



Opinions of Students in the Field of Health on Distance Education During the COVID-19 Pandemic: A Cross-Sectional Study

COVID-19 Pandemi Sürecinde Sağlık Alanında Öğrenim Gören Öğrencilerin Uzaktan Eğitime Yönelik Görüşleri: Kesitsel Bir Çalışma

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ABSTRACT

Objective: It is important to determine the opinions and preferences of students about distance education as its use is becoming more and more prevalent because of the Coronavirus disease-19 (COVID-19) pandemic. It was aimed to determine the opinions of students in the field of health about distance education during the COVID-19 pandemic.

Methods: This was a cross-sectional, descriptive study which was conducted at the Faculty of Health Sciences of a foundation university in İstanbul. The data were obtained from 476 students who were studying at the Faculty of Health Sciences of a university between June and July 2021, using a Student Information Form and Student Opinions on Distance Education Survey.

Results: When asked their opinions on distance education, most described that face-to-face education was more useful than distance education (65.1%) and that having practical lessons with distance education negatively affected their learning (61.1%). Conversely, most of the students expressed that they could listen to the parts of the lessons they did not understand again (93.1%), could listen to the lessons they missed (90.3%), and that distance education provided them with the convenience of taking lessons wherever internet access was available (76.7%).

Conclusion: The results indicated that students did not have considerable problems during distance education, they benefited

ÖZ

Amaç: Koronavirüs hastalığı-19 (COVID-19) pandemisi nedeniyle uzaktan eğitim kullanımı yaygınlaşırken öğrencilerin görüşlerini ve tercihlerini belirlemek önemlidir. Çalışmada, sağlık alanında öğrenim gören öğrencilerin COVID-19 pandemisi sürecinde uzaktan eğitime ilişkin görüşlerinin belirlenmesi amaçlandı.

Yöntemler: Tanımlayıcı ve kesitsel nitelikteki bu çalışmanın verileri Haziran-Temmuz 2021 tarihleri arasında İstanbul'da bir üniversitenin sağlık bilimleri fakültesinde öğrenim gören 476 öğrenciden toplandı. Araştırma verileri, Öğrenci Bilgi Formu ve Öğrencilerin Uzaktan Eğitime Yönelik Görüşlerini Değerlendirme Formu kullanılarak elde edildi.

Bulgular: Öğrencilerin yaş ortalaması 20,62±2,21 idi. Öğrenciler çoğunlukla kadın (%86,8), 2. sınıfta (%33,2) ve hemşirelik ve ebellek bölümlerinde okuyan (%39,9) öğrencilerden oluşmakta idi. Uzaktan eğitimle ilgili görüşleri sorulduğunda, çoğunluğu yüz yüze eğitimin uzaktan eğitimden daha yararlı olduğunu (%65,1) ve uygulamalı derslerin uzaktan eğitim ile yapılmasının öğrenmelerini olumsuz etkilediğini (%61,1) belirtmiştir. Bununla birlikte öğrencilerin büyük bir çoğunluğu derslerde anlamadığı yerleri tekrar dinleyebildiğini (%93,1), katılmadığı dersleri dinleme imkanı bulunduğunu (%90,3) ve internet erişiminin olduğu her yerde derslere girebilme kolaylığı sunduğunu (%76,7) ifade etmişlerdir.

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ABSTRACT

from the advantages of distance education and were generally satisfied with it. In relation to the problems experienced during the pandemic, we recommend to take measures especially for applied lessons, to continue to benefit from the advantages of distance education by combining it with formal education in appropriate lessons, and to make necessary improvements by evaluating the opinions of students on a departmental basis.

Keywords: COVID-19, distance education, satisfaction, students

ÖZ

Sonuç: Öğrencilerin uzaktan eğitim sırasında önemli düzeyde problem yaşamadıkları, uzaktan eğitimin avantajlarından yararlandıkları ve uzaktan verilen eğitimden genel olarak memnun oldukları görülmektedir. Bu süreçte yaşanan sorunlarla ilişkili olarak özellikle uygulamalı derslere yönelik önlemlerin alınması, uzaktan eğitimin sadece kriz dönemlerinde uygulanan bir yöntem olarak görülmemeyip uygun olan derslerde örgün öğretim ile birleştirilerek avantajlarından yararlanmaya devam edilmesi ve bölüm bazında öğrenci görüşlerinin değerlendirilerek gerekli iyileştirmelerin yapılması önerilir.

Anahtar Sözcükler: COVID-19, uzaktan eğitim, memnuniyet, öğrenciler

Introduction

The Coronavirus disease-19 (COVID-19) pandemic resulted in substantial changes worldwide with its impacts on economy, social life, and education and especially on the health system (1). Countries had to take measures to contain the spread of the virus and to protect public health. The measures taken in education during the pandemic affected all levels of the education system, from pre-school to higher education (1,2). Closing schools to prevent the spread of infectious diseases by breaking the chain of transmission in children and hence in the community is often thought of as an option to contain flu epidemics (3). Indeed, many countries decided to temporarily close schools, universities and other educational institutions during the COVID-19 pandemic (4,5). Academic institutions, like many others, adapted all lectures, meetings and other face-to-face seminars to online teaching to ensure their and students' safety (6,7). They proceeded to develop strategies to explore this new way of teaching, facilitate adaptation to changes, meet new emerging needs, and support educators and students to work with new technologies (8).

Distance education had to be implemented rapidly to manage the process effectively and to prevent students from experiencing problems such as delayed graduation and lost semester, both in our country and worldwide (9,10). Besides providing several advantages such as saving of time and space and the opportunity to review the lessons and reinforce learning, it caused considerable problems for teachers, students and administrators (11,12). Increased costs for schools and universities, weak infrastructure as well as unfamiliar problems such as inadequate digital teaching opportunities surfaced as barriers to this rapid transition. Some personal and professional problems also occurred among students and educators as adapting to the sudden transition to distance education required extra effort (13,14). In particular, the educators had difficulty transferring the lessons in the curriculum they normally gave face-to-face to online format, finding alternative methods for applied lessons, and measuring and evaluating learning (8).

The advent of COVID-19 required schools to be innovative, flexible and respond quickly to maintain the education of students in the field of health because health sciences teaching required an education system based on theory and clinical practice and should support students' cognitive, sensory, and psychomotor skills (8). The target here is therefore not only to acquire clinical skills and theoretical knowledge and but also to advance the acquired skills. Students should develop effective cognitive skills and professional competence, communication, decision-making and teamwork skills they will require as they provide healthcare throughout their professional lives (15). The students trained in health schools must therefore be equipped with expert, qualified and qualified knowledge since healthcare provision will directly affect human health. The measures and initiatives the managers of healthcare institutions will take will be decisive in preventing the current problems from causing negative consequences in the future. Thus, determining the current problems in distance education can provide guidance in making the necessary improvements and revisions. This study was carried out to determine the opinions of students in the field of health about distance education during the COVID-19 pandemic.

Methods**Study Design, Setting and Sample**

This descriptive and cross-sectional study was carried out between June and July 2021. The study population covered all students (n=2518) attending classes at the Faculty of Health Sciences of a university in Istanbul. The minimum sample size was calculated as 224, with 95% confidence interval ($\alpha=0.05$) and $p=0.8$ for $\pm 5\%$ sampling error. The sample included 476 students who agreed to participate in the study.

Data Collection

The data were collected online by sending the data collection tools to the university e-mail addresses of the students via Google Forms. A letter describing the purpose and scope of the study was also sent to students' e-mail addresses. If willing to participate in

the research, they first gave their consent on the informed consent page and were then provided with access to the data collection tools. Students who answered all questions were considered for the research.

Student Information Form

This form, which was prepared by the researchers in line with the literature (16-18), consisted of 14 questions about the sociodemographic characteristics of students and their experiences with distance education during the pandemic.

Student Opinions on Distance Education Survey

This form was also created by researchers based on the literature information (17,19,20) to determine the opinions of students studying in the field of health on distance education. It included 35 questions in two parts: Negative Opinions on Distance Education (19 questions) and Positive Opinions on Distance Education (16 questions). The questions in the form were answered as “yes”, “no” or “partly”.

Ethical Considerations

The permission of the COVID-19 Scientific Research Evaluation Commission under the Ministry of Health, General Directorate of Health Services was obtained before starting collecting data. In addition, ethical approval was given by the Biruni University Ethics Committee on 21 May 2021 (decision no: 2021/51-24).

Statistical Analysis

Statistical analysis were performed using the SPSS 23 software package. Descriptive statistics (percentage, mean, standard deviation) were used to evaluate the data, and the chi-square test was used for inter-group comparisons. Statistical significance was set at $p \leq 0.05$.

Results

Their mean age was 20.62 ± 2.21 . The majority were female (86.8%) and 2nd year students (33.2%). Of the students 39.9% were studying in nursing and midwifery departments and 83.6% were living with their families (Table 1).

Most of them used computers while attending online lessons (74.4%) and did not have any problems with internet access (55.7%). Of them 34.2% had no difficulty in understanding the theoretical lessons, 46.6% participated in the laboratory lessons face to face, 38.7% did clinical practice and 48.3% had difficulties in understanding practical lessons. Of them 50.6% deemed the means the university offered to access distance education lessons sufficient, most (44.7%) did not want distance education to continue after the pandemic. Students reported that they were generally satisfied (49.1%) that the lessons were taught via distance education (Table 2).

Their negative opinions about distance education were “Face-to-face education is more useful than distance education” (65.1%), “Applied lessons given with distance education negatively affect my learning” (61.1%) and “I think I am more successful in face-to-face training” (55.5%), respectively. Their positive opinions

about distance education were “I have the opportunity to listen to the parts that I missed or did not understand during the lessons” (93.1%), “I have the opportunity to listen to the lessons if I miss them.” (90.3%) and “I can attend lessons wherever there is internet access” (76.7%), respectively (Table 3).

There was a significant difference between the students' grade and their satisfaction with the distance education provided ($p < 0.01$). 1st year students were more satisfied with distance education compared to the 2nd, 3rd and 4th year students. No significant difference was found between the students' age, gender, department, and their satisfaction with distance education ($p > 0.05$) (Table 4). There was a significant difference between students' gender and their opinions about the continuation of distance education after the pandemic ($p < 0.05$). Male students' opinions were more in favour of continuation of distance education after the pandemic compared to the female students. No significant difference was observed between students' age, grade and department and their views on the continuation of the lessons with distance education ($p > 0.05$).

Discussion

Natural disasters, biological problems and wars with their local and global negative impacts on human life have always existed

Table 1. Descriptive characteristics of students (n=476)

	Mean \pm SD	Min-max
Age	20.62 \pm 2.21	18-43
	n	%
Age group		
18-20 years	269	56.5
21 years and above	207	43.5
Gender		
Female	413	86.8
Male	63	13.2
Grade		
1 st year	124	26.1
2 nd year	158	33.2
3 rd year	127	26.7
4 th year	67	14.1
Department		
Nursing/midwifery	185	39.9
Physiotherapy and rehabilitation/ergotherapy	93	19.5
Child development	99	20.8
Speech and language therapy/audiology	53	11.1
Nutrition and dietetics	46	9.7
Where they lived		
With family	398	83.6
Dormitory	52	10.9
Friend's house	26	5.5

Min: Minimum, Max: Maximum, SD: Standard deviation

throughout history. It is important to make distance education systems more efficient in keeping with the contemporary technological developments, especially to offer new technical progresses for applied lessons, so that educational activities may be sustained should any of these occur. The current pandemic has provided an opportunity in the form of an inevitable experience to identify deficiencies and faults of the distance education system (21).

Having high satisfaction and successful experiences with distance education can contribute to developing a positive attitude towards distance education by enabling learning efficiency (22,23). In our study, students' most positive opinions on the Student Opinions on Distance Education Survey were "I have the opportunity to listen to the parts that I missed or did not understand during the lessons", "I have the opportunity to listen to the lessons if I miss them" and "I can attend lessons wherever there is internet access", respectively. The students also expressed

Table 2. Students' experiences with distance education (n=476)

	n	%
The device you used to take online lessons		
Computer	354	74.4
Smart phone	108	22.7
Tablet	14	2.9
Did you have internet access problems where you lived?		
Yes	62	13.0
No	265	55.7
Partly	149	31.3
Did you have difficulty in understanding the lesson when the theoretical lessons were given by distance education?		
Yes	151	31.7
No	163	34.2
Partly	162	34.0
Did you participate in person in the laboratory practice during the pandemic?		
Yes	222	46.6
No	104	21.8
Partly	41	8.6
I don't have any applied lessons	109	22.9
Did you do clinical practice during the pandemic?		
Yes	184	38.7
No	170	35.7
I don't have a clinical practice lesson	122	25.6
Did you have difficulty in understanding the lesson when the applied lessons were given by distance education?		
Yes	230	48.3
No	118	24.8
Partly	128	26.9
Did you find the opportunities offered by your university to the distance education lessons sufficient?		
Yes	241	50.6
No	77	16.2
Partly	158	33.2
Would you like the distance education to continue after the pandemic?		
Yes	140	29.4
No	213	44.7
Partly	123	25.8
In general, were you happy that the lessons were given by distance education?		
Yes	234	49.1
No	126	26.5
Partly	116	24.4

Table 3. Student Opinions on Distance Education Survey (n=476)

Negative Opinions on Distance Education		Yes		Partly		No	
		n	%	n	%	n	%
1.	I am having system-related problems in accessing and during lessons.	189	39.7	116	24.4	171	35.9
2.	I find it difficult to listen to and understand the lessons.	187	39.3	88	18.5	201	42.2
3.	I don't believe that I have learned the lessons enough.	242	50.8	95	20.0	139	29.2
4.	Applied lessons given with distance education negatively affect my learning.	291	61.1	79	16.6	106	22.3
5.	I think I am more successful in face-to-face training.	264	55.5	138	29.0	74	15.5
6.	I am not happy with the continuation of distance education.	215	45.2	101	21.2	160	33.6
7.	I am having problems reaching the lecturer who is conducting the lesson.	86	18.1	125	26.3	265	55.7
8.	There are some parts that I do not understand due to the limited time of the lesson.	154	32.4	87	18.3	235	49.4
9.	I am having problems following the lessons.	191	40.1	80	16.8	205	43.1
10.	Face-to-face education is more useful than distance education.	310	65.1	104	21.8	62	13.0
11.	I'm having problems because I don't have a computer.	76	16.0	44	9.2	356	74.8
12.	I cannot exchange information about lessons because distance education prevents me from interacting with my friends.	235	49.4	60	12.6	181	38.0
13.	I find it very boring to be in front of the computer all the time.	282	59.2	70	14.7	124	26.1
14.	Distance education prevents me from actively participating in lessons.	236	49.6	57	12.0	183	38.4
15.	I'm having problems accessing resources for the given assignments.	134	28.2	100	21.0	242	50.8
16.	Conducting applied lessons with distance education does not negatively affect my learning.	139	29.2	92	19.3	245	51.5
17.	I am having problems in clinical practice.	131	27.5	168	35.3	177	37.2
18.	Distance education prevents me from being active enough in clinical practice.	211	44.3	128	26.9	137	28.8
19.	I prefer face-to-face exams.	112	23.5	124	26.1	240	50.4
Positive Opinions on Distance Education		Yes		Partly		No	
		n	%	n	%	n	%
1.	I can view all my lessons live.	313	65.8	76	16.0	87	18.3
2.	I have the opportunity to listen to the lessons if I miss them.	430	90.3	22	4.6	24	5.0
3.	I have the opportunity to listen to the parts that I missed or did not understand during the lessons.	443	93.1	18	3.8	15	3.2
4.	I can listen to my lessons in a comfortable environment at home.	342	71.8	71	14.9	63	13.2
5.	I can attend lessons wherever there is internet access.	365	76.7	43	9.0	68	14.3
6.	Although I have technical problems in accessing the lessons, I can solve the problem immediately by receiving technical support (supportive feedback).	237	49.8	133	27.9	106	22.3
7.	The camera and sound quality have been sufficient in technical terms in the lessons I have viewed.	302	63.4	101	21.2	73	15.3
8.	Thanks to distance education, I do not waste my time.	295	62.0	78	16.4	103	21.6
9.	I can easily communicate with the lecturers of the lessons when necessary.	277	58.2	131	27.5	68	14.3
10.	Distance education is more suitable for me due to the intensity of my lessons.	214	45.0	112	23.5	150	31.5
11.	I think distance education is more effective and efficient than face-to-face education.	112	23.5	124	26.1	240	50.4
12.	I feel more comfortable in the distance education process.	263	55.3	86	18.1	127	26.7
13.	I have improved my knowledge and skills in computer use.	322	67.6	72	15.1	82	17.2
14.	I don't have any problems preparing my assignments.	268	56.3	105	22.1	103	21.6
15.	Distance education is more suitable for me as I have to work part-time.	176	37.0	95	20.0	205	43.1
16.	I find the distance education method more economical.	280	58.8	90	18.9	106	22.3

Table 4. Comparison of students' satisfaction with distance education by their socio-demographics (n=476)

	Satisfaction with distance education						Test value U/ χ^2	p
	Yes		No		Partly			
	n	%	n	%	n	%		
Age								
18-20 years	133		63		73		14.129	0.127
21 years and above	101		63		43			
Gender								
Female	196		111		106		14.184	0.123
Male	38		15		10			
Grade								
1 st year	78		18		28		219.351	0.004*
2 nd year	73		43		42			
3 rd year	50		44		33			
4 th year	33		21		13			
Department								
Nursing/midwifery	100		34		51		214.590	0.068
Physiotherapy-ergotherapy	47		31		15			
Child development	47		30		22			
Speech and language, therapy/audiology	22		17		14			
Nutrition	18		14		14			

*p<.01

as positive comments that they improved their knowledge and skills in computer use, were able to save time, found distance education more economical, and had the opportunity to listen to lessons in a comfortable environment at home. The topics in which students expressed the most negative opinions about distance education were "Face-to-face education is more useful than distance education", "Applied lessons given with distance education negatively affect my learning" and "I find it very boring to be in front of the computer all the time", respectively. In a similar study by Dinç and Erdoğan (24) evaluating the opinions of nursing students regarding distance education during the COVID-19 pandemic, the most important problems the students in distance education had were technology-related and technical problems, problems with lessons and exams, and personal problems related to learning types. Students expressed the possibility of re-accessing the lessons as an important advantage and the inability to conduct clinical/laboratory practice and the ineffectiveness of the lessons as the most important disadvantages of distance learning (24).

Students' attitudes towards distance education during the COVID-19 pandemic appeared to be positive in some studies in the literature (17,25-27). Students described it as advantageous given the circumstances caused by the pandemic, but they also believed that the disadvantages of distance education posed a serious problem for educational activities (28,29). Students found distance education advantageous because it was a precaution against the risk of face-to-face education, offered a time-space advantage and provides equal opportunity in education but also considered it disadvantageous because it eliminated the

advantages of face-to-face education (effective communication, social environments, obligation to attend lessons, effective learning) and physical conditions were not sufficient (21). The students believed that online learning limited the consequences of social contact, saved money and energy in transportation to university, and provided an easier learning method, but they also mentioned disadvantages such as the need for technical tools, absence of direct contact with the lecturer/staff, difficulty to provide a quiet environment at home while taking online lessons and more absenteeism compared to traditional education (30). The majority of students thought that their social life came to a halt temporarily during the pandemic. They wanted to follow their lessons remotely due to the pandemic but believed that the exams in the distance education system did not help improve their competencies and they did not want distance education to continue under normal conditions (28). The students found distance learning inefficient for practical lessons and efficient for theoretical lessons, and they were not very content with it due to the lack of mutual communication. The lack of question-answer opportunity in distance education and problems in logging into the system caused negative reactions by the students, while positive reactions were about the opportunity to watch lessons again regardless of time and place (29). The problems that nursing students experience in distance education were related to the problems in the distance education infrastructure of the university, lack of face-to-face education, limited opportunities, and the mood and exam anxiety brought about by the pandemic (10). According to Yılmaz et al. (31), laboratory and practice limitations might negatively affect the efficiency of the lessons in transforming theoretical knowledge into skill in clinical practice lessons.

Students' opinions on distance education may depend on several factors such as the technological infrastructure facilities of the institutions, whether lecturers and students can use technology, educator interactions with students, and technical means or problems of the students. The technological infrastructure of the university where the study was conducted was suitable for distance education, which enabled a fast and successful transition to this process. Besides, synchronization of lessons, supportive attitudes of the lecturers and their openness to communication, and the ability of the institution managers to respond rapidly to these problems seemed to facilitate the process and contributed positively to student satisfaction.

In this study, the technological device the students used the most was computers. The studies conducted by Bakhov et al. (16), Kızıltepe and Kurtgöz (18) and Elfirdoussi et al. (32) obtained similar results. Some other studies, on the other hand, reported that smartphones were mostly used for online access during the COVID-19 pandemic (25,33). According to Şener et al. (34), nursing students could be distracted and lessons could be interrupted if they followed lessons with mobile phones, because of the smaller field of view compared to the computer and incoming messages and calls. Therefore, it is clearly important for students to log into online lessons from a computer for effective learning.

In our study, students stated that having practical lessons via distance education caused difficulties in understanding the lesson. The theoretical hours of the applied lessons were fully given online as part of the measures taken during the pandemic, but the students were required to be present during clinical practice and laboratory lessons were held face-to-face, although the hours were reduced in many departments to avoid negative consequences. This seemed to have somewhat relieved students' concerns about the application. Almahasees et al. (35) found in their study with faculty members and students that the majority of them preferred face-to-face education. In another study (36), the majority of students preferred the theoretical lessons to be conducted online whenever possible while they described face-to-face lessons as more beneficial in applied lessons. According to studies with nursing students, students regarded distance education methods as insufficient for laboratory and clinical applications, which were important components of nursing education (24,27). The reasons why students favoured face-to-face education included the advantages of instant feedback and more effective communication between students and teachers and the fact that certain skills were acquired in practical training. Although face-to-face education was mostly preferred in previous studies, distance education allowed the continuation of education and theoretical lessons (37). However, it was established during the pandemic that face-to-face education and clinical practices were indispensable in applied sciences. Online learning was implemented as a temporary alternative due to COVID-19 and was unlikely to replace face-to-face learning (35). Still, distance education is seen as a necessity in the age of information and technology with increasing prevalence of digitalization.

According to this study, there was a significant difference between the students' satisfaction with distance education with their grade years. The 1st year students were more satisfied with the distance education compared to 2nd, 3rd and 4th year students. This difference may be explained by the different knowledge level and set of skills that students at each grade level have. Durgun et al. (26) found different results in their study examining students' opinions on distance education where the Student Opinions on Distance Education Survey mean score was the lowest in the 1st and the highest in the 3rd year students, with a statistically significant difference between the mean scores of these two groups. This finding of the study was attributed to the fact that 1st year students had inadequate knowledge in both theoretical and applied lessons and might think that they would not feel competent when they moved to the next grade (26). Another study (38) on the experiences and opinions of higher education students on distance education during the COVID-19 epidemic also reported different results compared to this study: 1st year students found distance education less useful and less interesting than the students in other grade levels. Students in the 3rd and 4th years are more experienced than 1st and 2nd year students and know what is expected of them in terms of learning outcomes. Since 1st year students are at the beginning of a new education, they need to make more efforts to adapt to the learning process. The authors concluded that 1st and 2nd year students might need more support than the 3rd and 4th year students when switching to distance education (38). There were many studies in the literature showing that students' attitudes towards distance education did not differ significantly by their grade level (14,24,39).

In the current study, female and male students differed significantly in their opinions on whether lessons should still be via distance education after the pandemic: male students wanted distance education to continue after the pandemic more than female students. There was, however, no significant difference between students' satisfaction with distance education by age, gender and department variables. The results of the previous studies indicating that gender (14,26,39) and age (14) were not significantly correlated with distance education satisfaction were similar to the results of this study. On the other hand, there were also study results suggesting significant relationships between age (24,40), gender (40-42) and department (43) and student opinions on distance education unlike this study. Comparing students' views on distance education by gender, it was concluded that male students had more positive opinions on distance education (40,41,43). We are in the opinion that the higher level of satisfaction of male students can be explained by their higher technological literacy level than that of female students (42).

Study Limitations

The study was limited to the students who were studying at the faculty where the research was conducted and who agreed to participate in the research. Therefore, the results could not be generalized to the whole population. In addition, these findings were obtained from student self-reports and not all students

were included. The strength of the study was that it included the experiences from the beginning of the changes in the education system to normalization within the scope of the measures taken in the COVID-19 pandemic, and the use of the questionnaire that was prepared by the researchers after the pandemic. Previous related studies generally used data collection tools developed before COVID-19 and the studies were conducted while the pandemic was still ongoing.

Conclusion

Based on the study, the students did not experience significant problems with distance education during the COVID-19 pandemic and benefited from the advantages of distance education. They thought that face-to-face education was more beneficial than distance education during the pandemic, and that having practical lessons with distance education affected their learning negatively. A great majority of the students expressed that they had the opportunity to listen or repeat the lessons if they missed or when there were parts they did not understand, and that they could attend the lessons wherever there was internet access. Half of the participants deemed the means offered by the university for access to lessons sufficient. Most of them had difficulties in understanding the practical lessons with distance education and did not want the lessons to continue with distance education after the pandemic. The students participated more in laboratory lessons than clinical practice in this process. The 1st year students reported the most satisfaction with distance education, while male students wanted to continue distance education more than female students after the pandemic.

It is always important to be prepared for distance education for the sustainability of education. Also, establishing large-scale simulation laboratories for applied lessons, evaluating student opinions on a department basis, and continuing to benefit from the advantages of distance education may be important in increasing the quality of education and student satisfaction. We suggest that further studies be conducted on the students who received education during the pandemic to examine the opinions on the positive and negative aspects of distance education after graduation.

Ethics

Ethics Committee Approval: In addition, ethical approval was given by the Biruni University Ethics Committee on 21 May 2021 (decision no: 2021/51-24).

Informed Consent: Obtained.

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Authorship Contributions

Surgical and Medical Practices: G.K., A.K., N.K.B., Concept: G.K., A.K., N.K.B., Design: G.K., A.K., N.K.B., Data Collection or Processing: G.K., A.K., N.K.B., Analysis or Interpretation: G.K., A.K., N.K.B., Literature Search: G.K., A.K., N.K.B., Writing: G.K., A.K., N.K.B.

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References

1. Nicola M, Alsafi Z, Sohrabi C, Kerwan A, Al-Jabir A, Iosifidis C, et al. The socio-economic implications of the coronavirus pandemic (COVID-19): A review. *Int J Surg* 2020;78:185-93.
2. Mishra L, Gupta T, Shree A. Online teaching-learning in higher education during lockdown period of COVID-19 pandemic. *Int J Educ Res Open* 2020;1:100012.
3. Luca G, Kerckhove KV, Coletti P, Poletto C, Bossuyt N, Hens N, et al. The impact of regular school closure on seasonal influenza epidemics: a data-driven spatial transmission model for Belgium. *BMC Infect Dis* 2018;18:29.
4. Aristovnik A, Keržič D, Ravšelj D, Tomaževič N, Umek L. Impacts of the COVID-19 pandemic on life of higher education students: A global perspective. *Sustainability* 2020;12:8438.
5. Keskin M, Kaya DÖ. Evaluation of students' feedbacks on web-based distance education in the COVID-19 process. *İzmir Katip Çelebi University Faculty of Health Science Journal* 2020;5:59-67.
6. Amir LR, Tanti I, Maharani DA, Wimardhani YS, Julia V, Sulijaya B, et al. Student perspective of classroom and distance learning during COVID-19 pandemic in the undergraduate dental study program Universitas Indonesia. *BMC Med Educ* 2020;20:392.
7. Coman C, Țiru LG, Meseșan-Schmitz L, Stanciu C, Bularca MC. Online teaching and learning in higher education during the coronavirus pandemic: Students' perspective. *Sustainability* 2020;12:10367.
8. Şanlı D, Uyanık G, Avdal EÜ. Nursing education in the world during the COVID-19 Pandemic. *İzmir Katip Çelebi University Faculty of Health Science Journal* 2021;6:55-63.
9. Alvarez AV Jr, Corcuera LC. The webinar experiences of higher education instructors in the time of emergency remote education. *International Journal of Scholars in Education*. 2021;4:134-45.
10. Kürtüncü M, Kurt A. Problems of nursing students in distance education in the COVID-19 pandemia period. *Eurasian Journal of Researches in Social and Economics* 2020;7:66-77.
11. Belousova A, Mochalova Y, Tushnova Y. Attitude to distance learning of schoolchildren and students: Subjective assessments of advantages and disadvantages. *Educ Sci* 2022;12:46.
12. Wallace S, Schuler MS, Kaulback M, Hunt K, Baker M. Nursing student experiences of remote learning during the COVID-19 pandemic. *Nurs Forum* 2021;56:612-8.
13. Lassoued Z, Alhendawi M, Bashitilshaer R. An exploratory study of the obstacles for achieving quality in distance learning during the COVID-19 pandemic. *Educ Sc* 2020;10:232.
14. Şeker SA, Bayram A. Investigation of the relationship between the attitudes towards e-learning and perceived learning of nursing students during the COVID-19 pandemic period. *Journal of Nursing Effect* 2022;15:468-86.

15. Şendir M, Çelik S, Dişsiz M, Güney R, Kolcu M, Kabuk A, et al. A new approach in nursing education and practice: Integration of nursing education and practice. *JAREN* 2018;4:92-9.
16. Bakhov I, Opolska N, Bogus M, Anishchenko V, Biryukova Y. Emergency distance education in the conditions of COVID-19 pandemic: experience of Ukrainian universities. *Educ Sci* 2021;11:364.
17. Eren DÇ, Korkmaz M, Öz-Yıldırım Ö, Avcı İA. Investigation of attitude and satisfaction levels of nursing students to distance education during the Covid-19 pandemic process. *J Nursology* 2021;24:246-54.
18. Kızıltepe SK, Kurtgöz A. Determination of nursing students' attitudes and views towards distance learning during the COVID-19 pandemic process. *The Journal of International Social Research* 2020;13:558-66.
19. Genç SZ, Engin G, Yardım T. Postgraduate students' views related to application of distance education during the COVID-19 pandemic. *Educ Res* 2020;41:134-58.
20. Süt HK, Küçükaya B. The views of nursing students on distance education. *J Educ Res Nurs* 2016;13:235-43.
21. Ünlü H, Aktaş Ö, Büyüktaş B. Investigation of sports science students' attitudes and opinions towards distance education. *J Sport Sci Res* 2021;6:294-306.
22. Aguilera-Hermida AP, Quiroga-Garza A, Gómez-Mendoza S, Del Río Villanueva CA, Avolio Alecchi B, Avcı D. Comparison of students' use and acceptance of emergency online learning due to COVID-19 in the USA, Mexico, Peru, and Turkey 2021;26:6823-45.
23. Migocka-Patrzałek M, Dubińska-Magiera M, Krysiński D, Nowicki S. The attitude of the academic community towards distance learning: A lesson from a national lockdown. *The Electronic Journal of e-Learning* 2021;19:262-81.
24. Dinç S, Erdoğan E. New experiences in the COVID-19 pandemic: Student opinions on distance education. *Ordu University J Nurs Stud* 2022;5:385-92.
25. Chandrasiri NR, Weerakoon BS. Online learning during the COVID-19 pandemic: Perceptions of allied health sciences undergraduates. *Radiography (Lond)* 2022;28:545-9.
26. Durgun H, Can T, Avcı AB, Kalyoncuoğlu B. Nursing students' views on distance education and anxiety levels in Covid-19 process. *Journal of Nursing Effect* 2021;14:141-7.
27. Uysal N, Aydın, B, Ekici E. Nursing students' attitudes towards distance education in the Covid-19 pandemic process. *Journal of Higher Education and Science* 2022;12:228-33.
28. Aktaş Ö, Büyüktaş B, Gülle M, Yıldız M. Sports science students' attitudes towards distance education during isolation days caused by COVID-19 virus. *Sivas Cumhuriyet University Journal of Sport Sciences* 2020;1:1-9.
29. Ekiz MA. The views of physical education and sports school students about distance education in the quarantine period (A qualitative research). *Journal of Sport and Recreation Researches* 2020;2(Suppl 1):1-13.
30. Sindiani AM, Obeidat N, Alshdaifat E, Elsalem L, Alwani MM, Rawashdeh H, et al. Distance education during the COVID-19 outbreak: A cross-sectional study among medical students in North of Jordan. *Ann Med Surg (Lond)* 2020;59:186-94.
31. Yılmaz FK, Yücel H, Erim A, Sezgin E, Kunduracılar Z. What do the health sciences students think about distance education during COVID-19 pandemic? *The Journal of Academic Social Science* 2021;9:68-78.
32. Elfirdoussi S, Lachgar M, Kabaili H, Rochdi A, Goujdami D, El Firdoussi L. Assessing distance learning in higher education during the COVID-19 pandemic. *Educ Res Int* 2020.
33. Nafrees ACM, Roshan AMF, Baanu AN, Nihma MF, Shibly FHA. Awareness of online learning of undergraduates during COVID 19 with special reference to South Eastern University of Sri Lanka. *Journal of Physics: Conference Series* 2020;1712:1-10.
34. Şener Y, Taplak AŞ, Akarsu RH. Views and attitudes of nursing students towards online learning during COVID-19 pandemic. *Value in Health Sciences* 2022;12:137-46.
35. Almahasees Z, Mohsen K, Amin MO. Faculty's and students' perceptions of online learning during COVID-19. *Front Educ* 2021;6:638470.
36. Dios MTC, Charlo JCP. Face-to-face vs. e-learning models in the COVID-19 era: Survey research in a Spanish university. *Educ Sci* 2021;11:293.
37. Ramos-Morcillo AJ, Leal-Costa C, Moral-García JE, Ruzafa-Martínez M. Experiences of Nursing Students during the Abrupt Change from Face-to-Face to e-Learning Education during the First Month of Confinement Due to COVID-19 in Spain. *Int J Environ Res Public Health* 2020;17:5519.
38. Stevanović A, Božić R, Radović S. Higher education students' experiences and opinion about distance learning during the Covid-19 pandemic. *J Comput Assist Learn* 2021;37:1682-93.
39. Altuntaş-Yılmaz N. Investigation of students' attitudes towards applied distance education in the COVID-19 pandemic process in higher education institutions: Example of physiotherapy and rehabilitation department. *Necmettin Erbakan University Faculty of Health Sciences Journal*. 2020;3:15-20.
40. Çelik Ş, Avşar G. Investigation of student attitudes towards distance education applied in the process of COVID-19 pandemic in higher education institutions: an example of nursing department. *MAS JAPS* 2022;7:641-50.
41. Buluk B, Eşitti B. Evaluation of distance learning by tourism undergraduate students in the process of coronavirus (COVID-19). *Journal of Awareness* 2020;5:285-98.
42. Turkoğlu T. The attitudes of students at vocational schools formal education program on distance education course. *Electronic Journal of Vocational Colleges* 2015;4(Suppl):31-8.
43. Fidan M. Distance education students' attitudes towards distance education and their epistemological beliefs. *Hacettepe University Journal of Education* 2016;31:536-50.