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COVID-19 Pandemic: Effects on Students Receiving Education in the Field of Health of Distance Education

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ABSTRACT

Aim: The aim of this study is the evaluation of distance education system, the transition to which occurred suddenly due to coronavirus pandemic that affected the whole world, by students receiving education in the field of health.

Material and Methods: A questionnaire of 43 questions which was answered by 505 students studying at Bolu Abant İzzet Baysal University Faculty of Dentistry (FD), Faculty of Health Sciences (FHS), Faculty of Medicine (FM) and Vocational Health School (VS), where distance education has an important place, was analyzed with factor analysis. Socio-demographic data were expressed as numbers and percentage. In the evaluation of factors in terms of sociodemographic variables, Mann-Whitney U was used for gender, while Kruskal-Wallis test was used for the variables of education, school and way of access to distance education.

Results: 357 (70.69%) female and 148 (29.31%) male students participated in the study. In this context, significant differences were found in terms of students' gender and professional anxiety (p=0.030) and following courses online (p=0.001). In addition, significant differences were observed in terms of systemic infrastructure (p=0.007) and online course follow-up (p=0.029) by education level. No significance was found between the school students were attending and professional anxiety (p=0.101).

Conclusion: While students have positive views about distance education, the factors that affect their satisfaction vary. Although distance education is considered to be a good alternative in pandemic conditions, students prefer face-to-face education in terms of applied courses.

Keywords: COVID-19; pandemic; health; distance education.

COVID-19 Pandemisi: Uzaktan Eğitimin Sağlık Alanında Eğitim Gören Öğrenciler Üzerindeki Etkileri

ÖZ

Amaç: Tüm dünyayı etkisi altına alan koronavirüs salgını sebebiyle aniden geçilen uzaktan eğitim sisteminin sağlık alanında eğitim alan öğrenciler tarafından değerlendirilmesi amaçlanmıştır.

Gereç ve Yöntemler: Uygulamalı eğitimin önemli bir yer tuttuğu Bolu Abant İzzet Baysal Üniversitesi Diş Hekimliği Fakültesi, Sağlık Bilimleri Fakültesi, Tıp Fakültesi ve Sağlık Meslek Yüksekokulu'nda öğrenim gören 505 öğrenci tarafından cevaplandırılan 43 soruluk anket çalışması faktör analizi ile incelendi. Sosyo-demografik veriler sayı ve yüzde olarak ifade edildi. Faktörlerin sosyodemografik değişkenlere göre değerlendirilmesinde cinsiyet için Mann-Whitney U; eğitim, okul ve uzaktan eğitime erişim şekli için ise Kruskal-Wallis testleri kullanıldı.

Bulgular: Anket çalışmasına 357 (%70,69) kadın, 148 (%29,31) erkek öğrenci katıldı. Bu kapsamda; öğrencilerin cinsiyetleri ile mesleki kaygı (p=0,030) ve online ders takibi (p=0,001) bakımından anlamlı farklılıklar bulundu. Ek olarak eğitim düzeyine göre sistemik altyapı (p=0,007) ve çevrimiçi ders takibi (p=0,029) açısından anlamlı farklılıklar görülmüştür. Öğrencilerin okudukları okul ile mesleki kaygı arasında ise anlamlılık gözlenmedi (p=0,101).

Sonuç: Öğrencilerin uzaktan eğitime bakışları olumlu olmakla birlikte, memnuniyetlerini etkileyen faktörler değişmektedir. Her ne kadar pandemi koşullarında uzaktan eğitim iyi bir bir altenatif olarak düşünülse de uygulamalı dersler açısından öğrenciler yüz yüze eğitimi tercih etmektedirler.

Anahtar Kelimeler: COVID-19; pandemi; sağlık; uzaktan eğitim.

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INTRODUCTION

Viruses named "corona", which start with flu symptoms, are a large scale species that cause the formation of severe diseases such as "Middle East Respiratory Syndrome-(MERS)" and "Severe Acute Respiratory Syndrome-(SARS)" (1). This new species called coronavirus (COVID-19) was first seen in the Wuhan city of China towards the end of December 2019 (2,3). This virus, which has not been previously identified in humans, was identified on January 13, 2020 as a result of studies conducted on patients who showed symptoms such as cough, fever, shortness of breath, chest pain or pressure, fatigue, and joint pain (1,4). As it spread rapidly from person to person through droplets and spread to the world, it was declared as a pandemic by World Health Organization (WHO) on March 11, 2020 (5). In line with the recommendations of World Health Organization and the guidance of scientists, countries made various attempts to prevent the spread of the virus by taking a large number of precautions within their existing conditions. In this context, various precautions were taken such as social isolation, cancellation of national and international flights, suspension or cancellation of many activities (congresses, festivals, sports tournaments, etc.) and partial or full curfew (6).

Education sector is one of the institutions most affected by the pandemic after health sector. On March 16, 2020, education was suspended by the Council of Higher Education in our country (7) and as of March 23, 2020, face-to-face education was replaced by online education (8). The aim was to establish social distance during the pandemic period and to prevent the risk of transmission by ensuring that young people stayed at home (4,9).

In our country, universities with distance education unit implemented their educational activities by using their own infrastructure (7). There are many technologies available for distance education that allows education regardless of time and space (2). During this time, many universities switched to online mode by using platforms such as Blackboard, Microsoft Teams, Zoom, etc. (10). However, these technologies may cause many problems such as download errors, login problems, and problems related with sound and video (2). In addition to the problems that occur with these technological tools, it is also possible for individuals to experience individual problems. Issues such as decrease in student motivation, decreased attention, anxiety, the fact that online education content does not allow applied courses, lack of communication and experiencing difficulty in understanding goals also pose obstacles to online education (11,12). However, since social distance may continue in the future, increasing the quality of online education is very important (2). In addition, since it is possible that life after COVID-19 may not be as in the past, distance education may continue with face-to-face education. Due to the length of the pandemic and uncertainties in the possibility of reinfection, social distance may come to the agenda again. For this reason, educational institutions should be prepared to shift most of their curricula to digital online platforms and to change the structure and content of courses appropriately (10). Therefore, it is important to develop renewed communication technologies and digital learning practices (13).

The effects of COVID-19 pandemic on our society are deep especially for the health sector (14). During the pandemic period, the need for health professionals increased day by day. For this reason, it is important for students who complete their applied courses and internship with distance education due to COVID-19 process to gain a sense of owning the profession (15). It is clear that the distance education provided in this process will create problems in faculties that provide practice-oriented education such as faculties of education, dentistry, nursing and vocational health schools. The aim of this study is to find out the views of students studying in the field of health about distance education.

MATERIAL AND METHODS

Type of study

This study was planned as a descriptive study in line with quantitative research method in order to research the comments of students studying in the field of health about distance education.

Population and Sample of the Study

G*Power 3.1.9.7 program was used to compute the sample size. When the effect size was 0.90, the α value 0.05, and the β was 0.95, it was seen that the minimal sample size was 70. Population of the study was determined as 600 students studying at FM, FD, FHS, VS providing theoretical and applied education at Bolu Abant İzzet Baysal University during 2021-2022 academic year. Sample of the study consists of 505 students who agreed to participate in the study and who filled in the questionnaire completely.

Ethics Committee

Permission was taken from Bolu Abant İzzet Baysal University Faculty of Medicine Clinical Researches Ethics Committee (Date of decision: 14.09.2021 and number of decision: 2021/224).

Data Collection Tool

Data was collected with a distance education assessment questionnaire formed by the researchers in line with the purpose of the study which was conducted to find out the views of students receiving education in the field of health about continuing distance education due to COVID-19 pandemic. An informed consent explaining the purpose of the study to the participants was added to the questionnaire and the participants were told that they could participate in the study voluntarily. The first part of the questionnaire included socio-demographic questions such as gender, age, educational status, faculty/department, place of education and way of accessing distance education. The second part of the questionnaire consists of 43 items. This part includes questions about accessibility to distance education system, adequacy of systematic infrastructure of distance education, communication in distance education, access to course materials, focusing on the course, exam system, motivation and professional development. The participants were asked to state their degree of agreeing with the given expression in 5-likert type. Scoring of the Questionnaire was evaluated as "Strongly disagree", "Disagree", "Neutral", "Agree" and "Strongly agree".

Application of the Study

A message giving information about the study and the survey link was prepared on the digital survey platform called Google Forms on 22.05.2020. Link of the survey form was sent to students through a closed online communication program they used communicate. https://docs.google.com/forms/d/e/1FAIpQLScv65Jsqg_d9_CdeZS30eA9fsDT4TzDSNhXTXCOVppl2I9gWQ/viewform?usp=sf_link

Statistical Analysis

The data were analyzed by using IBM SPSS version 21.0 program (IBM Corp., N.Y., USA). The conformity of the sociodemographic data to the normal distribution was checked with the Shapiro-Wilk test. Descriptive statistics of the data are presented as n (%) and median (minimum-maximum) otherwise. Kaiser-Meyer-Olkin (KMO) sample adequacy and Bartlett Sphericity tests were used to find out whether the data were suitable for factor analysis. The factor analysis that was based on >1 Eigenvalue, the data were grouped under 6 headings related to the total factor scores. According to the Shapiro-Wilk test result, in the evaluation of data in terms of sociodemographic variables, Mann-Whitney U test was used for gender, while Kruskal-Wallis test was used for education, school and way of accessing distance education. Post-hoc analysis was made with Dunn-Bonferroni approach and adjusted p values were used;$p<0.05$ was accepted for statistical significance.

RESULTS

This section includes results obtained about the thoughts, problems and experiences of students studying in the field of health related with distance education. Table 1 shows the demographic information about the students who participated in the study. A total of 505 students receiving associate, undergraduate and graduate education at the faculties of dentistry, health sciences and medicine and vocational school of health participated in the study. 357 (70.69%) female and 148 (29.31%) male students participated in the survey. 82 (16.24%) of these students are associate degree students, while 413 (81.78%) are undergraduate students and 10 (1.98%) are graduate student.

The aim of the questions in the second part of the survey was the evaluation of educational activities carried out through distance education method during the COVID-19 pandemic process by students receiving theoretical and applied education in the field of health. Kaiser-Meyer-Olkin sample adequacy was found as 0.93 and p value for Bartlett Sphericity test was determined $p<0.001$. Exploratory Factor Analysis was performed to find out the structural validity of the scale used in the study. New independent variables were created according to the factor load values obtained as a result of factor analysis. These variables were named as perceptions on distance education, systematically infrastructure in distance education, efficiency of distance education, professional anxiety, perceptions on face-to-face education and following courses in distance education, respectively (Table 2).

Table 1. Socio-demographic characteristics of the students

Characteristics		n	%
Gender	Female	357	70.69
	Male	148	29.31
Age range	18-25	496	98.22
	26-30	6	1.19
	31-35	3	0.59
Educational status	Associate	82	16.24
	Undergraduate	413	81.78
	Post graduate	10	1.98
Department	Faculty of dentistry	40	7.92
	Faculty of health sciences	144	28.51
	Vocational school of health services	73	14.46
	Faculty of medicine	248	49.11
Place of residence	Village	41	8.12
	Town	5	0.99
	District	96	19.01
	City centre	355	70.30
	Abroad	8	1.58
Way of accessing distance education	I have internet at home	340	67.33
	I don't have internet at home, I use the internet of a relative	11	2.18
	I don't have internet at home, I connect with my phone	100	19.80
	I don't have internet at home, I connect from outside the home (café, etc.)	54	10.69

"Perceptions on distance education" factor was the factor students agreed with the highest mean. In terms of distance education, students stated that course presentations were regularly uploaded to the system, course contents were suitable and they could reach the relevant person when they needed. Students also suggested theoretical courses and exams to be carried out online, while they suggested practices to be performed face-to-face (Table 3).

Table 2. Eigenvalues and variance of the present study factors

Factor	Eigenvalues	% of Variance	Cumulative %	Cronbach alpha
Perceptions on distance education	10.31	24.56	24.56	0.270
Systematic infrastructure in distance education	7.20	17.14	41.69	
Efficiency of distance education	2.92	6.95	48.64	
Professional anxiety	1.59	3.78	52.43	
Perceptions on face-to-face education	1.30	3.10	55.53	
Following distance education courses	1.10	2.61	58.14	

Results regarding the variable of gender

As a result of the Mann-Whitney U test conducted with the scope of the study, significant differences were found in terms of the gender of the students and Professional anxiety and Following distance education courses (p=0.030, p=0.001, respectively). In the questions of survey for professional anxiety, most of the male students were adversely affected in terms of the their professional development during the distance education system in the pandemic process and it is stated that the inability to apply what they learned theoretically in the health units reduced their professional self-confidence. When a similar comparison is made for Following distance education courses, it has been seen that female students follow online courses more easily than male students, and they can easily access information at the specified time. The descriptive data of the factors by gender and the comparison results between groups were given in Table 3.

Table 3. Comparison of factor scores by gender (SD=Standard deviation)

	Male		Female		p
	Median	Min-Max	Median	Min-Max	
Perceptions on distance education	47.50	33-62	48.00	32-62	0.706
Systematic infrastructure in distance education	40.00	23-53	39.00	19-55	0.256
Efficiency of distance education	27.00	18-34	27.00	20-39	0.426
Professional anxiety	6.00	2-9	6.00	2-8	0.030
Perceptions on face-to-face education	9.00	3-15	10.00	3-15	0.133
Following distance education courses	2.00	1-5	3.00	1-5	0.001

Results regarding the variable of education

When the participants' education levels were examined, it was found that the number of undergraduate students was higher (Table 1). It was found that the lowest number of participation was in postgraduate students (Table 1). As a result of Kruskal-Wallis non-parametric variance analysis, significant differences were found in education level in terms of systematic infrastructure and following courses (respectively p=0.007, p=0.029). Table 4 shows the comparison of factor scores by level of education.

When post-hoc tests, which were conducted to determine which group leads to the differences were examined, it was seen that undergraduate students stated that they were less satisfied with the Systemic Infrastructure of Distance Education compared to associate degree students (p=0.005). In addition, the meaningful difference in the answers to the questions about course follow-up in distance education could not be clarified. Post-hoc pairwise comparison results of education level are displayed in Table 4.

Figure 1 shows the post-hoc paired comparison results of level of education.

Table 4. Comparison of factor scores by level of education

Factors	Postgraduate		Undergraduate		Associate		p
	Median	Min-Max	Median	Min-Max	Median	Min-Max	
Perceptions on distance education	49.00	40-53	48.00	32-62	46.00	35-60	0.220
Systematic infrastructure in distance education	40.00	27-55	39.00$_a$	19-53	41.50$_a$	20-53	0.007
Efficiency of distance education	27.00	24-30	27.00	18-39	28.00	21-36	0.180
Professional anxiety	6.00	5-7	6.00	2-9	6.00	2-8	0.173
Perceptions on face-to-face education	9.00	4-10	9.00	3-15	10.00	3-15	0.259
Following distance education courses	2.00	1-3	3.00	1-5	3.00	1-5	0.029$_b$

Median, Minimum (Min) and Maximum (Max). a= According to post-hoc test statistically different at p=0.005 level. b=Statistical difference couldn't be shown by post-hoc test.

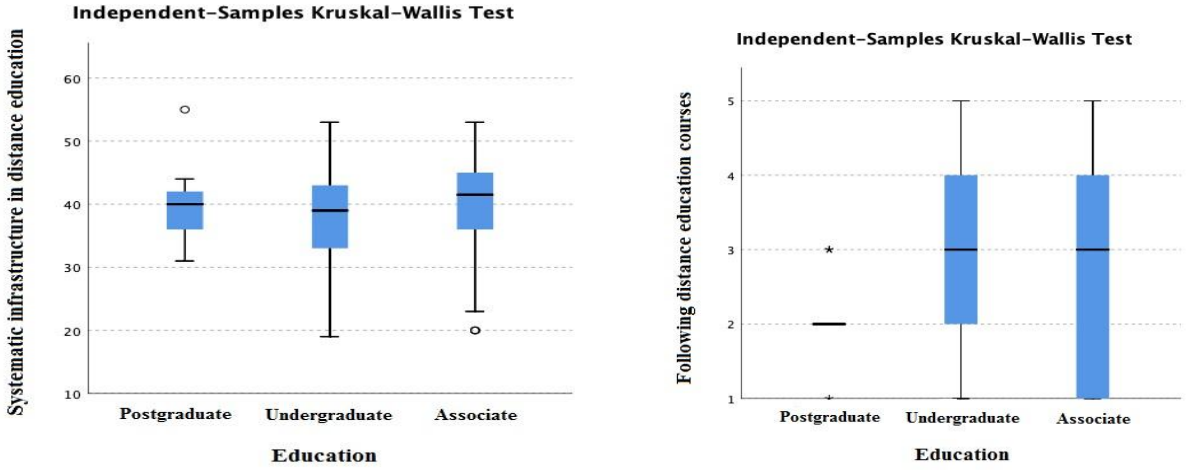


Figure 1. Distribution of systematic infrastructure and following courses in distance education by level of education. The boxplots which were drawn using median and IQR values display the distribution of systematic infrastructure and following courses in distance education by level of education

Results Regarding the Variable of School

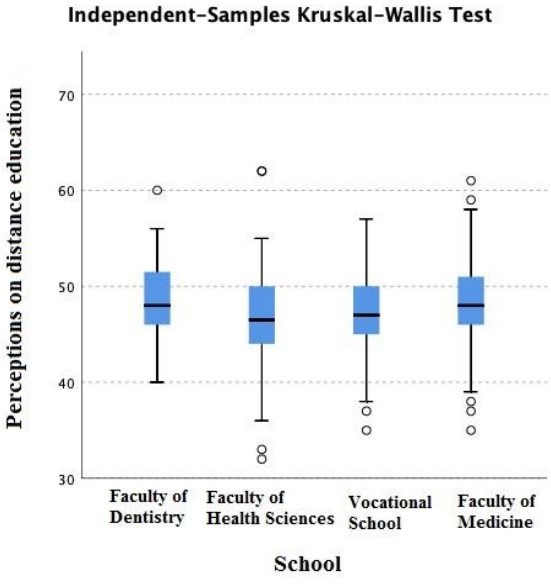
In terms of the faculty/school undergraduate students attended, the highest number of participation was from medical faculty students. The lowest number of participation was from students who attended the FD (Table 1). As a result of Kruskal-Wallis non-parametric variance analysis, significant differences were found between the faculty/school undergraduate students attended in terms of perceptions of distance education, systematic infrastructure in distance education, efficiency of distance education and following distance education courses (p=0.013, p<0.001, p=0.038, p<0.001). Table 5 shows the comparison of factor scores by school.

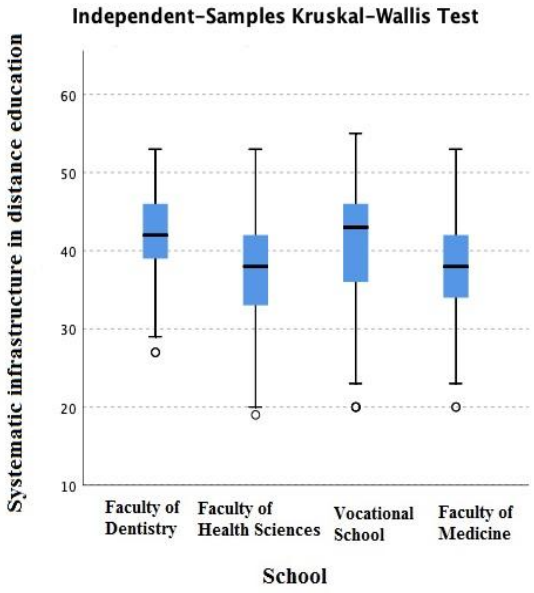
When the post-hoc tests conducted to determine which group caused to the differences, it was seen that the Perception of Distance Education of the medical faculty students was higher than the students studying in the health sciences faculty (p=0.017, Table 5). Students studying at the FHS said that they forgot the information they learned through distance education more quickly and that the courses' content were not suitable. They also stated that face-to-face education improves their multifaceted perspectives and that the information is more permanent. Medical faculty students, on the other hand, stated that distance education makes it easier to get information at any time and that they do not feel obliged to attend during the course because there are course registrations. In addition, the measures to be taken in face-to-face education will not be sufficient during the epidemic process. They argued that distance education is important for the continuity and public health in pandemic conditions and should continue throughout the epidemic. When the students were evaluated in terms of Systemic Infrastructure in Distance Education, it was seen that the students studying at the FM and FHS were not satisfied (p values in order FHS-VS=0.001, FHS-FD=0.001, FM-VS=0.002, FM-FD= 0.001, Table 5). In both groups, students stated that they had more problems with internet Access. So; they indicated that systematic infrastructure should be uninterrupted and the course presentations should be supported visually. Similarly, students studying at FD reported that the lack of classroom environment which affected their motivation badly and they had difficulty in following the lessons. Post-hoc pairwise comparison results of the faculty/school variable of undergraduate students were shown in Table 5.

Table 5. Comparison of factor scores by school

	Faculty of Dentistry		Faculty of Health Sciences		Vocational School		Faculty of Medicine		p
	Median	Min-Max	Median	Min-Max	Median	Min-Max	Median	Min-Max	
Perceptions on distance education	48.00	40-60	46.50$_a$	32-62	47.00	35-57	48.00$_a$	35-61	0.013
Systematic infrastructure in distance education	42.00$_b$	27-53	38.00$_{b, c}$	19-53	43.00$_c$	20-55	38.00	20-53	<0.001
Efficiency of distance education	28.00	23-33	27.00	20-39	28.00	21-36	27.00	18-35	0.038$_d$
Professional anxiety	6.00	3-7	6.00	2-9	6.00	2-8	6.00	2-9	0.101
Perceptions on face-to-face education	9.00	3-14	10.00	6-15	9.00	3-14	9.00	3-15	0.237
Following distance education courses	2.00$_{e, f}$	1-5	3.00$_e$	1-5	3.00	1-5	3.00$_f$	1-5	<0.001

Median, Minimum (Min) and Maximum (Max). a= According to post-hoc test statistically different at p=0.017 level. b= According to post-hoc test statistically different at p=0.001 level. c= According to post-hoc test statistically different at p=0.001 level. d=Statistical difference couldn't be shown by post-hoc test. e= According to post-hoc test statistically different at p<0.001 level. f= According to post-hoc test statistically different at p=0.001 level.





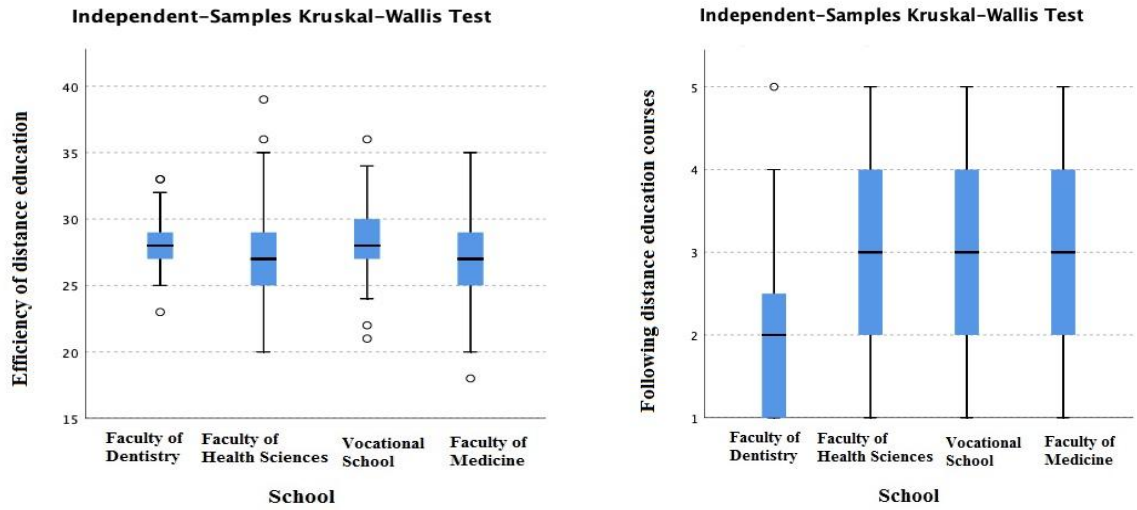


Figure 2. Distribution of the factors of perceptions of distance education, systematic infrastructure in distance education, efficiency of distance education and following distance education courses by school. The boxplots which were drawn using median and IQR values display the distribution of the factors of perceptions of distance education, systematic infrastructure in distance education, efficiency of distance education and following distance education courses by school

Results Regarding the Variable of Access

When the participants' ways of accessing distance education were examined, it was found that the most frequently used method was home internet, while the least used one was neighbour's internet (Table 1). As a result of Kruskal-Wallis non-parametric variance analysis, significant differences were found between ways of accessing the internet in terms of the factors of perceptions of distance education, systematic infrastructure in distance education, efficiency of distance education and following distance education courses ($p<0.001$, $p<0.001$, $p=0.045$, $p<0.001$).

When post-hoc tests were examined, it was determined that students using internet of any cafe and mobile phone internet were in difficulty in terms of following distance education compared to the students using the home internet ($p<0.001$, Table 6 for both groups). Except this; it was stated that students' knowledge using the home internet was not permanent. Besides; they had difficulties due to limited opportunities in internet and computer, and they could not reach the relevant unit without any problems when they had technical problems. Post-hoc pairwise comparison results were shown in Table 6.

Table 6. Comparison of factor scores by access

	Home		Mobile phone		Cafe		Neighbour		p
	Median	**Min-Max**	**Median**	**Min-Max**	**Median**	**Min-Max**	**Median**	**Min-Max**	
Perceptions on distance education	48.00_{a}	35-62	46.00_{a}	32-56	47.00	38-61	46.00	39-56	<0.001
Systematic infrastructure in distance education	$41.00_{b, c}$	20-55	36.00_{b}	19-53	36.00_{c}	20-51	35.00	20-47	<0.001
Efficiency of distance education	27.00_{d}	20-36	27.00	18-39	26.00_{d}	21-33	27.00	23-33	0.045
Professional anxiety	6.00	2-9	6.00	2-9	5.00	3-7	6.00	3-6	0.052
Perceptions on face-to-face education	9.00	4-15	9.00	3-14	10.00	3-14	10.00	6-12	0.369
Following distance education courses	$2.00_{e, f}$	1-5	4.00_{e}	1-5	4.00_{f}	1-5	3.00	1-5	<0.001

Median, Minimum (Min) and Maximum (Max). a= According to post-hoc test statistically different at $p<0.001$ level. b= According to post-hoc test statistically different at $p<0.001$ level. c= According to post-hoc test statistically different at $p<0.001$ level. d= According to post-hoc test statistically different at $p=0.029$ level. e= According to post-hoc test statistically different at $p<0.001$ level. f= According to post-hoc test statistically different at $p<0.001$ level.

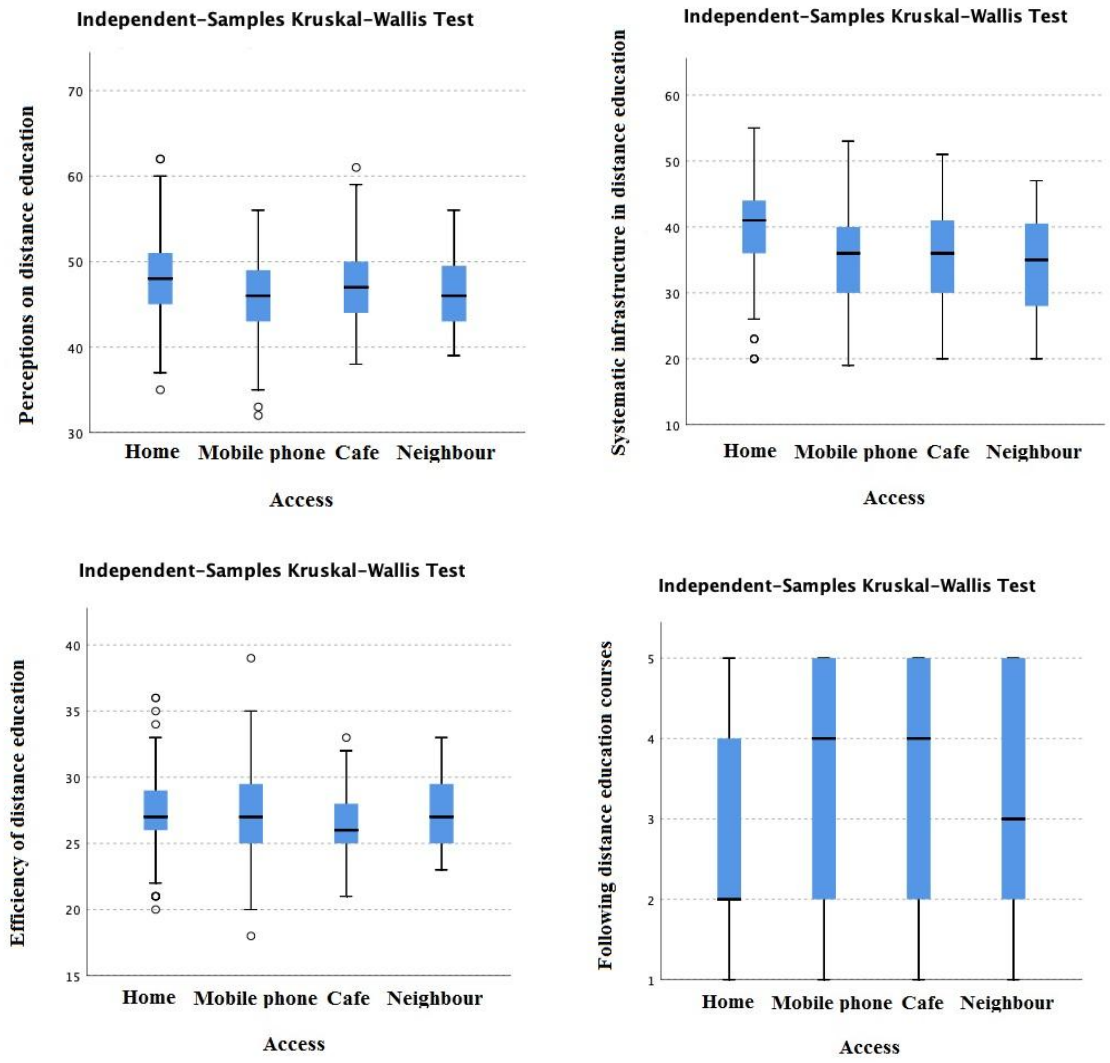


Figure 3. Distribution of the factors of perceptions of distance education, systematic infrastructure in distance education, efficiency of distance education and following distance education courses by access.

Rotated Component Matrix[a]

	Component					
	1	2	3	4	5	6
S27	,813	-,151	-,212	,028	,095	,157
S38	,797	-,043	-,253	,038	,129	,176
S31	,775	-,026	,031	,058	,067	,060
S39	,743	-,028	-,324	,053	,005	,098
S25	,738	-,082	,059	-,034	,063	,078
S23	,711	-,060	-,034	,079	,099	-,001
S24	,705	,168	,003	-,067	,038	,012
S42	,689	,078	,087	,070	-,033	-,273
S35	,688	,011	-,004	-,036	,100	,055
S20	,662	-,069	-,268	,115	,292	,284
S9	,603	,215	-,199	,081	-,032	,055
S30	,572	-,068	,168	,174	-,064	,254
S5	,471	,400	,259	-,285	-,092	,200
S16	-,099	,809	,028	-,073	-,024	-,025
S17	-,031	,747	,239	-,057	-,059	-,208
S8	,159	,721	,084	-,010	,039	-,074
S15	-,157	,719	,091	,075	,171	-,012
S19	,246	,666	,184	-,227	-,181	,071
S7	-,247	,632	,249	,015	,005	,121
S4	,063	,628	,065	,095	-,039	-,223
S18	,160	,625	,129	-,114	-,462	-,055
S3	-,277	,595	,145	-,022	,048	-,193
S14	,179	,564	,201	-,126	,043	-,080
S21	-,033	,545	,350	-,067	-,321	,122
S2	-,424	,521	,314	-,040	-,164	,051
S13	,414	,439	,283	-,326	,002	,098
S33	-,212	,306	,717	-,026	,007	-,034
S32	-,382	,206	,673	,115	,065	,085
S36	-,058	,286	,660	-,001	,075	-,020
S29	,049	,054	,653	-,069	-,077	,132
S34	-,049	,400	,645	-,072	-,035	-,103
S41	,073	,033	,634	,108	,003	-,051
S40	-,080	,029	,606	,188	,010	-,142
S28	,008	,411	,570	-,078	-,035	-,087
S22	-,455	,353	,544	,064	-,061	,033
S43	,044	-,072	,172	,823	,131	,121
S44	,308	-,106	,063	,806	,001	,056
S12	,184	,009	,187	,029	,754	-,096
S10	,424	-,015	-,127	,078	,521	,150
S11	,439	-,114	-,151	,084	,457	,351
S1	,363	-,253	-,116	,060	,107	,633
S26	,419	-,248	,031	,208	-,088	,589

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 6 iterations.

DISCUSSION

There is no doubt that one of the groups affected by the pandemic is students. Both teachers and students were caught unprepared for this rapid change they encountered in their education lives (16). Distance education is defined as an educational system independent of time and place, where a fast and effective method is followed in accessing information and technology is used in the best way (17). In addition, being an alternative way that can be used in imperative situations can be seen as its most important advantage. In a study conducted on Indian students, Muthuprasad et al. found that during the pandemic process, students were ready to prefer distance education system. It was also reported that online learning provided students with flexibility and ease. It was found that students mostly preferred mobile phone for online education (10). In line with this study, most of the students in our study thought that online education was effective in decreasing the pandemic. In addition to its advantages, distance education also has disadvantages. It is stated that problems may be experienced such as limiting the socialization of students, disruptions in communication, limitations in practical learning, deficiencies in individual learning, dependence on

infrastructure and communication technologies and discipline problems in internet assisted distance learning practices (17). For this reason, it is thought that developing distance education system or finding out similar methods is important (18). It has been shown that especially the expectations of students who receive education in the field of health towards the development of professional skills are not met with distance education since they cannot have clinical practice. It is natural to need face-to-face education in applied courses since the curriculum has theoretical and applied courses; on the other hand, it can be predicted that for a pandemic period in which face-to-face education cannot be realized, problems can be solved partially with a more developed technological software and this way the efficiency of applied distance education can be increased (19). In one study, reasons such as "distance education", "Professional anxiety" and "limited means in accessing the internet" were shown as the issues students were most worried about in the pandemic period (18). In a study they conducted with students in faculties of medicine and dentistry, Dhahri et al. reported that distance education provided in the pandemic affected students psychologically negative. It has been found that professional anxiety of especially male students increased (20). In a study conducted on paramedic students, Güngör et al. reported that pandemic affected the moods of students, the changes in mood could cause negativities in working life such as decreased job satisfaction, not being able to fully conduct tasks and responsibilities (19). In a study they conducted with undergraduate and postgraduate students of various universities, Keskin and Kaya stated that distance education had a higher contribution to level of theoretical information than their practical skills. This result brings to mind that students need face-to-face education more especially in applied units. Students' having one-to-one practice after listening to course content can contribute more to students' professional practice skills (21).

According to Sahu, the most important issue students complained about was the insufficient infrastructural conditions in the education system of the university they attended. For this reason, students emphasized that they experienced access problems when too many students were in the system at the same time, they could not follow courses regularly and courses were not efficient. Distance education is not a new situation for many universities. However, urgency due to the pandemic forced all institutions and distance education became problematic (22). In our study, it can be seen that distance education is advantageous since it enables students to learn information with the speed they like whenever they want. However, students' being away from classroom environment, having more difficulty in adapting to course, problems in internet access and forgetting the subjects they listen to quickly are considered as the disadvantages of the distance education structure. It is thought that taking only theoretical information and not applying this information may cause them to forget the subjects quickly. In a study conducted on physiotherapy and rehabilitation students, Yılmaz reported that all courses, whether theoretical or applied, will be insufficient with distance education (23).

It has been reported that low cooperation and lack of social connection may decrease social interactions of students and therefore they may have low performance and high wear out rates (24). Similarly, it was reported in a study by Keskin and Kaya that 36% of the students thought distance education decreased team work by leading students to study individually (21). In parallel with the results of this study, the results found in our study showed that students thought creating online classroom environment was not sufficient in courses taught with distance education. Students stated that not being able to meet socialization and physical activity needs is a determinant on motivation. In a study conducted by Ceviz et al, a great majority of participants (81%) stated that they did not want distance education to continue. This distance education model, which was not adapted by a great majority of the students in the study had to be used as the uncertainty of pandemic continued. For this reason, researchers suggested that distance education method had to be developed in line with the wishes of students and it had to be applied and performed again with the start of face-to-face education period (16). It is impossible to disregard the advantages of distance education during the pandemic process. In other words, although the learning process will be carried out as distance and online, efforts can be shown to make this process more humane (2). In Terzi et al.'s study, it was found that especially female students followed courses more regularly. The significant correlation between high level of following courses and perceptions of distance education can be interpreted as the indicator that students get efficiency from courses. In addition, strong systematic infrastructure increases the rates of following courses and affects satisfaction from distance education (25). In a study conducted by Karagöz et al., it was concluded that multimedia elements should be increased in materials uploaded to distance education system, educational materials should be made more comprehensible and materials in the system should have a specific order (11). In one study, Saltürk and Güngör emphasized the significance of removing prejudices towards distance education and being open to innovations. In another study, it was found that the factors that increased the satisfaction of students about distance education were uploading course content to the system before classes, supporting the content visually and increasing understandability with videos. As mentioned in Terzi et al.'s study, in addition to a strong systematic infrastructure, high technology using skills of students increase online learning level and satisfaction (25). In one study, Özses et al. suggested that students' having internet access with laptops and stable internet line that enables more stable connection rather than mobile phones may be an advantage about the efficiency of education. However, the presence of students who need support in these issues should not be disregarded and alternative strategies about how this need can be met should be developed. It was found in this study that distance education contributed most to students' theoretical level of knowledge, next to their knowledge of general culture, and least to their level of professional skills (19). In a study they conducted, Saltürk and Güngör concluded that the courses taught with distance education were in

parallel with course content and course durations were sufficient. However, they also stated that there was a need to redesign curricula in a way that will increase students' curiosity and answer students' needs (2).

Limitations of the Study

Associate, undergraduate and graduate students between the ages of 18 and 35 who received distance education due to the pandemic in the field of health were included in the study. Students who had suspended their education process for non-pandemic reasons were excluded from the study.

CONCLUSION

Working on ways to develop of distance education in terms of fulfilling the existing conditions and being more prepared when such a situation occurs again is important. It is also recommended to provide psychological support so that students can cope with stress, to make sure that students with limited means can follow courses on equal terms with everyone, to enrich course content, to improve infrastructure problems, to repeat applied courses in the future.

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REFERENCES

1. Gohel KH, Patel PB, Shah PM, Patel JR, Pandit N, Raut A. Knowledge and perceptions about COVID-19 among the medical and allied health science students in India: An online cross-sectional survey. Clin Epidemiol Glob Heal. 2021; 9(7): 104-9.
2. Saltürk A, Güngör C. Üniversite öğrencilerinin gözünden COVID-19 pandemisinde uzaktan eğitime geçiş deneyimi. Adıyaman Üniversitesi Sos Bilim Enstitüsü Derg. 2020; (36): 137-74.
3. Erişen MA, Yılmaz FÖ. Investigation of ındividuals' expenditures in the period of COVID-19 pandemic. Gaziantep Univ J Soc Sci. 2020; 19(COVID-19 Special Issue): 340-53.
4. Buluk B, Esitti B. Learning by tourism undergraduate students in the process of coronavirus (Covid-19). J Aware Cilt. 2020; 5(3): 285-98.
5. WHO. Coronavirus Disease (Covid-19) Outbreak [Internet]. 2020. Available from: https://www.euro.who.int/en/health-topics/health-e
6. Taşar HH. The effects of the Covid-19 pandemic process on school principals. Ahi Evran Üniversitesi Kırşehir Eğitim Fakültesi Derg. 2021; 22: 171-96.
7. YÖK. Pandemi Döneminde Uzaktan Eğitim [Internet]. 2020. Available from: https://portal.yokak.gov.tr/makale/pandemi-doneminde-uzaktan- egitim/
8. Rajab MH, Gazal AM, Alkattan K. Challenges to online medical education during the COVID-19 pandemic. Cureus. 2020; 12(7): 1-11.
9. Kurtuncu M, Kurt A. Problems of nursing students in distance education in the Covid-19 pandemia period. Eurasian J Res Soc Econ. 2020; 7(5): 66-77.
10. Muthuprasad T, Aiswarya S, Aditya K, Girish K. Students' perception and preference for online education in ındia during COVID -19 pandemic. SSRN Electron J. 2020; 3(4): 1-11.
11. Karagöz N, Ağadayı E. Behaviors and problems of a medical school students' related to distance education in pandemic medical education in the pandemic process. J Turkish Fam Physician. 2020; 11(4): 149-58.
12. Yadav RK, Baral S, Khatri E, Pandey S, Pandeya P, Neupane R, et al. Anxiety and depression among health sciences students in home quarantine during the COVID-19 pandemic in selected provinces of Nepal. Front Public Heal. 2021; 9(3): 1-9.
13. Gaur U, Majumder MAA, Sa B, Sarkar S, Williams A, Singh K. Challenges and opportunities of preclinical medical education: COVID-19 crisis and beyond. SN Compr Clin Med. 2020; 2(11): 1992-7.
14. Ulenaers D, Grosemans J, Schrooten W, Bergs J. Clinical placement experience of nursing students during the COVID-19 pandemic: A cross-sectional study. Nurse Educ Today. 2021; 99(1): 1-6.
15. S Güngör, Avan H, Argın V. COVID-19 salgını sonrası paramedik öğrencilerinin mesleğe bakış açılarının belirlenmesi. J Heal Serv Educ. 2021; 1(1): 26-32.
16. Öz Ceviz N, Tektaş N, Basmacı G, Tektaş M. COVID-19 pandemi sürecinde öğrencilerin uzaktan eğitime bakışı. ulakbilge Sos Bilim Derg. 2020; 574(52): 1322-35. doi: 10.7816/ulakbilge-08-54-06.
17. Sayan H. COVID-19 Pandemisi sürecinde öğretim elemanlarının uzaktan eğitime ilişkin görüşlerinin değerlendirilmesi. AJIT-e Online Acad J Inf Technol. 2020; 11(42): 100-22.
18. Wang C, Cheng Z, Yue X-G, McAleer M. Risk management of COVID-19 by universities in China. J Risk Financ Manag. 2020; 13(2): 1-6.
19. Ozses M, Dinçer Dalessandro H, Ozbal Batuk M, Sennaroglu G. Audiology students opinions on distance learning during the COVID-19 pandemic: Experience from Hacettepe University. Turkish J Audiol Hear Res. 2021; 4(1): 11-7.
20. Dhahri AA, Arain SY, Memon AM, Rao A, Mian MA. The psychological impact of COVID-19 on medical education of final year students in Pakistan: A cross-sectional study. Ann Med Surg. 2020; 60(9): 445-50.
21. Keskin M, Özer Kaya D. Evaluation of students' feedback on web-based distance education in the COVID-19 process. İzmir Katip Çelebi Üniversitesi Sağlık Bilim Fakültesi Derg. 2020; 5(2): 59-67.
22. Sahu P. Closure of universities due to coronavirus disease 2019 (COVID-19): Impact on education and mental health of students and academic staff. cureus. 2020; 2019(4): 4-9.
23. Altuntaş Yılmaz N. Yükseköğretim kurumlarında COVID-19 pandemisi sürecinde uygulanan uzaktan

eğitim durumu hakkında öğrencilerin tutumunun tartışılması: fizyoterapi ve rehabilitasyon bölümü örneği. Necmettin Erbakan Üniversitesi Sağlık Bilim Fakültesi Derg. 2020; 3(1): 15-20.
24. Cheng G, Chau J. Exploring the relationships between learning styles, online participation, learning achievement and course satisfaction: An empirical study of a blended learning course. Br J Educ Technol. 2016; 47(2): 257-78.
25. Terzi D, Akalın RB, Erdal B. Covıd-19 salgınının sağlık alanındaki öğrencilerin eğitimine etkisi: Tekirdağ Namık Kemal Üniversitesi Sağlık Hizmetleri Meslek Yüksekokulu örneği. Namık Kemal Tıp Derg. 2020; 8(3): 279-87.