



Attitudes and Opinions of Atatürk University Medical School Students Towards Distance Education due to the COVID-19 Pandemic

Atatürk Üniversitesi Tıp Fakültesi Öğrencilerinin COVID-19 Pandemisi Nedeniyle Uzaktan Eğitime İlişkin Tutum ve Görüşleri

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ABSTRACT

Aim: During the Coronavirus disease-2019 (COVID-19) pandemic, formal education was suspended and distance education was introduced in many countries to reduce the risk of viral transmission. This study aimed to evaluate the attitudes and opinions of medical students who received distance education due to the COVID-19 pandemic.

Materials and Methods: In the spring semester of the 2019-2020 academic year, 331 students who received distance education at the faculty of medicine were evaluated. A descriptive and cross-sectional study was conducted by applying the Socio-demographic Data Form and the Scale for the Perception of Distance Education Students About Distance Education.

Results: Of the participants, 67.7% (n=224) were female, 61.3% (n=203) were 1st grade, 14.8% (n=49) were 2nd grade, 10.3% (n=34) were 3rd grade, 9.4% (n=31) were 4th grade and 4.2% (n=14) were 5th grade students. Personal suitability and efficiency response scores were significantly higher in 3rd-grade students compared to the other grades, but no significant difference was observed between the predisposition factor scores (p<0.001, p<0.001, p=0.109, respectively). The efficiency factor response scores of those who were only children were significantly higher than in those with four or more siblings (p=0.014). Those who had their own room had higher personal suitability and efficiency scores than those who did not (p<0.001, p<0.001, respectively). The predisposition factor scores of the students who had lost relatives due to COVID-19 were statistically significantly higher than the other participants (p=0.046).

Conclusion: The socio-demographic characteristics of students participating in distance education significantly affect the effectiveness of distance education, teaching, personal suitability, and students' predisposition.

Keywords: COVID-19, pandemic, distance education, medical students

ÖZ

Amaç: Koronavirüs hastalığı-2019 (COVID-19) pandemisi sürecinde viral bulaşma riskini azaltmak için birçok ülkede örgün eğitime ara verilmiş ve uzaktan eğitime geçilmiştir. Bu çalışmada COVID-19 pandemisi nedeniyle uzaktan eğitim alan tıp öğrencilerinin uzaktan eğitime yönelik tutum ve görüşlerinin değerlendirilmesi amaçlanmıştır.

Gereç ve Yöntem: 2019-2020 eğitim-öğretim yılı bahar yarıyılında tıp fakültesinde uzaktan eğitim alan 331 öğrenci değerlendirildi. Sosyodemografik Veri Formu ve Uzaktan Eğitim Öğrencilerinin Uzaktan Eğitime Yönelik Görüşleri Ölçeği uygulanarak tanımlayıcı ve kesitsel bir çalışma yapıldı.

Bulgular: Katılımcıların %67,7'si (n=224) kadın, %61,3'ü (n=203) 1. sınıf, %14,8'i (n=49) 2. sınıf, %10,3'ü (n=34) 3. sınıf, %9,4'ü (n=31) 4. sınıf ve %4,2'si (n=14) 5. sınıf öğrencisi idi. Kişisel uygunluk ve etkinlik cevap puanları 3. sınıf öğrencilerinde diğer sınıflara göre anlamlı olarak daha yüksek bulunurken, yatkinlik faktör puanları arasında anlamlı bir fark gözlenmedi (sırasıyla p<0,001, p<0,001, p=0,109). Tek çocuk olanların etkinlik faktörü yanıt puanları, dört ve daha fazla kardeşi olanlara göre anlamlı olarak daha yüksekti (p=0,014). Kendi odası olanların olmayanlara göre kişisel

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uygunluk ve etkinlik puanları daha yüksekti (sırasıyla $p<0,001$, $p<0,001$). COVID-19 nedeniyle yakınına kaybetmiş öğrencilerin yatkinlik faktörü puanı diğer katılımcılara göre istatistiksel olarak anlamlı derecede daha yüksekti ($p=0,046$).

Sonuç: Uzaktan eğitime katılan öğrencilerin sosyodemografik özellikleri uzaktan eğitimin etkinliğini, öğreticiliğini, kişisel uygunluğunu ve öğrencilerin yatkinliğini önemli derecede etkilemektedir.

Anahtar Kelimeler: COVID-19, pandemi, uzaktan eğitim, tıp öğrencileri

INTRODUCTION

The Coronavirus disease-2019 (COVID-19) pandemic, which started in December 2019 in the Hubei province of Wuhan, China, and spread rapidly across the globe, has caused a major crisis in the education system as well as in health, economy, and social areas. In order to contain the pandemic, many countries have had to temporarily suspend face-to-face education in schools. Alternative methods have been investigated for the continuation of interrupted educational activities^{1,2}. As an alternative to formal education in educational institutions, distance education has been introduced in many countries and in our country. In its data dated April 7, 2020, the United Nations Educational, Scientific, and Cultural Organization reported that approximately 91% of the total student population in more than 188 countries affected by the pandemic stayed away from school. In Turkey, the first COVID-19 case was detected on March 11, 2020, and schools were closed and distance education was started as in other countries³.

Distance education is the provision of teaching activities by using tools such as satellite, video, and computer by having students and teachers in different places^{4,5}. Distance education has cheaper, more flexible, and individualized features compared to face-to-face education^{6,7}. However, it has many disadvantages such as not being accessible by everyone at any time due to its dependence on technology, decreased socialization of students, ineffectiveness in developing skills and attitudes, problems with practical courses, and inadequate education of students who have not developed the habit of self-study⁸. The distance education system, which was suddenly and urgently introduced in universities in the world and in our country due to the coronavirus outbreak, may cause problems, especially in the education of practice-oriented faculties such as medical faculties. In this study, we evaluated the attitudes and opinions of medical faculty students who received distance education during the COVID-19 pandemic towards distance education.

MATERIALS AND METHODS

Approval was obtained from the Atatürk University Faculty of Medicine Local Clinical Research Ethics Committee for our study (date: 17/12/2020 number: B.30.2.ATA.0.01.00/324). In addition, permission was obtained for the use of the Scale for the Perception of Distance Education Students About Distance Education. This study was a cross-sectional and descriptive

study designed in accordance with the Declaration of Helsinki. Medical faculty students of grades 1-5, who accepted to participate in the study and received distance education, were included in the study. Although the 4th and 5th grade students were in the internship period, they continued all their education online. The 6th grade students were not included in the study because they continued face-to-face education. A message was sent to the students for informing them about the study and the survey link of the study was shared on the online platform. The informed consent text indicating that the participants agreed to participate in the study was on the first page of the questionnaire, and after the consent was given, the survey questions could be started. In the spring semester of the 2019-2020 academic year, 331 students in the 1st, 2nd, 3rd, 4th, and 5th grades, who received distance education, agreed to participate in the study and gave consent. The students were asked the questions of two scales, the Socio-demographic Data Form and the Scale for the Perception of Distance Education Students About Distance Education.

The Socio-demographic Data Form was a form that determined the data on the descriptive characteristics of the students. In this form, participants were asked about their age, gender, grade level, marital status, smoking status, having children, smoking, number of siblings, parents' education level, family structure, economic status, number of people living at home, presence of a room of their own, family structure, economic status, place of residence, presence of a device for online access, frequency of problems in accessing the internet, and whether their relatives had died due to COVID-19.

The Scale for the Perception of Distance Education Students About Distance Education was developed by Yıldırım et al.⁹ in 2014 at Atatürk University, Faculty of Open and Distance Education. It was developed to determine the views of distance education students towards distance education. The Cronbach's alpha coefficient of the internal consistency analysis of the whole scale was calculated as 0.864. In our study with the medical faculty students at our university, Cronbach's alpha coefficient was calculated as 0.728. The scale consists of 4 subgroups: personal suitability, effectiveness, instructiveness, and familiarity. The whole scale consists of 18 questions, including 6 questions on personal suitability, 5 questions on effectiveness, 4 questions on instructiveness, and 3 questions on familiarity. The answers to the survey questions are scored from one (never) to four (always). The total score varies

between 18 and 72. High scores indicate a positive attitude and opinion level.

Statistical Analysis

The data of the study were evaluated with IBM Statistical Package for the Social Sciences 22.0 statistical package program. Data were presented as mean, standard deviation, median, minimum, maximum, percentage, and number. The Shapiro Wilk-W test and Kolmogorov-Smirnov test were used to evaluate the normality of the distributions of continuous variables. The independent sample t-test was used for comparisons between two independent groups with normal distribution and the Mann-Whitney U test was employed for comparisons between two groups without normal distribution. Comparisons of continuous variables in more than two independent groups with normal distribution were made by the ANOVA test and comparisons of groups without normal distribution were made by the Kruskal-Wallis test. Post-hoc tests after the ANOVA test were performed using the Tukey's test when variances were homogeneous and Tamhane's T2 test when variances were not homogeneous. The Kruskal-Wallis One-Way ANOVA (k samples) test was applied for post-hoc tests after the Kruskal Wallis test. The statistical significance limit was accepted as $p < 0.05$.

RESULTS

In our study, 331 participants, who were 1st, 2nd, 3rd, 4th, and 5th-grade students of the faculty of medicine at our university, were included. The responses of the participants to the socio-demographic data form are shown in Table 1. The scores for the factors in the Scale for the Perception of Distance Education Students About Distance Education are shown in Table 2.

In our study, no significant relationship was found between gender and personal suitability, effectiveness, instructiveness, and familiarity factors ($p=0.94$, $p=0.36$, $p=0.49$, $p=0.06$, respectively). There was no significant relationship between the economic status of the students and the factors of personal suitability, effectiveness, and instructiveness ($p=0.086$, $p=0.051$, $p=0.528$, respectively). The familiarity factor was found to be higher in participants with poor economic status, compared to other participants ($p=0.01$).

The total score of the effectiveness factor was found to be statistically significantly higher in those with only one child (2.43 ± 0.68) than in those with four or more siblings (1.75 ± 0.8) ($p=0.014$). No statistically significant relationship was found between the number of siblings and the other factors for the opinions towards distance education (personal suitability $p=0.098$; instructiveness $p=0.061$; familiarity $p=0.100$). The relationship between the participants' grade level, the number of people sharing the house and the presence of a

Table 1. Socio-demographic characteristics of the participants

Changing		n (%)
Gender	Man	224 (67.7)
	Woman	107 (32.3)
Grade	1. Grade	203 (61.3)
	2. Grade	49 (14.8)
	3. Grade	34 (10.3)
	4. Grade	31 (9.4)
	5. Grade	14 (4.2)
Marital status	Married	1 (0.3)
	Single	330 (99.7)
Having any child	Yes	1 (0.3)
	No	330 (99.7)
Cigarette use	Yes	37 (11.2)
	No	275 (83.1)
	Use-away	19 (5.7)
Number of siblings	0	20 (6)
	1	105 (31.7)
	2	88 (26.6)
	3	79 (23.9)
	4 and more	39 (11.8)
Mother's educational level	Illiterate	16 (4.8)
	Primary school	160 (48.3)
	High school	54 (16.3)
	University	86 (26)
	Master's degree	15 (4.5)
Father's educational level	Illiterate	2 (0.6)
	Primary school	70 (21.1)
	High school	87 (26.3)
	University	120 (36.3)
	Master's degree	52 (15.7)
Family structure	Mother and father live together	305 (92.1)
	Mother and father live separately	4 (1.2)
	Mother and father divorced	9 (2.7)
	Mother passed away	10 (3)
	Father passed away	2 (0.6)
	Father and mother passed away	1 (0.3)
Economic situation	Poor	5 (1.5)
	Middle	213 (64.4)
	Good	113 (34.1)
The number of people sharing the same house	Living alone	4 (1.2)
	Sharing house with 1 person	21 (6.3)
	Sharing house with 2 persons	40 (12.1)
	Sharing house with 3 persons	73 (22.1)
	Sharing the house with 4 or more people	193 (58.3)

Table 1. Continued

Changing		n (%)
Presence of own room	Yes	245 (74)
	No	86 (26)
The place of residence	Village, town	18 (5.4)
	District	63 (19)
	City	63 (19)
	Big city	187 (56.5)
Online device presence	Yes	306 (92.4)
	No	25 (7.6)
Frequency of having problems with internet access	Never	71 (21.5)
	Sometimes	231 (69.7)
	Often	23 (7)
	Always	6 (1.8)
Death of a relative due to COVID-19	Yes	46 (13.9)
	No	285 (86.1)

COVID-19: Coronavirus disease-2019

Table 2. Scores for the factors of the scale for perception of distance education students about distance education

Factor	Score
Personal suitability	2.35±0.83
Efficiency	2.03±0.8
Instructiveness	3.19±0.79
Familiarity	1.99±0.76

private room, and the factors in the Scale for the Perception of Distance Education Students About Distance Education is shown in Table 3.

There was no statistical difference between the groups of smokers, non-smokers, and students who quit smoking in the personal suitability factor and teaching factor for distance education (p=0.096, p=0.226, respectively). The response scores of the effectiveness factor were higher in smokers and non-smokers than in smokers (p=0.039). The predisposition response scores were higher in smokers compared to non-smokers (p=0.010).

The familiarity factor score was significantly higher (p=0.046) in the group who lost their relatives due to COVID-19 (2.15±0.70) compared to the group who did not (1.96±0.77). There was no significant difference between the two groups in terms of other factors (personal suitability p=0.993; effectiveness p=0.881; instructiveness p=0.911).

Whether the students had personal devices that they could connect to distance education or not did created a significant difference in terms of personal suitability, effectiveness, instructiveness, and familiarity scores (p=0.877, p=0.885, p=0.852, p=0.062, respectively). The relationship between the education level of the student's fathers and their views towards distance education could not be evaluated due to the insufficient sample size in the subgroups. There was no statistically significant relationship between the place where the students lived and their views on distance education (personal suitability p=0.157; effectiveness p=0.742; instructiveness p=0.910; familiarity; p=0.787). There was no

Table 3. The relationship between the grades of the participants, the number of people sharing the house and the existence of a private room, and the scale for the perception of distance education students about distance education

Factor		Personal suitability	Efficiency	Instructiveness	Familiarity
Grade	1. Grade	2.25±0.77	1.95±0.75	3.30±0.72	1.94±0.75
	2. Grade	2.18±0.67	1.87±0.58	3.26±0.70	2.11±0.77
	3. Grade	3.05±0.95	2.75±0.93	2.54±0.98	2.09±0.87
	4. Grade	2.30±0.78	1.95±0.82	3.15±0.79	1.82±0.58
	5. Grade	2.77±0.96	2.24±0.93	3.02±0.76	2.36±0.73
p value		<0.001	<0.001	<0.001	0,109
Home sharing	Living alone	3.29±0.84	3.40±0.95	2.94±1.18	2.50±1.55
	Sharing house with 1 person	2.95±0.68	2.53±0.64	2.63±0.68	1.95±0.55
	Sharing house with 2 persons	2.65±0.86	2.13±0.75	3.05±0.71	2.18±0.76
	Sharing house with 3 persons	2.50±0.83	2.14±0.82	3.11±0.85	1.96±0.57
	Sharing the house with 4 or more people	2.14±0.76	1.89±0.76	3.32±0.75	1.95±0.81
p value		<0.001	<0.001	<0.001	0.415
Existence of private room	Yes	2.46±0.83	2.12±0.80	3.12±0.80	1.98±0.77
	No	2.04±0.75	1.77±0.73	3.38±0.70	2.00±0.71
p value		<0.001	<0.001	0.009	0.65

statistically significant relationship between the frequency of students having problems while connecting to the Internet and their views on distance education (personal suitability $p=0.792$, effectiveness $p=0.805$, instructiveness $p=0.643$, familiarity $p=0.209$).

DISCUSSION

In our study, we found that attitudes and opinions on distance education were associated with many socio-demographic characteristics other than gender and place of residence. We found that the low socio-economic level that caused the increase in the number of individuals sharing the same house and not having their own room reduced compliance with distance education. We detected that smokers and those who lost their relatives due to COVID-19 were more compatible with distance education.

It was stated that gender had no effect on the effectiveness of distance education^{10,11}. In a study conducted by Bircan et al.¹² in 2018 with 3413 faculty students who took compulsory courses offered by Cumhuriyet University Distance Education Center (UZEM), it was found that gender did not affect the opinions towards distance education. In 2020, 769 students at Georgia State University School of Public Health were evaluated due to COVID-19 and it was determined that gender did not make a difference in students' views on distance education¹³. In our study, we also found that gender did not affect attitudes and views toward distance education, in accordance with the literature. These analyses help us to conclude that distance education has a common effect on students without gender discrimination.

In the literature, there are studies reporting different results in terms of the relationship between the grade of student and the students' views on distance education^{14,15}. In our study, the scores of personal suitability and effectiveness factors were found to be higher in the 3rd-grade students compared to other-grade students. We thought that this was related to the 3rd-grade course curriculum and the effect of the face-to-face education they received in years 1 and 2. Again, the fact that 3rd-grade students did not have as much practice-based education as the 4th and 5th-grade students may have led to such a result.

In a study conducted in 2020, Başaran et al.¹⁶ reported that the presence of siblings negatively affected distance education. In our study, it was found that the activity factor was negatively affected as the number of siblings increased. We also determined that the increase in the number of people sharing the house also negatively affected the personal suitability and effectiveness factors of distance education. The high number of individuals in the participants' families or the number of people sharing the house causes the courses not to be followed

regularly due to the common use of distance education materials and the distance education environment. Therefore, negative attitudes towards distance education emerge as the number of siblings and house-sharers increases.

The high number of siblings or house-sharers caused by the socio-economic situation limits the necessary opportunities in distance education and creates a negative situation towards distance education. In our study, in contrast to the other factors, the teaching factor score increased as the number of people sharing the house increased. Although there are no data on this in the literature, we have attributed this to the fact that students who share a house support each other in the learning process.

In our study, we determined that the personal suitability and efficiency scores of the participants who had their own room were higher. In a study conducted by Kumaş¹⁷ at Uşak University in 2020 to evaluate the effect of distance education on students, it was found that the lack of a personal room and sharing the room with other individuals negatively affected education. Environmental factors are the most important factors in the continuation of a qualified distance education process in the home environment. These factors should become an interactive whole in terms of physical, mental, social, and psychological aspects that students have during the learning process. In light of literature and our study, in order for students to have an effective and qualified learning process, environmental factors should be organized in a direction suitable for the purpose.

In our study, the predisposition of smokers to distance education was found to be statistically significantly higher than non-smokers. We think that this result is due to the fact that distance education provides a more favorable environment for smoking. Bakhov et al.² revealed that students described the environment of distance education as more comfortable. We found that smokers who quit smoking thought that distance education was more effective than smokers. This may be due to the fact that smokers who quit smoking can use distance education more effectively due to their higher ability to control their personal impulses.

In a study conducted by Kirali and Alçı¹⁸ in 2016, evaluating 338 students at İstanbul Aydın University, there was a statistically significant difference between students' perceptions of distance education and whether they had their own computers. In addition, in a study conducted abroad, it was shown that technological infrastructure affected distance education^{13,19-20}. The fact that the presence of a personal device did not affect distance education factors in our study may be due to the fact that devices other than phones were meant as devices in our questionnaire, but distance education can also be connected with existing smartphones.

In our study, no statistically significant difference was found between the frequency of students having problems while connecting to the internet and the factors related to distance education. However, in a study, it was determined that students who did not experience problems with internet access had a higher predisposition to distance education and higher effectiveness in distance education²¹. This study revealed the importance of having regular access to the internet in order to participate in distance education effectively. The reason why our study gave opposite results may be that the students answered the questions independently of the frequency of internet problems.

In our study, no statistically significant difference was found between the place of residence of the students and the factors related to distance education. However, in a study conducted by Karyağdı and Yolcu²² on distance education in 2021, a significant relationship was found between the place of residence and distance education, and it was found that the frequency of following distance education courses for those living in rural areas was lower than those living in cities. In our study, the fact that there was no difference between the opinions of rural and urban residents on distance education may be due to the fact that internet access is becoming more widespread and the conditions of the infrastructure that will enable distance education in rural areas are improving day by day. In addition, Karyağdı and Yolcu²² found that the frequency of distance education follow-up for students living in rural areas was low, which may be due to the fact that there is a greater need for human labor in rural areas and the overlap between the work to be done in rural areas and the hours of education. In our study, the fact that the required manpower is decreasing day by day or the seasonal nature of the jobs in rural areas may have caused this difference not to emerge.

Face-to-face education may cause an increase in anxiety in bereaved students. In our study, we found that participants who lost their relatives due to COVID-19 were more prone to distance education to this situation.

Study Limitations

The limitation of our study is that the relationship between age and attitudes and opinions toward distance education could not be investigated, since most of the cases were in the same age range.

CONCLUSION

Shortly after the first COVID-19 case was detected in our country on March 11, 2020 (March 23, 2020), the Higher Education Council decided to continue distance education at

universities with digital facilities. Our age and this pandemic period we are in have made distance education a necessity. Our study revealed the effect of socio-demographic and psychosocial characteristics of Atatürk University Faculty of Medicine students on distance education with a scale whose reliability has been previously demonstrated. Therefore, it is important for distance education designers and implementers to optimize these factors.

Ethics

Ethics Committee Approval: Approval was obtained from the Atatürk University Faculty of Medicine Local Clinical Research Ethics Committee for our study (date: 17/12/2020 number: B.30.2.ATA.0.01.00/324).

Informed Consent: Consent form was filled out by all participants.

Peer-review: Externally peer-reviewed.

Authorship Contributions

Surgical and Medical Practices: A.T., S.S., Concept: S.S., Design: S.S., Data Collection or Processing: A.T., Analysis or Interpretation: A.T., S.S., Literature Search: A.T., Writing: A.T., S.S.

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