

## PAPER DETAILS

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# Investigation of the Opinions of the First-Year Students of Dentistry Who Go to Online Education on Anatomy Education After the Kahramanmaraş Earthquake

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## Abstract

**Aim:** The aim of the study was to examine the opinions of first-year dentistry students who switched to online education after the Kahramanmaraş earthquake on anatomy education.

**Material and Methods:** A total of 82 students, 38 males and 44 females, participated in the study. The questionnaire consisting of 14 questions was applied online. The questionnaire was Likert-type and calculated as flat coded questions (completely disagree 1 point, disagree 2 points, no idea 3 points, agree 4 points, completely agree 5 points). The questions were calculated as reverse coded because they expressed negativity. There were 13 questions in the questionnaire, except for the open-ended and gender-reporting question, and the highest score was 65 and the lowest score was 13.

**Results:** The expected frequency of completely agree is 15.3 (40.2%), while the observed frequency is 21 (55.3%). Statistically, there is a difference between expected and observed values ( $p < 0.05$ ). In the question "I participated in anatomy courses taught online", the expected frequency of completely agree was 1 (2.3%) while the observed frequency was 0 (0%). Statistically, there is a difference between expected and observed values ( $p < 0.05$ ).

**Conclusion:** Since the anatomy course has too many subjects, the subject contents are difficult to learn, and it is also a basic course, it is important to conduct theoretical and practical lessons face-to-face instead of online.

**Keywords:** Earthquake, online education, anatomy

## INTRODUCTION

Among the goals of higher education institutions is to educate students to be able to take responsibility in the relevant field and to be able to provide active and effective service (1-3). Education is an important process that is living and changing due to its structure and is subject to changes from time to time (4).

Anatomy is one of the basic disciplines of medical education. It is the oldest medical science that provides a lot of information about the human body. It examines the structure, functions, position, and normal shape of the

human body (5). Anatomy is a visual science and has an important place in the education and training programs of medical and dental faculties (6). Feedback from students can be shown as an important guiding and driving force during all these changes. Feedback from students has an important place in overcoming the difficulties to be experienced in the face of changes in educational programs and in ensuring better communication between faculty members and students (7). The degree of acquisition of the knowledge aimed to be gained by the students with the anatomy course is the basis for the courses and studies that the students will take in the following years. From this

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point of view, students should understand the subjects given within the scope of this course and be well-trained (8). Factors such as the difficulty in transferring knowledge to students, the difficulties brought by practical education, and the length of the education process have entered a process of change with technology (9). These changes have gained a new dimension with the development of technology and the diversification of instructional materials (5,10).

In our study, the opinions of 82 students studying in the first year of Ordu University Faculty of Dentistry were taken. In the second semester of the first year at Ordu University Faculty of Dentistry, anatomy education is given as 2 hours theoretical and 2 hours practical courses weekly. 1 midterm exam (midterm), 1 final exam and 1 make-up exam are held. Exams are evaluated out of 100 points. 40% of the passing grade is the midterm exam and 60% is the final exam. Students with an average of 60 and above are considered successful. Theoretical courses are lectures with slide support and applied courses are model work and lectures.

The aim of the study was to examine the effects of the first-year dentistry students who received face-to-face education on their anatomy education when they switched to online education after the February 6, 2023 Kahramanmaraş earthquake.

## MATERIAL AND METHOD

Before starting the study, ethics committee permission dated 09.06.2023 and numbered 165 was obtained from Ordu University Clinical Research Ethics Committee. In the 2022-2023 academic year, 82 first-year students studying at Ordu University Faculty of Dentistry were included. February 6, 2023 the students who received face-to-face education until the Kahramanmaraş-based earthquake were asked about their opinions on anatomy theoretical and practical courses with the transition to online education after the earthquake. In the study, previous student surveys were utilized while creating the measurement tool.

In the study, 14 questions were asked, one of which was open-ended. The answers to the questions were marked as completely disagree, disagree, no idea, agree, and completely agree. For the safety of the study, students were asked not to write their names and surnames.

### Statistical Analysis

IBM SPSS 26 package program was used for statistical analysis. The data in the study were analyzed for normal distribution by considering 5 parameters (Skewness-Kurtosis, Std/Mean, Q-Q Plots, Histogram and Shapiro Wilk Test). Normally distributed parameters with sufficient data were shown as Mean±Std and Independent Samples T Test was used for pairwise comparisons. Fisher's Exact Test (smallest expected value <5) was applied in the frequency analysis of the survey questions according to

gender. The questions with the highest and lowest scores were shown in the frequency distribution graph according to gender. In the study,  $\alpha=0.05$  and  $p<\alpha$  were considered significant.

## RESULTS

Of the 82 students who participated in the study, 38 were male and 44 were female (Table 1).

Table 1. Total score by sex

	Score	Sig. (p)
Female	45.19±9.86	0.149
Male	41.64±9.34	

Parametric data were shown as Mean±Standard Deviation (mean±std) and Independent Samples T Test was used for statistical analysis

The Likert-type questionnaire was calculated as flat coded questions (completely disagree 1 point, disagree 2 points, no idea 3 points, agree 4 points, s completely agree 5 points). Since some questions had negative expressions, they were calculated as reverse coded. Reverse-coded questions were calculated as (completely agree 1 point, agree 2 points, no idea 3 points, disagree 4 points and completely disagree 5 points). There were 13 questions in the questionnaire; the highest score was 65 and the lowest score was 13 (Table 2). When the total score was analyzed according to gender, it was seen that the score of women was 45 and 41 for men and the p-value was 0.149. There is no difference between male and female students.

There is no statistical difference between genders in the total score of the questionnaire ( $p>0.05$ ).

The expected frequency of completely agree is 15.3 (40.2%), while the observed frequency is 21 (55.3%). Statistically, there is a difference between expected and observed values ( $p<0.05$ ). In the question "I participated in online anatomy courses", the expected frequency of completely agree was 1 (2.3%) while the observed frequency was 0 (0%). Statistically, there is a difference between expected and observed values ( $p<0.05$ ).

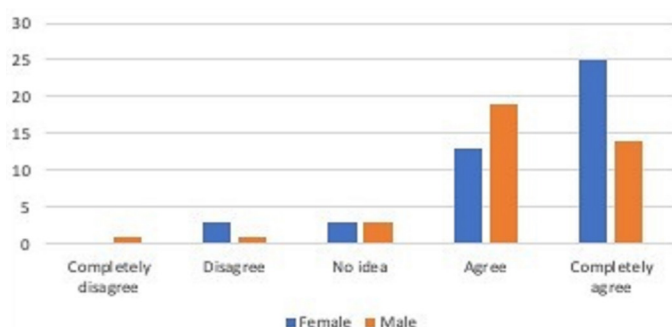
In this study, the question with the highest score was "I watched video recordings of online anatomy lectures that I could not attend" (Figure 1). While 25 students in the female group and 14 students in the male group answered completely agree (5 points), 13 students in the female group and 19 students in the male group answered agree (4 points).

The question with the lowest score in this study was "The lack of face-to-face interaction make learning difficult" (Figure 2). This question was reverse-coded and scored. While 10 students in the female group and 13 students in the male group answered completely agree (1 point), 13 students in the female group and 11 students in the male group answered agree (2 points).

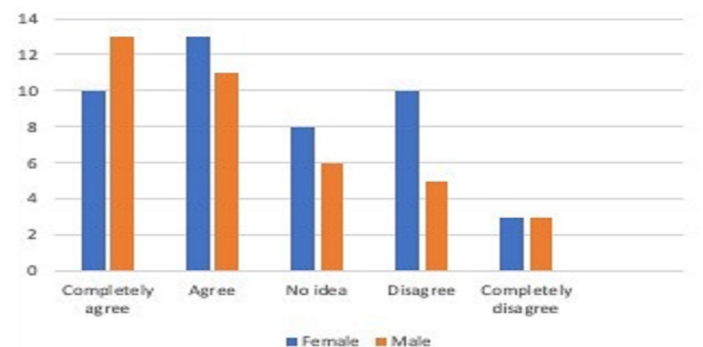
Table 2. The questions were shown as (%) by sex

		Completely disagree	Disagree	No idea	Agree	Completely agree	Sig. (p)
<b>Should have continued face-to-face training after the earthquake disaster *</b>	Female	25	22.7	20.5	27.3	4.5	0.598
	Male	39.5	23.7	10.5	23.7	2.6	Fischer's Exact Test
<b>After the earthquake disaster, it is the right decision for schools to switch to online education</b>	Female	4.5 <sup>a</sup>	18.2 <sup>a</sup>	18.2 <sup>a</sup>	31.8 <sup>a</sup>	27.3 <sup>a</sup>	0.045
	Male	0 <sup>a</sup>	18.4 <sup>a</sup>	7.9 <sup>a</sup>	18.4 <sup>a</sup>	55.3 <sup>b</sup>	Fischer's Exact Test
<b>I prefer to teach theoretical anatomy courses face to face *</b>	Female	9.1	11.4	27.3	29.5	22.7	0.724
	Male	18.4	13.2	18.4	26.3	23.7	Fischer's Exact Test
<b>I prefer to teach theoretical anatomy courses on an online platform</b>	Female	13.6	22.7	31.8	18.2	13.6	0.676
	Male	18.4	23.7	18.4	18.4	21.1	Fischer's Exact Test
<b>I participated in online anatomy lectures</b>	Female	20.5 <sup>a</sup>	20.5 <sup>a</sup>	0 <sup>a</sup>	47.7 <sup>a</sup>	11.4 <sup>a</sup>	0.042
	Male	5.3 <sup>a</sup>	28.9 <sup>a</sup>	18.4 <sup>a</sup>	4.7 <sup>a</sup>	0 <sup>b</sup>	Fischer's Exact Test
<b>I watched video recordings of online anatomy lectures that I could not attend</b>	Female	0	6.8	6.8	29.5	56.8	0.177
	Male	2.6	2.6	7.9	50	36.8	Fischer's Exact Test
<b>Online teaching of theoretical anatomy lessons was more useful as the video recordings could be watched again</b>	Female	4.5	6.8	22.7	36.4	29.5	0.855
	Male	5.3	10.5	15.8	31.6	36.8	Fischer's Exact Test
<b>Online teaching of anatomy courses saves time</b>	Female	6.8	20.5	15.9	31.8	25	0.475
	Male	2.6	13.2	18.4	23.7	42.1	Fischer's Exact Test
<b>There was no difference in the quality of education with online or face-to-face teaching of theoretical anatomy courses</b>	Female	22.7	29.5	29.5	11.4	6.8	0.736
	Male	15.8	39.5	21.1	13.2	10.5	Fischer's Exact Test
<b>Lack of face-to-face interaction made learning difficult*</b>	Female	6.8	22.7	18.2	29.5	22.7	0.734
	Male	7.9	13.2	15.8	28.9	34.2	Fischer's Exact Test
<b>It was the right decision to make the theoretical anatomy course exam online</b>	Female	6.8	11.4	13.6	25	43.2	0.658
	Male	2.6	13.2	5.3	26.3	52.6	Fischer's Exact Test
<b>The online anatomy course provides a healthy flow of questions and answers</b>	Female	6.8	13.6	25	38.6	15.9	0.622
	Male	0	15.8	21.1	42.1	21.1	Fischer's Exact Test
<b>The theoretical anatomy lectures given online were sufficient</b>	Female	2.3	9.1	13.6	54.5	20.5	0.518
	Male	0	2.6	15.8	68.4	13.2	Fischer's Exact Test

The difference between expected and observed frequencies according to gender in the questionnaire parameters was evaluated by Chi-Square test. The same letters indicate same group and different letters indicate different groups



**Figure 1.** I watched video recordings of online anatomy lectures that I could not attend



**Figure 2.** The lack of face-to-face interaction made learning difficult

## DISCUSSION

February 6, 2023 The earthquakes centered in Kahramanmaraş affected the education process of universities in the region, as in every field. After the disaster, students' education was disrupted primarily due to the lack of suitable conditions for shelter and studying. Previously, higher education switched to online education on March 6, 2020 due to the COVID-19 pandemic.

The number of dental faculties in Türkiye is increasing and there are differences between them regarding the number of students, buildings, technical equipment and academic staff. Feedback in education is made to get students' opinions for observations, changes and improvement studies related to the education process. In this context, student feedback helps instructors review the educational process and is used by administrators as a source of data on the programs implemented (11). Determining how the quality of education services is perceived by students indicates that the university administration attaches importance to quality studies in education.

Çan et al. In a study, 60 medical and 74 dental students were asked an online questionnaire consisting of four questions. According to the results of the survey, 81.3% of the students expressed anatomy courses with a concrete concept and 18.7% with an abstract concept. The reason for this is that the anatomy course is effective in learning the human body, which consists of tangible, visible structures (12). The study also found that the anatomy course was a major source of burden and stress for students studying dentistry. In addition, almost all students felt that the course was important. The study emphasised the importance of making the anatomy course attractive, avoiding unnecessary detail and detail, and focusing on clinical situations that they will use in their professional lives (12).

In our study, 22.7% of the women completely agreed and 29.5% agreed with the question "lack of face-to-face interaction makes learning difficult", while 34.2% of the men completely agreed and 28.9% agreed.

Mobile learning and e-learning models were developed with the help of technology. A comprehensive strategy for online learning in disaster situations was developed in cooperation with all institutions. This strategy includes making improvements in access to education during disasters, organizing activities to inform students and their families, strengthening the infrastructure, and equipping educators. Considering all these situations, the Kahramanmaraş earthquake brought the importance of online education back to the agenda. Teli et al. argue that in order to make the education system more efficient, appropriate designs and comprehensive strategies should be developed by considering the needs of the student (13).

Singal et al. investigated the challenges of digital anatomy education in India in 2020 among dental and medical students. 58% of the participants stated that they preferred video-recorded distance education (14).

Kelsey et al. concluded that students could pause and resume the video according to their own pace of study, replay the recording, and be free to understand the lesson (15).

Turhan and Yakut asked 64 physiotherapy students the question "I prefer to listen to anatomy lectures on the internet", 54.7% of the students chose to disagree and completely disagree (16).

Similarly, in our study, 52.2% of women and 63.1% of men agreed with the question "lack of face-to-face interaction makes learning difficult". Looking at the survey responses, the participants think that the decision to switch to online education is not beneficial. In addition to the positive effects of online education, it was concluded that participation in anatomy courses taught online was not achieved at the desired rate. When the lowest-scoring answer was evaluated, it was concluded that online education made learning difficult.

Pamay et al. in their 2017 study, they asked the question of how many hours a week dentistry students spend in the anatomy laboratory in North American countries. The rate of 62.50% choosing more than 4 hours and 18.75% choosing 4 hours shows the importance they attach to anatomy practical training (17).

## CONCLUSION

As a result, satisfaction levels with anatomy courses were examined in our study. Dental students stated that anatomy education was more efficient face-to-face. Since the anatomy course has too many subjects, it is difficult to learn the subject content, and it is also a basic course, it is important to conduct theoretical and practical courses face-to-face instead of online.

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

**Ethical approval:** Before the study, ethical approval was obtained from the Ordu University Clinical Research Ethics Institution (No: 2023/165).

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