up with the losses due to closure of dental colleges due to lockdown?	6.296	.391
Based on your experience what do you think these webinars after lockdown should continue?	2.011	.366



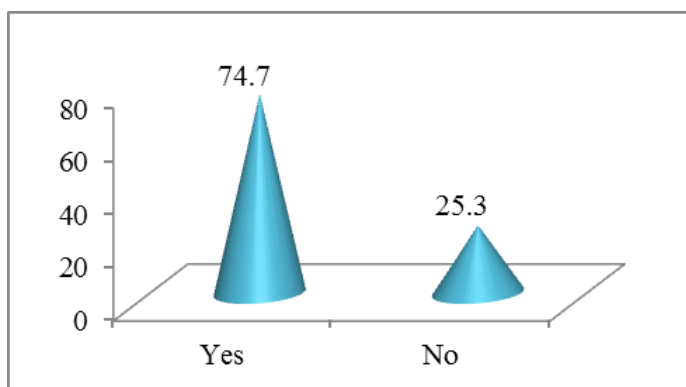
Graph 1: How did you find the procedure of booking the sessions and the email communication?



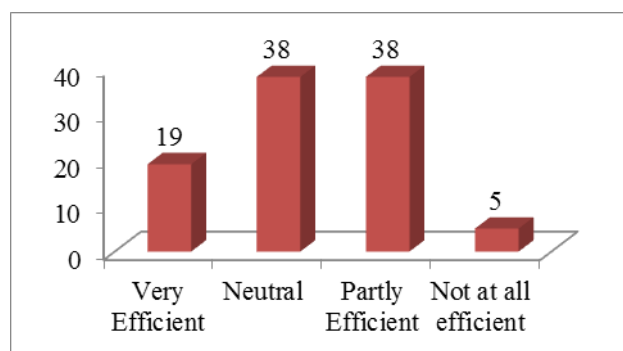
Graph 2: Did you experience technical difficulties during the webinar?



Graph 3: Did you think these lectures should be mailed to you for later access?



Graph 4: During the lockdown was your department conducting any Journal Club/seminar for you?



Graph 5: Do you think this method of teaching is more effective than classroom teaching?

Conclusion

It can be concluded from the present study that internet (social media) has served as an efficient tool in providing dental education during lockdown.

Majority of the participants in the present study were females and post graduates and experienced online teaching for the first time.

The lectures were self- participating major proportion of participants did not feel that the webinars covered enough orthodontic syllabus.

Participants had neutral/ partly efficient opinion regarding the methods of teaching being equivalent to classroom teaching, and neutral opinion regarding it being beneficial from exam point of view.

Participants felt that these sessions helped in coping up of the losses and that these webinars should continue post lockdown.

While the above-mentioned platforms have promoted online teaching, there are others which evaluate the experiences of dental patients. Some internet based social media users seek advice on dental pain, some describe their experience on social media, while some investigate public opinions on specific topics. The internet is open to everything and anything. From just social media applications to online teaching platforms, the internet has seen much of an evolution and so has social media. Call it a source of knowledge, information, entertainment,

communication, social media makes justice with each one of them.

Therefore, it can be said that social media has played a very effective role so far and has made everyone reap its best benefits.

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