



Dental Students' Perception towards Online Education Environment in a Dental College of Gurugram, Haryana

Aanchal Mishra¹, Charu Khurana^{2*}, Shourya Tandon³ and Sachin Chand⁴

^{1,3,4}Department of Public Health Dentistry, SGT Dental College, Hospital and Research Institute,

^{2*}SGT University, Gurugram, Haryana

Email: drcharukhurana@gmail.com

ABSTRACT

In the era of pandemic, where educational institutions in the world close down over a night resulted in the sudden shift of the conventional education methods to digital learning has become a reason of several difficulties and challenges for students at different levels. To assess dental students' perception towards online education environment in a dental college of Gurugram, Haryana. An observational study was conducted among the students of a dental college in Gurugram city. It was an online questionnaire-based study of dental students that was conducted in the dental college and hospital located in Gurugram district, Haryana. Data was collected through a self-structured questionnaire made in google document format. (Google proforma). Statistical analysis was done using SPSS V.20.0 and descriptive statistics was done using chi square test was used for the association of the proportions. The level of statistical significance was set to be $p < 0.001$ was considered statistically significant. Our research reported a positive response among our study participants regarding perception towards online learning and observed that dental students preferred classroom learning when compared with online learning and found classroom learning to be more beneficial in dentistry. The findings of the study concluded that even after gaining immense popularity today, digital technology has not yet been well accepted by the dental students for their academic curriculum. Students still finds conventional teaching methods more favorable comparative to online education.

Key words: Online education, Coronavirus disease-2019, Pandemic, Dental students

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INTRODUCTION

In the past decade, the substantial use of social media, smartphones, the Internet explorer, has incredibly increased and become the source of enhanced learning among students. A plethora of social networking applications are available such as Facebook, Twitter, Google Duo, LinkedIn, Instagram, Messenger which allows users to connect, collaborate, and communicate with one another globally [1-3]. Today's generation is digitally literate and technologically knowledgeable. Earlier, the teacher student life was primarily dependent on textbooks, handouts, and notes in their classes. But these days, where everyone is growing with all the technology around, the blended learning style in form of online education has taken over as successful and revolutionary teaching methods [4-5]. Online education is comprehensive process, convenient, flexible, cost effective, offers different learning skills, enable students to learn from their place of choice, overcomes shortage of faculty, and has the capacity to shift the learning process from passive teacher-centred learning to active learner-centred learning [6-8]. Today the majority of educational institutions has adopted the digital form of teaching as an essential part of their academic strategy [9]. The widespread popularity of information technology has greatly influenced every aspects of our lives including education sector which cannot be overlooked [10]

In the era of pandemic, where educational institutions in the world close down over a night resulted in the sudden shift of the conventional education methods to digital learning has become a reason of several difficulties and challenges for students at different levels [11]. Such situation arises the need to find out students' opinion and view point regarding this digital approach in learning. It is necessary to explore if students are adapted to the new methodologies in teaching, would recommend any changes, or rather satisfied and would want to go back to conventional teaching methods [12-13]. Keeping this concern in mind, the current study determined the extent to which dental students using social media, online applications, databases for learning, and their preferences and interest towards incorporating online learning into regular academic courses.

MATERIAL AND METHODS

Study Population

Descriptive cross sectional-based study was conducted among dental students studying in dental college of Gurugram, Haryana.

All the students who had fulfilled the following criteria were included in the study population.

Inclusion Criteria-

All students enrolled under graduation and post-graduation courses in the dental college.

Exclusion Criteria-

Dental students not willing to participate.

Study Questionnaire

It was an online questionnaire-based study of dental students that was conducted in the dental college and hospital located in Gurugram district, Haryana.

Data was collected through a self-structured questionnaire in English language and was made in Google document format (using google proforma). Validity was assessed by the panel of expert in the concerned field.

Questionnaire of our study consisted of different sections:

First part included General details

In general details information gathered were as following,

- Year of education, Gender, Age
- Which type of device used, video platforms used, categories of online teaching experienced, average time of sessions frequency of sessions attended and frequently used technology.

Second part includes perception about online education environment which was covered in 6 domains.

1. Online learning
2. Technical support
3. Social presence
4. Social interaction
5. Collaborative learning
6. Satisfaction

Domains Covered in the Questionnaire are described as:

1. **Online learning-** This domain involved questions regarding learning through the mode Web-based learning
2. **Technical support** – This domain involved question regarding barriers or challenges that could be faced by an individual during online learning
3. **Social presence** – It is an interaction between different individuals in an online learning environment. It has been noted a necessity to improve instruction in both traditional and online learning environments[14]
4. **Social interaction-** It is the interaction between learners and faculty that occurs when teacher promotes interpersonal encouragement and social integration. this domain involved questions based social interaction during online learning[15]
5. **Collaborative learning-** It is an instructional environment that allows students to learn and understand together towards a common goal. So, this domain involved questions to explore collaborative learning in online education[16]
6. **Satisfaction** - Satisfaction is a key principle of any education method where students are satisfied and motivated to learn more in the subject So, this domain involved around questions regarding satisfaction of students in digital education[17]

Study Procedure

Google forms were made in such a way that each student was permitted to submit one response within one week from the link of assessment forwarded to them. Students' perception was recorded based on only the content which is being taught in online teaching curriculum of the students in a dental college.

Total 450 students were selected including Undergraduate and Postgraduate students (excluding interns) and were sent study proforma link through emails gathered from college office. Within the google format all the students were informed regarding the purpose of study and consent required to be obtained. Out of 450 students only 187 responded to our survey proforma and 184 agreed to participate in our study and rest 3 were not willing to participate.

Armamentarium-Google survey proforma

Ethical considerations-Prior to the conduct of the study, the survey protocol was approved by the ethical committee of the education university, Gurugram.

Statistical Analysis-All the data collected was subjected to appropriate statistical analysis. The data was analyzed using SPSS 20.0 software and was appropriately represented in tables and graphs and pie chart. Data was subjected to appropriate statistical analysis using descriptive statistics and pearson's chi square test. $P < 0.001$ was considered statistically significant.

RESULTS

Table 1 :Shows demographic distribution and general characteristics related to online education of our study participants. We observed 187 responses out of which 184 participants responded yes to participate in our study, out of which 146 were females and 38 were male and majority were BDS First year (30.4%) and were belonging in 18-22 years age group (79.3%). General characteristics were also assessed related to online education, in which laptop (45.7%) and cisco WebEx (35.3%) was the device and platform that was found be used highest for the education. All of the teaching methodologies experienced were observed to be highest (47.8), maximum number of participants were observed to be having average duration of 30-60 minutes duration for one session (79.9%) and were found to be having sessions more than twice a week (76.1%) and mostly used online education technology by university was observed to be video with PowerPoint presentation (47.8%).

Table 2 and Graph 1: Shows distribution of study participant's responses to the questions. 6 domains were assessed for perception of online education.

In domain 1 we observed online learning in which majority of participants agreed to online education being technically sound (67.9%) , easy to understand (77.2%), language being stimulating (83.2%) and wanted to experience this mode of education in future (66.8%).

In domain 2 we observed technical support in which majority of participants agreed to online education being safe (59.2%) but majority said there were connectivity issues (63.6%).

In domain 3 we assessed social presence in which majority of participants agreed to discussions being in detail (73.9%) , their point of view being acknowledged (78.3%) and to forming a sense of belonging (62.5%).

In domain 4 we observed social interaction in which majority of participants agreed to being comfortable in interacting with students and instructors (65.8%) and quality of interaction with students and instructors (60.3%).

In domain 5 we observed collaborative learning in which majority of participants agreed to developing new skills (64.1%) , comfortable in asking queries (69.6%) and found collaborative learning effective (71.2%).

In domain 6 we assessed satisfaction of participants in which majority were found to be satisfied with online education (61.4%), agreed that discussions help in having different view points (69%) ,found learning to be of optimum quality (61.4%), online learning to be stimulating (66.8%), diversity of topics helped in learning (67.9%), and found online learning to be meeting their expectations (63%) and were satisfied with the content(57.6%).

Majority participants responded classroom learning (56.5%) to be more beneficial mode of learning for dentistry. (Graph 1)

Table 3: Shows association between educational qualification and mode of education learning. We observed that majority students went for classroom mode of learning including second (68.4%), third(57.1%) , final year (64.5%) BDS and postgraduate students(75%) except for first year students (67.3%) they went for online mode of learning. When compared they were found to be statistically significant.

Table 1: Demographic Distribution And General Characteristics Related To Online Education Of Our Study Participants

Variable	Frequency	%
Gender		
Males	38	20.7
Females	146	79.3
Age (Years)		
18-22	146	79.3
23-27	27	14.7
>27	11	6
Year of education		
BDS First year	56	30.4
BDS Second year	37	20.1

BDS third year	28	15.2
BDS final year	31	16.8
Postgraduate students	32	17.4
Type Of Device Mostly Used		
Desktop	4	2.2
Laptop	84	45.7
Tablet	13	7.1
Mobile phone	83	45.1
Video Platform Mostly Used		
Zoom	42	22.8
Cisco WebEx	65	35.3
Microsoft teams	21	11.4
Google meet	11	6
More than one	43	23.4
Other	2	1.1
Mostly Experienced Teaching Methodologies		
Seminars and Journal club presentations	35	19
Demonstrations	21	11.4
Theoretical lectures	63	34.2
Video lectures	70	38
All of the above	88	47.8
Average Duration Time For One Session		
Less than 30 minutes	16	8.7
30-60 minutes	147	79.9
More than 60 minutes	21	11.4
Frequency Of Sessions Per Week		
Once in a week	19	10.3
Twice in a week	25	13.6
More than twice a week	140	76.1
Frequently Used Online Education Technology By Your University		
Audio with PowerPoint	32	17.4
Video with PowerPoint	88	47.8
Live real time audio	9	4.9
Live real time video	39	21.2
Any other	16	8.7

Table 2 : Distribution of study Participant's responses to the questions

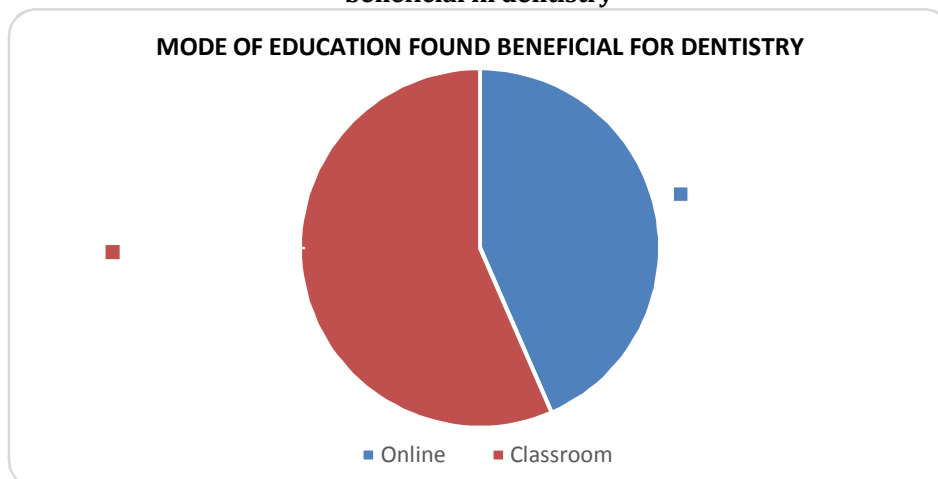
QUESTIONS	Participants n(%)	
	YES	NO
Domain 1- Online Learning		
1.Do you feel online education curriculum is technically sound	125 (67.9)	59 (32.1)
2. Do you feel that Software used for online education is easy to understand and apply	142 (77.2)	42 (22.8)
3. Do you feel language used by educator in online education is stimulating in nature	153 (83.2)	31 (16.8)
4.Would you like to participate in online education in the future	123 (66.8)	61 (33.2)
Domain 2- Technical Support		
1. Do you feel that there are no connectivity issues	67 (36.4)	117 (63.6)
2. Do you observe safety and privacy issues in online education	109 (59.2)	75 (40.8)
Domain 3- Social Presence		
1.Does the educator facilitate discussion in detail in the online education.	136 (73.9)	48 (26.1)

2. Do you feel that your point of view is acknowledged by other students/faculty members.	144 (78.3)	40 (21.7)
3. Do you feel the online education enables you to form a sense of belonging.	115 (62.5)	69 (37.5)
Domain 4- Social Interaction		
1. Do you feel comfortable in interacting with other students and expressing yourself through medium of online education	121 (65.8)	63 (34.2)
2. Do you feel that the amount and quality of interaction with instructors and students in the online education is appropriate.	111 (60.3)	73 (39.7)
Domain 5- Collaborative Learning		
1. Do you feel that you are able to develop new skills and knowledge from other members in your online curriculum.	118 (64.1)	66 (35.9)
2. Do you feel comfortable interacting and asking queries with faculty members in the online education	128 (69.6)	56 (30.4)
3. Do you feel collaborative learning in online education is effective	131 (71.2)	53 (28.8)
Domain 6- Satisfaction		
1. Are you satisfied with learning in online education	113 (61.4)	71 (38.6)
2. Do you feel discussions in online education can assist you in understanding different view points.	127 (69)	57 (31)
3. Do you feel your level of learning in online education is of optimum quality.	113 (61.4)	71 (38.6)
4. Do you feel that you are stimulated to do additional reading or research on topics discussed in the online education.	123 (66.8)	61 (33.2)
5. Do you feel that the diversity of topics in the online education prompted you to participate in the discussions	125 (67.9)	59 (32.1)
6. Overall, do you feel that this online education met your learning expectations	116 (63)	68 (37)
7. Do you think content of online lectures in online education is enough	106 (57.6)	78 (42.4)
Overall Satisfaction	Online	Classroom
8. Which mode of online education learning do you think is more beneficial in	80 (43.5)	104 (56.5)

Table 3: Association Between Year of education and Mode of Education Learning

Year of education	Mode Of Education Learning n(%)		
	Classroom	Online	Total
BDS First year	18(32.7)	37(67.3)	55(29.9)
BDS Second year	26(68.4)	12(31.6)	38(20.7)
BDS Third year	16(57.1)	12(42.9)	28(15.2)
BDS Final year	20(64.5)	11(35.5)	31(16.8)
Postgraduate students	24(75.0)	8(25.0)	32(17.4)
Total	104(56.5)	80(43.5)	184(100)
P value =0.000*			

Test applied- Pearson's chi square test. *P≤0.001 Statistically significant

Graph 1: Distribution Of Study Population With Respect to mode of education found to be beneficial in dentistry

The present study assessed the students' perception towards online education environment in a dental college of Gurugram, Haryana. In our study results showed that out of 187 participants, 184 participants agreed to participate in our study, out of which 146 were females and 38 were male and majority were BDS First year (30.4%) and were belonging in 18-22 years age group (79.3%). Findings of our study of having more females than males were found in agreement but age group and education were in contrast with $25 \pm .8$ years and BDS second years to be in majority reported by Turkyilmaz [18]

In our study, general characteristics were also assessed related to online education in which we observed device used, technology used, video platform used, methodologies experienced, average duration per session and frequency of sessions attended per week in our study participants.

We observed that which laptop (45.7%) and cisco WebEx (35.3%) was the device and platform that was found to be used highest for the online education. These findings of our study were found to be contradictory with the research conducted by Abbasi S who reported mobile was highest used device for online education [19]. Teaching methodologies were observed including – seminars and journal club presentations, demonstrations, theory lectures, video lectures and all of the above in which all of the teaching methodologies were observed to be highest (47.8%), maximum number of participants were observed to be having average duration of 30-60 minutes duration for one session (79.9%) and were found to be having sessions more than twice a week (76.1%) and mostly used online education technology by university was observed to be video with PowerPoint presentation (47.8%). Results reported in our study related to educational technology was in contrast with study done by Spears [20].

Six domains were assessed for perception of online education in our study participants which included online learning, technical support, social presence, social interaction, collaborative learning and satisfaction.

In Domain 1; we observed online learning in which majority of participants agreed to online education being technically sound (67.9%), easy to understand (77.2%), language being stimulating (83.2%) and wanted to experience this mode of education in future (66.8%). In domain 2 we observed technical support in which majority of participants agreed to online education being safe (59.2%) but majority said there were connectivity issues (63.6%). In domain 3 we assessed social presence in which majority of participants agreed to discussions being in detail (73.9%), their point of view being acknowledged (78.3%) and to forming a sense of belonging (62.5%).

In domain 4 we observed social interaction in which majority of participants agreed to being comfortable in interacting with students and instructors (65.8%) and quality of interaction with students and instructors (60.3%). In domain 5 we observed collaborative learning in which majority of participants agreed to developing new skills (64.1%), comfortable in asking queries (69.6%) and found collaborative learning effective (71.2%). In domain 6 we assessed satisfaction of participants in which majority were found to be satisfied with online education (61.4%), agreed that discussions help in having different view points (69%), found learning to be of optimum quality (61.4%), online learning to be stimulating (66.8%), diversity of topics helped in learning (67.9%), and found online learning to be meeting their expectations (63%) and were satisfied with the content (57.6%).

Several studies have been conducted regarding perception and impact of online learning but limited literature is present where perception is reported taking dental students and the above six domains. Majority participants responded classroom learning (56.5%) to be more beneficial mode of learning for

dentistry and We observed statistically significant association between educational qualification and mode of education learning. Results reported in our study is in agreement to the study conducted by Alkhalaf [21].

Overall our research reported a positive response among our study participants regarding perception towards online learning and observed that dental students preferred classroom learning when compared with online learning and found classroom learning to be more beneficial in dentistry.

CONCLUSION

It was observed that though digital technology has become indispensable part of our lives but still has not been well accepted by the students for learning purpose. Dental students still finds classroom teaching more favorable than online learning. During the unprecedented crisis of COVID-19, the administrative team and faculties of higher educational institutes should make changes to improve online teaching methods and help students for better learning.

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