

# Evaluation of online learning process of intern dental students during the Covid-19 pandemic period: A survey

Covid-19 pandemisi döneminde diş hekimliği fakültesi öğrencilerinin online öğrenme sürecinin değerlendirilmesi: Bir anket çalışması

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\*This study was presented as an oral presentation in 2<sup>nd</sup> INTERNATIONAL CONGRESS OF MULTIDISCIPLINARY STUDIES

IN MEDICAL SCIENCES that was held on February 13-14<sup>th</sup>, 2021, Ankara, Turkey.

Received/Geliş Tarihi: 28.07.2021

Accepted/Kabul Tarihi: 05.11.2021

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Cite this article: Keser G, Namdar Pekiner F. Evaluation of online learning process of intern dental students during the Covid-19 pandemic period: A survey. *Curr Res Dent Sci.* 2022; 32(1): 1-4.



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## ABSTRACT

**Objective:** Due to the COVID-19 epidemic, dental students have had to put their clinical training on hold and rely on online learning. The purpose of this research is to look at the influence of the COVID-19 pandemic on intern dental students and to assess their views on online learning.

**Methods:** An online survey was conducted consisting of 7 questions using Google Forms and circulated among 75 4<sup>th</sup> and 60 5<sup>th</sup> grade students at Marmara University, Faculty of Dentistry. The survey consisted of questions regarding participants' attitudes toward online education. IBM SPSS Statistics 25.0 (IBM SPSS, Turkey) program is used for statistical analysis.

**Results:** It was found that most of the students (71.9%) felt comfortable with technology-based education, and 45.9% felt less motivated to follow online education. A statistically significant difference was found between 4th and 5th grade students who thought that they missed their educational experiences due to the pandemic and that face-to-face compensation programs should be made for some of the lessons ( $P < .05$ ).

**Conclusion:** The data show that most of the students have a positive attitude towards education using the online system and technology.

**Keywords:** COVID-19, dental students, online learning

## ÖZ

**Amaç:** COVID-19 salgını ile ilişkili kısıtlamalar dişhekimliği öğrencilerinin klinik eğitimlerinin askıya alınması ve uzaktan öğrenme yöntemlerine geçilmesine sebep olmuştur. Bu çalışmanın amacı, COVID-19 pandemisinin stajyer dişhekimliği öğrencileri üzerindeki etkisini araştırmak ve öğrencilerin çevrimiçi eğitime bakış açılarını değerlendirmektir.

**Yöntemler:** Çalışmamızda Marmara Üniversitesi Diş Hekimliği Fakültesi'nde öğrenim gören 75 4. ve 60 5. sınıf öğrencisine Google Forms kullanılarak katılımcıların uzaktan eğitim/çevrimiçi eğitim ile ilgili tutum ve algılarına ilişkin 7 sorudan oluşan online anket uygulanmıştır. İstatistiksel analiz için IBM SPSS Statistics 25.0 (IBM SPSS, Türkiye) programı kullanılmıştır.

**Bulgular:** Öğrencilerin çoğunun (%71.9) teknoloji tabanlı eğitimle kendini rahat hissettiği, %45.9'unun uzaktan eğitimi takip etmede daha az motive olmuş hissettiği saptanmıştır. 4. ve 5. Sınıf öğrencileri arasında pandemi nedeniyle eğitim deneyimlerini kaçırdığını ve derslerin bir kısmı için yüz yüze telafi programlarının yapılması gerektiğini düşünen öğrenciler arasında istatistiksel olarak anlamlı fark bulunmuştur ( $P < .05$ ).

**Sonuç:** Veriler, öğrencilerin çoğunun çevrimiçi sistem ve teknoloji kullanılarak yapılan eğitime karşı olumlu tutum sergilediklerini göstermektedir.

**Anahtar Kelimeler:** COVID-19, dişhekimliği öğrencileri, çevrimiçi eğitim

## INTRODUCTION

The COVID-19 epidemic has disrupted classes at a number of institutions, particularly in medical and dentistry schools, where practical instruction is the routine. To ensure the safety of students, instructors, and patients, face-to-face sessions have been suspended in numerous countries, including Turkey. Current technology has made electronic learning (e-learning/online education) the major way of teaching the curriculum to decrease the impact of the COVID-19 epidemic on the educational process.<sup>1</sup> Online education is defined as the use of information technology to improve educational quality.<sup>1,2</sup>

For about a year, online teaching has been widely used in the training of undergraduate and graduate students for theoretical courses in dental faculties. Accessibility, suitable techniques, course material, and assessment criteria all play a role in the effectiveness of online education. E-learning, like any other

teaching method, has benefits and drawbacks for both students and teachers.<sup>2-4</sup> Aside from the epidemiological advantages of online schooling during the COVID-19 pandemic, additional advantages worth highlighting include lower costs and more access to materials, regardless of place or time.<sup>5-7</sup> Other disadvantages of online classrooms include internet access difficulties, poor internet connection quality, and participants' lack of digital skills. Some factors, such as schedule flexibility, might be a hindrance, especially for students who struggle with self-control.<sup>8-11</sup>

In our country, education processes in the field of dentistry have gained an online dimension with the COVID-19 pandemic.<sup>12,13</sup> This change included postgraduate education processes as in undergraduate education, and face-to-face education at all levels was suspended in dentistry faculties as of mid-March 2020, and trainings and exams were continued online.<sup>12</sup> During the COVID-19 pandemic process, it has been a matter of debate whether the theoretical courses were applied online and whether they were as effective as face-to-face training.<sup>14-17</sup> Practical training, which forms the basis of clinical education of dentistry students, are important factors in all education processes, especially patient follow-up and case-based learning. In a study evaluating this new situation brought about by the COVID-19 pandemic, a questionnaire was applied to a total of 301 dentistry students, and it was determined that 44.2% of the 301 students who participated preferred distance/online education to in-class education.<sup>18</sup> Another research in Poland found that the major benefits of online learning were ongoing access to online resources (69%), studying at one's own speed (64%), and a pleasant atmosphere (54%). The biggest drawbacks, according to the majority of responders, are a lack of connection with patients (70%) and technical issues with computer technology equipment (54%). Moreover, online learning was less successful than face-to-face learning in terms of improving abilities, despite the fact that there was no statistical difference in opinions on the potential of the learning technique to gain knowledge.<sup>12</sup>

Against the potential of recurrence of pandemics or other emergencies that require an immediate transition to the online learning process, it is very important to examine and evaluate online education experiences in order to better prepare and adapt to these processes. The purpose of this survey study is to evaluate the perspectives of dental students on the situations brought about by the pandemic process and their views on online theoretical and clinical training.

## MATERIAL AND METHODS

An online survey was conducted consisting of 7 questions using Google Forms and circulated among 75 (55.6%) 4th and 60 (44.4%) 5th grade students at Marmara University, Faculty of Dentistry. The survey consisted of questions regarding participants' attitudes toward online education.

### Statistical Analysis

For statistical analysis, IBM SPSS Statistics 25.0 (IBM Corp., USA) is performed. In addition to descriptive statistical approaches (mean, standard deviation, frequency), the Chi-Square test was applied to investigate qualitative data, with significance determined at the  $p < 0.05$  level.

## RESULTS

The study was conducted with a total of 135 students, 47 (34.8%) males and 88 (65.2.9%) females. The average age of students is  $23.28 \pm 1.22$ .

The majority of 4<sup>th</sup> grade participants (81.3%) lost educational opportunities as a result of the lockdown, which was considerably greater than the 5<sup>th</sup> grades ( $p < 0.05$ ). More than half of students, particularly fifth-year students (68.3%), believe that online assessment is an useful way to evaluate. Furthermore, 41.3 % of fourth-grades are engaged and inspired to continue with remote e-learning. In our study, 60% of fifth-grades prefer online lectures to face-to-face lectures, and the majority of fourth- and fifth-grades are comfortable with technology-based education. Significantly higher percentage of 4<sup>th</sup> year (46,7%) compared to 5<sup>th</sup>

Table 1. Evaluation of participants answers among grades

		Grade					Gender					
		4 <sup>th</sup> grade		5 <sup>th</sup> grade		Total	Male		Female		P value	
		N	%	N	%	%	N	%	N	%		
1. Do you believe the COVID-19 epidemic caused you to lose out on educational opportunities?	Yes	61	81,3%	37	61,7%	72,6 %	,037*	28	59,6%	70	79,5%	,046*
	No idea	1	1,3%	1	1,7%	1,5 %		1	2,1%	1	1,1%	
	No	13	17,3%	22	36,7%	25,9 %		18	38,3%	17	19,3%	
2. Do you believe online examination/test is an useful way to assess students?	Yes	43	57,3%	41	68,3%	62,2%	,159	29	61,7%	55	62,5%	,822
	No idea	11	14,7%	3	5,0%	10,4 %		4	8,5%	10	11,4%	
	No	21	28,0%	16	26,7%	27,4 %		14	29,8%	23	26,1%	
3. Do you think that clinical / practical cases presented in online education have a positive value on your education?	Yes	44	58,7%	45	75,0%	65,9%	,104	31	66,0%	58	65,9%	
	No idea	12	16,0%	4	6,7%	11,9%		5	10,6%	11	12,5%	,935
	No	19	25,3%	11	18,3%	22,2%		11	23,4%	19	21,6%	
4. Did following up with remote e-learning make you feel more involved and motivated?	Yes	31	41,3%	26	43,3%	42,2%	,523	18	38,3%	39	44,3%	,077
	No idea	11	14,7%	5	8,3%	11,9%		7	14,9%	9	10,2%	
	No	33	44,0%	29	48,3%	45,9%		22	46,8%	40	45,5%	
5. Do you prefer online classes to in-person classes?	Yes	37	49,3%	36	60,0%	54,1%	,309	24	51,1%	49	55,7%	,077
	No idea	12	16,0%	5	8,3%	12,6%		10	21,3%	7	8,0%	
	No	26	34,7%	19	31,7%	33,3%		13	27,7%	32	36,4%	
6. Do you think all of this technology-based schooling is beneficial for you?	Yes	54	72,0%	43	71,7%	71,9 %	,717	39	83,0%	58	65,9%	,096
	No idea	6	8,0%	7	11,7%	9,6 %		2	4,3%	11	12,5%	
	No	15	20,0%	10	16,7%	18,5 %		6	12,8%	19	21,6%	
7. When the COVID-19 pandemic is over, do you think face-to-face compensation programs should be made for some of the lectures?	Yes	35	46,7%	15	25,0%	37,0 %	,013*	12	25,5%	38	43,2%	,084
	No idea	10	13,3%	6	10,0%	11,9 %		5	10,6%	11	12,5%	
	No	30	40,0%	39	65,0%	51,1 %		30	63,8%	39	44,3%	

Chi square test  $p < 0.05$

year dental students (25%) think that face-to-face compensation programs should be made for some of the lectures ( $p < 0.05$ ).

Of 135 students, 79.5 % claimed they lost educational opportunities as a result of the lockdown, which was substantially greater than male students ( $p < 0.05$ ). More than half of students, especially female students (62.5 %), believe that online assessment is an useful way to evaluate. Additionally, 44.3 % want to continue their education through remote e-learning, and the majority of female and male students feel comfortable with technology-based education (Table 1).

## DISCUSSION

The COVID-19 outbreak has caused in major university closures throughout the world, affecting millions of students. To keep academic courses going while reducing congestion and the risk of illness spreading, teaching and learning activities were abruptly converted to virtual modalities. While remote access is especially important during the COVID-19 epidemic, it may also save money on lodging and transportation in other situations.<sup>1,19,20</sup> Learning materials can be promptly supplied to students, standardized, and updated if necessary, owing to e-learning.<sup>21</sup>

Amir et al.<sup>18</sup> evaluated the student viewpoint of face to face and online learning during the COVID-19 lockdown in the undergraduate dentistry studies program. A total of 301 students took part in the survey after receiving an online questionnaire. Student preferences were impacted by the length of their studies. When compared to their seniors, a higher percentage of first-year students selected distance learning ( $p < 0.001$ ). For group discussions, students preferred classroom learning since remote learning made communication more difficult and gave less learning experience. Despite the fact that they felt distant learning provided a more efficient learning approach (52.6 %), more time to study (87.9%), and more time to analyze study materials, just 44.2 % chose it over classroom learning (87.3%). In our study, 49.3% of 4<sup>th</sup> grade and 60.0% of 5<sup>th</sup> grade students preferred distance learning over face to face learning. Moreover 57.3% of 4<sup>th</sup> and 68.3% of 5<sup>th</sup> grade students and 61.7% of males and 62.5% of females in our research think that online assessment is an ideal choice for evaluation. This finding was lower than those of previous studies comparing online and conventional learning techniques, which found a greater preference for remote learning over traditional methods.<sup>22,23</sup>

During COVID-19, Özdede and Şahin<sup>24</sup> assessed the perspectives and anxiety levels of dentistry students. Students from a dentistry faculty completed a questionnaire that included COVID-19 and online education opinions. The survey included 143 preclinical and 106 clinical students. With the change to face-to-face education, the majority of students (81.1%) expressed anxiety that lessons would be held in groups. The majority of the participants (69.9%) said that the prospect of graduating late makes them nervous.

Hattar et al.<sup>25</sup> examined the influence of quarantine on dental graduates' self-perceived readiness and the efficacy of online education from the perspective of students. A response rate of 72% was achieved in the survey. As a result of the lockout, the majority of students (77%) missed out on educational opportunities. More than half said they were less inspired to continue performing remote e-learning and that online evaluation isn't a suitable way to assess students. Online group discussions were useful to a large majority of students (66%), and 67 % of students preferred online lectures over theatrical lectures. The quarantine, according to the majority of students, especially 5<sup>th</sup> year students (78.7%) ( $p < 0.001$ ), increased their collaboration with their peers.

The two methods of presenting material to students are self-directed and instructor-led learning. Self-directed e-learning empowers students to take charge of their own learning. Peine et al.<sup>26</sup> recently discovered that self-directed e-learning outperforms traditional face-to-face learning. Another research looked at how students felt about online classrooms throughout the epidemic.<sup>1,27-29</sup> Learning from actual patients in a clinical context is critical for medical education, and online learning cannot entirely replace it. Whereas, in our study 58,7% of 4<sup>th</sup> grades and 75,0% of 5<sup>th</sup> grades stated that clinical / practical cases presented in online education have a positive value on their education.

Koçak Büyükdere<sup>30</sup> looked into dentistry students' learning patterns in order to discover teaching techniques using two distinct learning styles and to see if the learning type changed with the clinical training. A total of 207 students participated in the study and the author reported that in both preclinic and clinic group the ideal learning style is the connection of the active experimental and abstract conceptual construction.

E-learning needs a strong internet connection as well as the appropriate software.<sup>31-33</sup> Before and throughout an online course, students and lecturers should be familiar with the equipment. In a study by Samra et al.<sup>34</sup> most of the participants highlighted a typical disadvantage as the loss of connection during classes owing to poor or inconsistent network availability and interruptions. In our survey, the majority of 4<sup>th</sup> and 5<sup>th</sup> grade children felt at ease with all of this technology-based teaching.

Aside from the apparent advantages, remote learning has significant drawbacks. Distraction, complex technology, restricted social connection, and greater difficulty in staying in contact with teachers are just a few of the factors that might sabotage distance learning's effectiveness.<sup>35</sup>

Our study had some limitations. The results of this study revealed key insights that will help to enhance and create learning techniques in the future. However, there were several limitations to this investigation. For starters, the study's generalizability was hampered by the use of data from a single university and for only intern dental students. Second, while students were invited to participate in this study, it was entirely optional. Future studies from a broader viewpoint are required.

## CONCLUSION

The impact of the epidemic on the whole educational system was unexpected and dramatic. Due of the short notice, we were unable to provide traditional education and were left with few resources and alternatives. Yet, the findings showed that, despite certain obstacles, undergraduate dentistry students were able to adjust to new remote learning methods and agreed that distance learning was more efficient than classroom learning.

**Ethics Approval:** The study protocol of this study was approved by the Marmara University Faculty of Medicine Non-Interventional Clinical Research Ethics Committee with on 02.07.2021 with protocol number 09.2021.819.

**Peer-review:** Externally peer-reviewed.

**Author Contributions:** Concept – G.K., F.N.P.; Design – G.K., F.N.P.; Supervision – G.K., F.N.P.; Resources – G.K., F.N.P.; Materials – G.K., F.N.P.; Data Collection and/or Processing – G.K., F.N.P.; Analysis and/or Interpretation – G.K., F.N.P.; Literature Search – G.K., F.N.P.; Writing Manuscript – G.K., F.N.P.; Critical Review – G.K., F.N.P.

**Conflict of Interest:** The authors have no conflicts of interest to declare.

**Financial Disclosure:** The authors declared that this study has received no financial support.

**Etik Komite Onayı:** Bu çalışma için etik komite onayı Marmara Üniversitesi'nden (Tarih: 02.07.2021 Protokol No: 09.2021.819) alınmıştır.

**Yazar Katkıları:** Fikir – G.K., F.N.P.; Tasarım – G.K., F.N.P.; Denetleme – G.K., F.N.P.; Kaynaklar – G.K., F.N.P.; Malzemeler – G.K., F.N.P.; Veri Toplanması ve/veya İşlenmesi – G.K., F.N.P.; Analiz ve/veya Yorum – G.K., F.N.P.; Literatür Taraması – G.K., F.N.P.; Yazıyı Yazan – G.K., F.N.P.; Eleştirel İnceleme – G.K., F.N.P.

**Hakem Değerlendirmesi:** Dış bağımsız.

**Çıkar Çatışması:** Yazarlar çıkar çatışması bildirmemişlerdir.

**Finansal Destek:** Yazarlar bu çalışma için finansal destek almadıklarını beyan etmişlerdir.

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