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# Pandemi Döneminde Tıp Fakültesi Öğrencilerinin Uzaktan Eğitime Karşı Tutumları ve İlişkili Faktörler

## Attitudes of Medical Faculty Students towards Distance Education and Related Factors during the Pandemic Period

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#### ÖΖ

Amaç: Bu araştırma ile uzaktan eğitimin; tıp fakültesi öğrencileri üzerinde oluşturduğu etkinin araştırılması, uzaktan eğitim yolu ile alınan eğitimin avantajlarının ve dezavantajlarının belirlenmesi amaçlanmıştır.

**Materyal ve Metot:** Sakarya Üniversitesi Tıp Fakültesi öğrencileri üzerinde yapılan bu tanımlayıcı araştırmaya 919 tıp fakültesi öğrencisinden 481'i (%52,3) katılmıştır. Araştırmacılar tarafından oluşturulmuş anket formu öğrencilere Google formlar yolu ile iletilmiştir. Katılımcıların uzaktan eğitim ile ilgili görüşlerinin değerlendirmek için uzaktan eğitime yönelik görüşler ölçeği kullanılmıştır.

**Bulgular:** Katılımcıların %63'ü (303) kadın, %37'si (178) erkek idi. Katılımcıların yaş ortalaması ise 21,8±2,02 yıldı. UEYGD Ölçeği'nden alınabilecek maksimum puan 90 iken katılımcıların aldıkları ortanca puan 46'dır. UEYGD Ölçeği'nden erkeklerin aldığı ortanca puan, kadınların aldığı ortanca puandan istatistiksel olarak anlamlı şekilde farklıdır (p=0,016).

**Sonuç:** Kadın cinsiyet, dönem 1 öğrencisi olma, derslerin yarısından azına katılma, internet bağlantısı ile ilgili sorun yaşama, ailede uzaktan eğitim alan başka bir bireyin olması gibi bazı özellikler araştırmaya katılan tıp fakültesi öğrencilerinin uzaktan eğitim ile ilgili görüşlerini olumsuz etkilemiştir.

Anahtar Kelimeler: Pandemik, tıp eğitimi, tıp öğrencisi, uzaktan eğitim

#### ABSTRACT

**Objective:** It is aimed to investigate the effect of distance education on medical faculty students, to determine the advantages and disadvantages of distance education

**Materials and Methods:** Four hundred eighty-one (52.3%) of 919 medical faculty students participated in this descriptive study conducted on Sakarya University Faculty of Medicine students. The questionnaire form created by the researchers was sent to the students via Google forms. Evaluation of Views on Distance Education Scale (EVDES) was used to evaluate the views of the participants about distance education.

**Results:** Sixty-three percent of the participants (303) were female, 37% (178) were male. The average age of the participants was  $21.8 \pm 2.02$  years. While the maximum score from the EVDES is 90, the median score obtained by the participants is 46. The median score obtained by men from the EVDES was statistically significantly higher than the median score obtained by women (p = 0.016).

**Conclusion:** Some characteristics such as female gender, being a semester student, attending less than half of the lessons, having problems with internet connection, having another individual taking distance education in the family negatively affected the views of the medical faculty students participating in the study about distance education.

**Keywords:** Distance education, medical education, medical student, pandemics

#### Araştırma Makalesi (Research Article)

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#### INTRODUCTION

The COVID 19 (Coronavirus Disease 2019) outbreak occurred for the first time in Wuhan, China on December 29, 2019, spread to 113 countries outside China, on March 11, 2020, and was declared as a "Pandemic" by the World Health Organization (WHO). The first case confirmed by the Ministry of Health in Turkey was seen on March 11, 2020.<sup>1,2</sup> Since the disease is transmitted by droplets. One of the most essential measures in preventing transmission is maintaining social distance; immediately after the first case, on March 12, 2020, in primary education, secondary education and universities, education, and training were suspended.<sup>3</sup> Due to the interruption of education within the scope of the measures against the epidemic all over the world, 25 million students in Turkey and approximately 1.6 billion students in the world were negatively affected. In order to be able to continue education while maintaining social distance, different distance education practices have been put into practice rapidly in our country and the world.<sup>4</sup>

The Council of Higher Education (CHE) announced on March 18, 2020, that there are Distance Education Applications and Research Center (DEARC) in 123 universities and that the distance education process will begin at these universities on March 23, 2020. The needs of universities that lack infrastructure will be met under CHE's coordination, stating that the open course materials pool would be opened to all universities on the same date.<sup>5</sup>

The distance education process, which was passed quickly, had disadvantages as well as advantages for students. It is aimed to investigate the effect of distance education on medical faculty students, where practical training has a significant role in professional development, to determine the advantages and disadvantages of distance education, and to find solutions for similar problems that may occur in the future.

#### MATERIALS AND METHODS

Permission was obtained from Sakarya University Non-Invasive Ethics Committee, (Date: 02.03.2021, decision no: 90). This study was carried out in accordance with international declarations, guidelines, etc.

*Place and Time of Research:* Research data between the dates of 03.03.2021-17.03.2021, 1-6 students registered in Sakarya University Faculty of Medicine in the 2020-2021 academic year. It was obtained with the participation of class students.

**Population and Sample of the Research:** The population of the research consists of all medical faculty students consisting of 919 people. No sample selection was made in the study, and it was aimed to reach all medical faculty students during the data collection period. However, 114 (54.2%) from period 1, 103 (58.2%) from period 2, 84 (51.2%) from period 3, 54 (40.0%) from period 4, A total of 481 (52.3%) students were reached, 75 (59.1%) from the 5th grade and 51 (48.1%) from the 6th semester.

*Type of Research:* The study is an epidemiological study of descriptive type.

Questionnaire form used to collect data; Being a Questionnaire for the Evaluation of Students' Views on Distance Education (18 questions) with questions asked about sociodemographic characteristics (3 questions), behaviors related to distance education (16 questions), opinions (14 questions), attitudes and behaviors related to the COVID 19 pandemic (3 questions). It consists of 54 questions in total.

The scale for evaluating students' views on distance education was developed by Serkan Yıldırım et al.<sup>6</sup> The Cronbach's alpha coefficient was obtained as a result of the internal consistency analysis of the whole scale consisting of 18 questions and four factors in total is 0.864. In the present study, Cronbach's alpha coefficient was calculated as 0.926. The questions representing the factors of the scale consisting of the factors of "Personal Suitability", "Effectiveness", "Instructional", "Tendency" are "1-6.", "7-11.", "12-15.", "16-18." dir. In the evaluation of the scale, a 5-point Likert type scale was used; "I totally disagree" option was scored with 1 point, "Rarely Agree" option with 2 points, "Undecided" option with 3 points, "Generally Agree" option with 4 points, "Completely Agree"

option with 5 points. 4 questions between 12-15 about the instructional factor in the scale were asked with reverse expressions. Therefore, its scoring was done reversely. The highest score that can be obtained in the scale is 90, the lowest score is 18.

Statistical Analysis: Shapiro-Wilk test was used to

evaluate compliance with normal distribution. For descriptive statistics, number and percentage are used in categorical variables, mean and standard deviation if there is conformity with normal distribution for numerical variables, median and interquartile widths are used if there is no conformity

Table 1. Sociodemographic characteristics of the medical faculty students participating in the study.

Variables	n (%)		
Sex			
Male	178 (37.0)		
Female	303 (63.0)		
Age (year)			
Median [1.per-3.per]	22 [20-23]		
Mean $\pm$ Standard deviation	21.8±2.02		
Class			
Class 1	114 (23.7)		
Class 2	103 (21.4)		
Class 3	84 (17.5)		
Class 4	54 (11.2)		
Class 5	75 (15.6)		
Class 6	51 (10.6)		
Total	481 (100.0)		

**Table 2.** The type of education received by medical faculty students, the means of access to education and the distribution of related factors.

Variables	n (%)		
The type of education medical faculty students receive, the means of access to education			
The type of education students received during the pandemic period			
Distant	405 (84.2)		
Together from distant and face to face	76 (15.8)		
The device used to participate in distance education *			
Computer	434 (61.1)		
Mobile phones	223 (31.4)		
Tablet	53 (7.5)		
Internet used to participate in distance education			
Mobile data	38 (7.9)		
Wifi	443 (92.1)		
Frequency of problems in internet access in the distance education process	s		
Always	12 (2.5)		
Often	65 (13.5)		
Sometimes	160 (33.3)		
Rarely	158 (32.8)		
No	86 (17.9)		
Distribution of factors related to distance education			
Another family member participating in distance education			
Yes	345 (71.7)		
No	136 (28.3)		
The effect of distance education on study time			
Not changed	76 (15.8)		
Increased	142 (29.5)		
Decreased	263 (54.7)		
Sleep pattern change during the pandemic period			
Not happened	76 (15.8)		
Duration has not changed but quality has decreased	112 (23.3)		
Duration increased	238 (49.5)		
Duration decreased	55 (11.4)		

#### Table 2. Continue.

Distance learning environment	
Home	474 (98.5)
Library	3 (0.6)
Other	4 (0.9)
The presence of elements that will disrupt concentration in the environment where dis-	
tance education is attended	
Yes	357 (74.2)
No	124 (25.8)
Total	481 (100.0)

with normal distribution. Mann Whitney U test was used to compare two independent groups in terms of numerical variables since there was no conformity to normal distribution. In the comparing of three or more independent groups in terms of numerical variables, the Kruskal Wallis test was used again because it was not suitable for normal distribution. Dunn's test was used for paired comparisons in cases where a significant difference was detected due to the Kruskal Wallis test. Statistical significance level was accepted as p < 0.05. SPSS v23.0 (IBM SPSS Statistics for Windows, Version 23.0; Armonk, NY, USA) package program was used for analysis.

## RESULTS

63% of the participants (303 people) were female,

Table 3. Opinions of medical faculty students about distance education.

Items	Disagree	Neutral	Agree
	n (%)	n (%)	n (%)
I think the written materials used in distance education are sufficient	96 (20.0)	158 (32.8)	227 (47.2)
in terms of content.			
Distance education is a suitable alternative for the trainings I need.	204 (42.4)	139 (28.9)	138 (28.7)
I think distance education makes people lazy.	77 (16.0)	82 (17.0)	322 (67.0)
I do not think that I can establish a good circle of friends while taking	62 (13.0)	51 (10.6)	366 (76.4)
distance education.			
Face-to-face training allows me to have better discipline.	71 (14.8)	62 (12.9)	347 (72.3)
I do not believe that the diploma obtained by distance education is	282 (59.0)	89 (18.6)	107 (22.4)
valid.			
I believe that distance education will limit socialization among stu-	30 (6.3)	34 (7.0)	416 (86.7)
dents.			
I believe that distance education will reduce the success of students.	115 (24.0)	104 (21.7)	261 (54.3)
There is a communication gap between faculty members and students	72 (15.0)	74 (15.4)	335 (69.6)
in distance education.			
Distance education positively affects my creativity.	258 (53.8)	121 (25.2)	101 (21.0)
Distance education negatively affects my participation in classes.	164 (34.2)	80 (16.7)	236 (49.1)
Distance education, by its nature, increases efficiency.	281 (58.5)	95 (19.8)	104 (21.7)
I think distance education will be the form of education of the future.	224 (46.7)	94 (19.6)	162 (33.7)
I do not find it useful to give practical courses via distance education.	48 (10.0)	33 (6.9)	400 (83.1)
Distance education improves the quality of education.	316 (65.8)	92 (19.2)	72 (15.0)

 Table 4. The scores of medical faculty students on the Evaluation of Views on Distance Education scale and its sub-factors.

Scale for Evaluation of Views on Distance Education	Point Mean±SD	Point Median [min-maks]	Sub-dimension min- max scores
Personal suitability	17.9±6.3	18 [6-30]	6-30
Effectiveness	13±5	13 [5-25]	5-25
Tutorial	8.9±4.1	8 [4-20]	4-20
Predisposition	7.8±2.9	7 [3-15]	3-15
Total Scale Score	47.4±14.1	46 [18-84]	18-90

SD: Standard deviation.

37% (178 people) were male. The average age of the participants was  $21.8 \pm 2.02$  years (Table 1).

Table 2 includes the distribution of the answers about where and how students connect to distance education, under what conditions they receive education, and whether there are any problems they experience. While 84.2% of the students (405 people) received only distance education, 15.8% (76 people) received distance and face-to-face education together. 55.4% of the students (266 people) stated that they were worried about face-to-face education during the pandemic. 69.3% of the participants (362 people) stated that distance education does not affect their future specialty area; 71% of them (341 people) stated that they do not cause any uneasiness for their medical life after graduation. While 60.6% of the students (290 people) stated that they are not inclined to distance education; 54.5% (262 people) stated that post-pandemic education should be con-

**Table 5.** Comparison of the scores of medical school students from the Scale of Evaluation of Views on

 Distance Education, according to the COVID-19 pandemic and various situations related to distance education.

Variables	Evaluation of Opinions on Distance Education Scale Score Ortanca [1.pc-3.pc]	р	Binary Compar- ison Results
Gender			
Male (n=178)	48.50 [38.00-61.00]	0.016*	-
Female(n=303)	44.00 [37.00-55.00]	0.010	
Class			
1.class (n=114)	41.50 [33.00-52.00]		
2.class (n=103)	50.00 41.00-62.00		
3.class (n=84)	45.50 37.00-57.75	0.001**	1-2 p<0.001
4.class (n=54)	43.00 [36.75-56.00]		1-5 p=0.022
5.class (n=75)	50.00 [37.00-59.00]		- <b>F</b>
6.class (n=51)	47.00 [41.00-54.00]		
Form of Education			
Distance education (n=405)	45.00 [37.00-57.50]		
Distance and face-to-face education (n=76)	48.50 [39.25-54.00]	0.561*	-
Frequency of attending distance education			
Participated in some (n=56)	41.00 [32.00-52.75]		
Participated in half (n=48)	45.00 [36.00-52.75]		
Most of them participated ( $n=303$ )	48.00 [38.00-57.00]	0.049**	1-3 p=0.059
Fully participated (n=74)	44.00 [38.00-62.50]	0.049	1 5 p 0.055
	11.00 [00.00 02.00]		
Problem with internet during distance learning			
not lived (n=86)	54.00 [41.75-67.25]		1 5 0 0 1 0
rarely lived (n=158)	47.00 [38.75-56.25]		1-5 p=0.010
sometimes lived (n=160)	44.00 [37.00-55.00]		1-4 p<0.001
often lived (n=65)	41.00 [33.50-51.00]	<0.001**	1-3 p<0.001
always lived (n=12)	39.00 [23.00-53.50]		1-2 p=0.019
The state of being someone else receiving distance edu-			
cation at home			
Yes (n=345)	45.00 [36.00-56.00]	0.007*	-
None(n=136)	48.00 [39.25-61.75]		
Study time			
Decreased (n=263)	42.00 [34.00-51.00]		1-2 p<0.001
Not changed (n=76)	50.50 [40.00-63.50]	<0.001**	1-3 p<0.001
Increased (n=142)	53.00 [43.00-63.25]		_
Items that will disrupt concentration in the environ-			
ment where he/she participates in distance education			
There is (n=357)	44.00 [35.50-53.00]		
There is not (n=124)	54.50 [43.00-65.75]	<0.001*	-
Changes in sleep patterns during the pandemic period			
Those whose sleep quality decreased without changing			
the sleep duration $(n=112)$	44.00 [34.25-54.00]		
Those whose sleep duration decreased ( $n=55$ )	44.00 [35.00-55.00]		1-4 p<0.001
		.0.00144	2-4 p<0.001
Those whose sleep duration increased (n=238)	45.00 [37.00-55.00]	<0.001**	2-4 p < 0.001

### Table 5. Continue.

The form of education after the pandemic			
Those who want to be face to face $(n=262)$	39.50 [33.00-47.00]		1-2 p<0.001
Those who want to be remote $(n=52)$	70.00 [58.00-77.00]	<0.001**	1-3 p<0.001
Those who want it to be mixed (n=167)	52.00 [45.00-60.00]		2-3 p<0.001
Concern about starting face-to-face educa-			
tion during the pandemic <sup>a</sup>			
Worried (n=266)	52.00 [42.00-61.00]		
Not worried (n=214)	40.00 [32.75-49.00]	<0.001*	-
The state of anxiety for the life of medicine			
due to distance education <sup>a</sup>			
Anxious (n=341)	42.00 [35.00-51.00]	<0.001*	-
Not anxious (n=139)	59.00 [48.00-70.00]		
Type of internet access used to participate in			
distance education			
Mobile data	42.00 [35.00-52.00]	0.071*	-
Wifi	47.00 [38.00-57.00]		

<sup>a</sup>: 1 participant left this question unanswered; \*: Mann Whitney U testi; \*\*:Kruskal Wallis H testi . pc=percentile.

tinued face-to-face, 34.7% (167 people) mixed (remotely and face to face), 10.8% (52 people) stated that it should continue remotely (Table 3).

While the maximum score from the Evaluation of Views on Distance Education Scale (EVDES) is 90, the median score obtained by the participants is 46 (Table 4).

Table 5 includes the comparison of the scores of medical school students from the Scale of Evaluation of Views on Distance Education, according to the COVID-19 pandemic and various situations as study time, sleep change, type of education. The difference in the scores of the classes from the EVDES was statistically significant (p = 0.001). The scores of those who did not have any items that would disrupt concentration in the environment they participated in distance education from the EVDES were found to be statistically significantly higher than those (p < 0.001). The scores obtained from the EVDES show a statistically significant difference according to the duration of sleep (p < 0.001).

The scores of the participants from the EVDES differ according to whether they want the training type to be face-to-face, mixed or remote (p < 0.001). The score of those who want to have distance education is significantly higher than those who whish to faceto-face or mixed education (p < 0.001; p < 0.001, respectively) (Table 5).

#### **DISCUSSION AND CONCLUSION**

This research is a study that examines the opinions of medical students, who are the future physicians, about the distance education process in the period when education is continued remotely with the pandemic.

In the study in which 481 medical faculty students

participated, 63.0% of which were women, the average age was  $21.8 \pm 2.02$ . The lowest score that the participants got from the EVDES is 18, the highest score is 84, and the average score is  $47.4 \pm 14.1$ .

The students, who stated that they had no problems with internet access during the distance education process, constitute only 17.9% of the participants. The high frequency of students experiencing problems may be reducing the motivation of students to take online classes. As a matter of fact, the EVDES scores of those who do not have internet related problems are significantly higher than those who rarely, sometimes, often and always have problems. As the frequency of experiencing problems increases, a decrease is observed in the scale score. In the study in which 2112 university students participated in the north of Jordan, when asked the reasons that prevent students from attending online classes, 50% of the students answered bad internet connections.<sup>7</sup> Seventy one point seven percent of the participants state that they have other family members participating in distance education. The fact that more family members are participating in distance education reveals the necessity of having a technical infrastructure and suitable environment in the household for an efficient education. As a matter of fact, in the present study, the scale scores of those who did not have other family members who received distance education were found to be significantly higher than those with scale scores.

Fifty four point seven percent of the students stated that their study time decreased with distance education, and 74.2% stated that there were elements that would disrupt their concentration in the environment they participated in distance education. These situations can distract students from the discipline of listening and studying. Although distance education removes the time that students lose for transportation, this situation cannot be turned into an advantage because it keeps the student away from the study discipline. In addition, 67.0% of the participants think that distance education makes people lazy, while 72.3% of them express that face-to-face education enables them to have a better discipline. It is also effective that applied courses have an important place in these participants' thoughts, especially in medical school education. 83.1% of the students stated that they did not find practical lessons given by distance education beneficial.

Seventy-one percent of the participants feel anxious about their postgraduate medical life due to distance education, and 60.6% do not think they are inclined to distance education. Despite this, 55.4% of the participants have concerns about face-to-face training during the pandemic period. Although the students are not satisfied with the education they receive with the distance education method, they mostly avoid face-to-face education under pandemic conditions.

In a similar study conducted on medical faculty students, 51.8% of the participants thought that the educators did not interact adequately with the students during the distance education process, while 69.6% of the participants in the present study believe that there was a communication gap between students and educators in distance education.<sup>8</sup> While 33.7% of the participants in the study believe that distance education will take place more in medical education in the future, this frequency constitutes only 20% of the participants in the same study.

While 72.3% of the participants in the study believed that face-to-face education enables them to have a better discipline, 86.7% of them believe that distance education limits socialization among students, similarly, 65.6% of the participants in the study of Atılgan et al. 75.5% stated that distance education increased social isolation.<sup>8</sup>

In a similar study conducted by Karagöz et al.with medical faculty students, 82.1% of the participants stated that they studied less than the old working order in the distance education process, while 7.1% of the students did not change and 10.7% more it was found to be studying.<sup>9</sup> Similarly, in the present study, 54.7% of the participants stated that the study time decreased. In another study conducted in Pakistan, 71.4% of the participants disagreed with the idea that online education is more motivating than face-to-face education.<sup>10</sup>

In the present study, the average score the students got from the EVDES is 47.4 In similar studies using the same scale, the average score was 48.2 for classroom and mathematics teacher students, 48.2 for music teacher students, and 46.4 for English teacher students.<sup>11-13</sup> However, in a similar study conducted with nursing undergraduate students, where practical training has an important place, such as medical faculty, the mean scale score was found to be 32.9.<sup>14</sup> However, this difference between the scores may be due to the fact that practical training in the nursing department is even more prominent. As a separate difference, the research data in the study conducted with nursing students were collected in May 2020 at the beginning of the pandemic period, while the data of the current study were collected in March 2021. In the first periods of transition to distance education, technical conditions may be more inadequate, trainers may be more unprepared, and medical faculty students may have become a little more accustomed to distance education because they have been receiving distance education for a year. Similar to the current study, the average score obtained from the scale was 46.4 in another study conducted using the EVDES among undergraduate students of the nursing department.<sup>15</sup>

The research results cannot be generalized to all medical faculty students, since the sample selection was not made in the study and 80% of the population could not be reached. It only covers students participating in the study. However, the strengths of this study are the questioning of students 'views on distance education, which is a current and important issue, through a scale with validity and reliability, and a carefully prepared questionnaire to examine various aspects that may affect students' views on distance education.

In conclusion; female gender, being a semester student, attending less than half of the lessons, having problems with internet connection, having another individual taking distance education in the family, the duration of study being reduced during the distance education period, the elements that will disturb concentration in the distance education period, Changes in sleep patterns, lack of concerns about starting face-to-face education during the pandemic period, and feeling anxious about the life of medicine due to distance education negatively affected the views of the medical faculty students participating in the study about distance education. These issues should be taken into account in more comprehensive studies to be planned. *Ethics Committee Approval:* Permission was obtained from Sakarya University Non-Invasive Ethics Committee, (Date: 02.03.2021, decision no: 90). This study was carried out in accordance with international declarations, guidelines, etc.

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