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Original Article

Evaluation of the satisfaction levels of medical students with anatomy education in the COVID-19 pandemic process

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Abstract

Objective: During the COVID-19 pandemic, online education was started in order to continue education in the medical faculty. The aim of our study is to evaluate the satisfaction degree with the Anatomy education of the students of the medical faculty of Hitit University during the COVID-19 pandemic.

Methods: 2nd and 3rd-grade medical faculty students of Hitit University were included in our study. A total of 146 students participated, 56 (38.4%) males and 90 (61.6%) females. The survey questions were prepared in Google forms and sent to the students online. The answers given to the survey were analyzed statistically according to grades.

Results: Among the disadvantages of taking anatomy lessons remotely, keeping away from the classroom environment was the most marked. Most of the students wanted post-pandemic education to continue with online education supported by face-to-face education (62; 42%). No statistically significant difference was found between the grades in the answers given to the questionnaire ($p>0.05$). The fact that there was no difference between the grades was an indication that they received anatomy education in line with the same quality and facilities in both grades.

Conclusion: The feedbacks of the medical faculty students will contribute to the efficiency of anatomy education and to increase the efficiency and quality of anatomy education.

Keywords: Anatomy, COVID-19, online education, students' opinions, survey.

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INTRODUCTION

The coronavirus outbreak was first detected in the city of Wuhan, Hubei province of China at the end of December 2019 (1) and was reported to the World Health Organization (WHO) Country Office in China on December 31, 2019, as pneumonia of unknown cause (2). This virus, which was first named SARS-COV-2 due to its genetic similarity to the SARS virus, was named COVID-19 (Coronavirus Disease 2019) on February 11, 2020 (3,4). The highly contagious virus has spread globally, especially in Europe, in a short time (WHO, 2020).

The COVID-19 pandemic has directly affected several fields such as tourism, sports activities, cultural events, business life, health, and education (5,6). Since COVID-19 can spread more easily, especially in crowded and closed environments, it has been decided to temporarily close schools, universities, and other educational institutions in several countries. With the announcement of the first case of COVID-19 seen in our country by the Ministry of Health on March 11, 2020, schools and educational institutions were temporarily closed as of March 25, 2020. The Council of Higher Education has taken decisions in terms of transforming the 2020 spring semester of the education process into distance education (7).

Anatomy education is accepted as the "basis of health sciences" in medical faculty education (8,9). Therefore, anatomy education is important for knowing the normal shape and structure of the body, the organs that make up the body, and the structural and functional relationships between these organs (10). In medical faculties, practical lessons are as important as anatomy theoretical lessons. Anatomy practice lessons using models and cadavers enable students to identify and examine the anatomical structures in the theoretical lessons by personally seeing them (11).

The transition to online education in Hitit University Faculty of Medicine due to the COVID-19 epidemic has caused practical lessons in anatomy education to not be given using models and cadavers in the laboratory. Online anatomy education at Hitit University is carried out in the form of audio theoretical and practical lecture presentations and online question-and-answer meetings.

Although the 2nd year medical faculty students received education completely online, the 3rd year students were able to receive face-to-face education in the first class.

The aim of this study is to evaluate the satisfaction levels of 2nd and 3rd year medical faculty students of Hitit University regarding anatomy education during the COVID-19 pandemic.

MATERIALS AND METHODS

Ethical approval of the present study was obtained from the Clinical Research Ethics Committee of the Hitit University Faculty of Medicine (decision no: 385 dated: 01/20/2021). Second and third-year medical students from the Faculty of Medicine at Hitit University are included in the present study. The survey prepared in "Google Forms" was sent to the students online via the "WhatsApp" application.

After giving information in the survey text, the students were asked to participate voluntarily. In order to increase the reliability of the feedback, the students who filled out the survey were told that they did not have to write their names. In this way, they were able to express their ideas more clearly without being under pressure.

In the first part of the questionnaire, descriptive questions such as class and gender were asked to the students. In the second part of the survey, questions describing the student's environment during the pandemic process and multiple-choice questions including his views on online anatomy education were asked. The third part evaluated the online anatomy education received during the COVID-19 pandemic. The questionnaire asked questions about satisfaction with 3-point Likert scales. In the questions in the third part, the statements of strongly disagree, disagree, undecided, agree and strongly agree were included. In two open-ended questions, the students were asked about the disadvantages and advantages of having online Anatomy education.

Statistical Analysis

Descriptive statistics were used in the analysis, and SPSS Statistics 22.0 (IBM Corp., Armonk, NY, USA) for Windows package program was used for analysis. The answers given by the students to each question were determined as percentages. The chi-square test was used to analyze whether the answers given by the students to the 5-point Likert scale questions differed according to class and gender. $p<0.05$ was considered statistically significant.

RESULTS

Fifty-six male (38.4%) and ninety female (61.6%) students participated in this study. Of the participants, 92 (63%) were 2nd-grade and 54 (37%) 3rd-grade students. While most of the students stayed in the dormitory (69:47%) and with their families (62;43%) during the COVID-19 pandemic, very few of them stayed in their own houses/ apartments (15;10%). Of the students and their first-degree relatives, 97 did not have anyone with COVID-19. During the COVID-19 pandemic, 63 (41%) of the students lived in metropolitan cities, 48 (32%) lived in the province and 41 (27%) lived in the district. They responded that they use computers (117; 80%) the most in the distance education process. The students the most marked the for disadvantages of online anatomy education, staying away from the classroom environment (Figure 1). The most common problem experienced by students during the COVID-19 process was mental health (stress, anxiety) disorders (Figure 2). While 42% of the students prefer to continue their education with hybrid education, 40% indicated that they prefer to continue with face-to-face education. The majority of the students during the online anatomy education process mostly benefited from Word, PDF, and PowerPoint presentations (Figure 3). The answers to the students to the questionnaire were examined, and no statistically significant difference was found between the second and third grades.

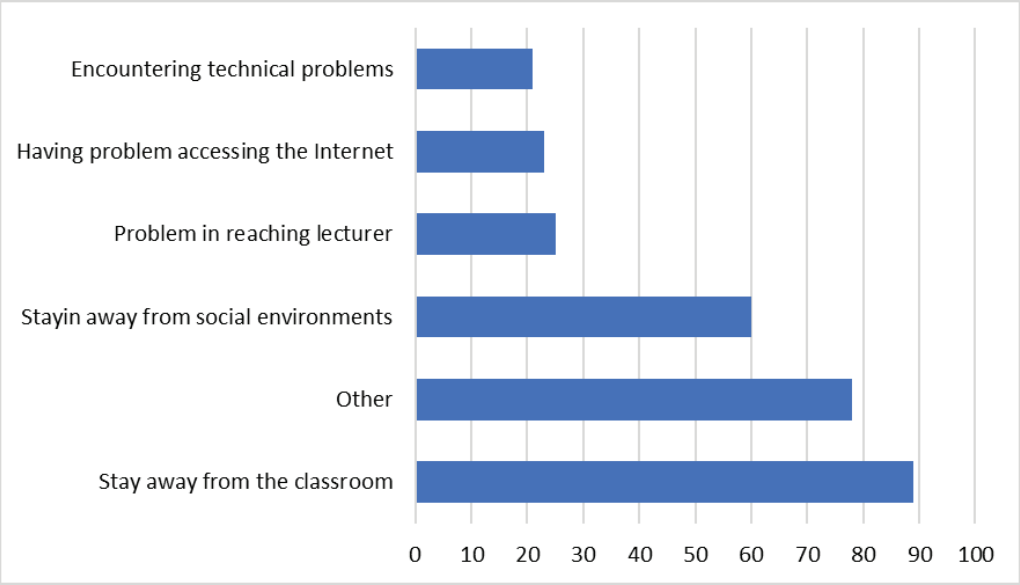

Figure 1. Disadvantages of online anatomy education

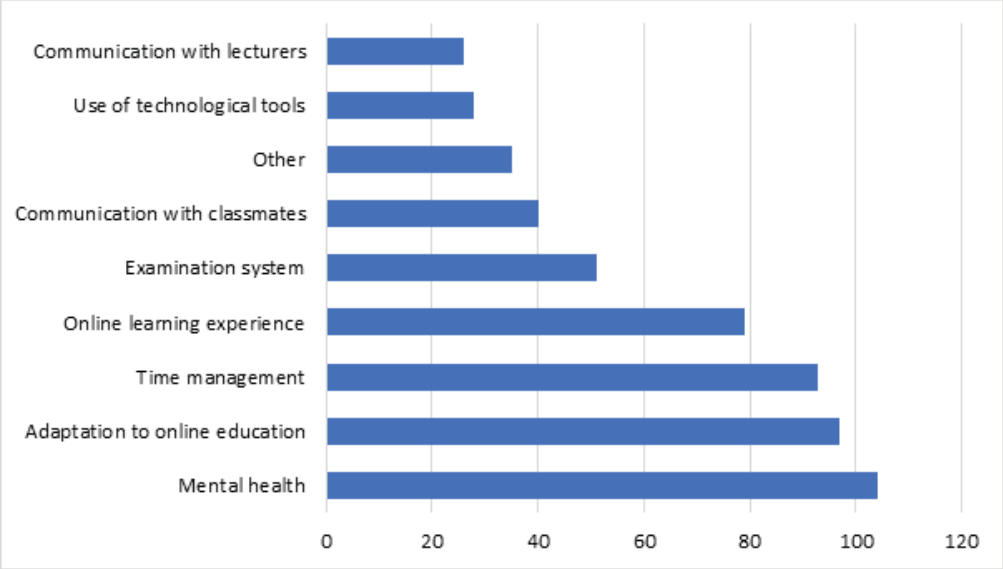

Figure 2. Difficulties experienced by students in online anatomy education

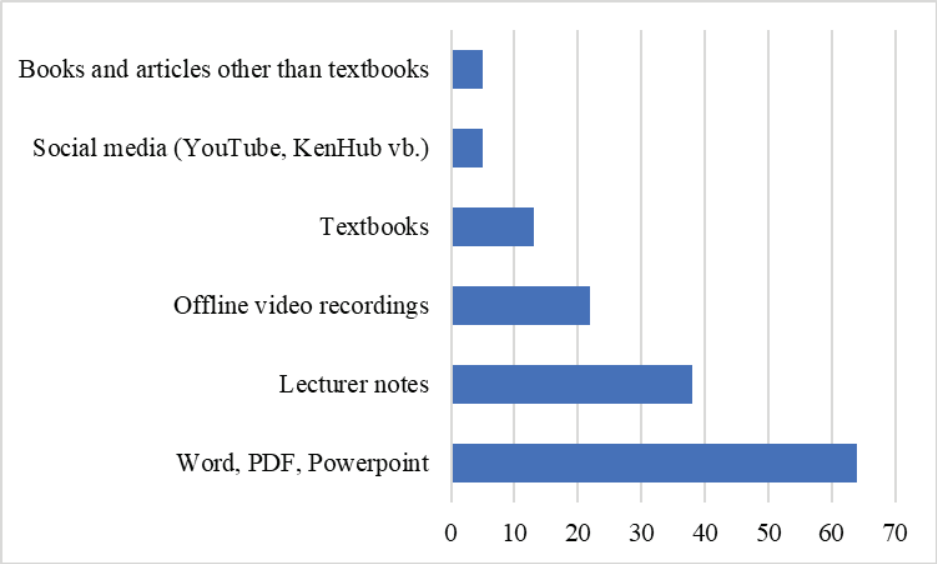

Figure 3 Materials used by students in online anatomy education

When lack of model and cadaver-supported education made it difficult to learn and the use of anatomy atlases was not sufficient due to the lack of practical lessons. When the students were asked about the advantages of online anatomy education, they stated that they could listen to the lessons again, return to the subjects, and take notes more easily.

The questionnaire was directed to the students under three headings (living environment, faculty members, online anatomy education, respectively) and the answers given by the students are presented in Table 1, Table 2, and Table 3 together with their percentage distributions.

Table 1. Distribution percentages of the answers given to the questions about the living environment

Questions	1 (%)	2 (%)	3 (%)	p
I feel distracted due to the comfortable living environment	45.2	14.4	40.4	0.683
I feel a lack of motivation during the pandemic process	20.6	7.5	71.9	0.325
I miss the university environment, my friends, our social and sports activities	22.6	10.3	67.1	0.901
I feel distracted because the living environment is not comfortable	69.2	7.5	23.3	0.740

1: strongly disagree, 2: undecided, 3: strongly agree. p <0.05 statistically significant

Table 2. Distribution percentages of the answers given to the questions about the faculty members

Questions	1 (%)	2 (%)	3 (%)	p
I am satisfied with the faculty members' guidance, support, and assistance in the online education process	24.6	26.7	48.7	0.426
The period and efficiency of online meetings with faculty members were sufficient.	26.0	26.7	47.3	0.084
I think the lessons are uploaded to the system on time	15.8	17.1	67.1	0.474

1: strongly disagree, 2: undecided, 3: strongly agree. p <0.05 statistically significant

Table 3. Distribution percentages of the answers given to the questions about online anatomy education

Questions	1 (%)	2 (%)	3 (%)	p
Theoretical lessons were sufficient	22.6	24.6	52.8	0.683
I find the audio theoretical lessons presentations sufficient for learning.	40.4	23.3	36.3	0.381
Practical lessons were sufficient	49.3	23.3	27.4	0.513
I feel the lack of model-supported education in the online education process	13.0	8.2	78.8	0.940
I feel the lack of cadaver-supported education in the distance education process	13.7	8.2	78.0	0.345
I find the audio practical lessons presentations sufficient for learning	58.9	23.3	17.8	0.801

1: strongly disagree, *2:* undecided, *3:* strongly agree. $p < 0.05$ statistically significant

DISCUSSION

Anatomy education consists of theoretical as well as practical lessons supported by cadavers and models. Practical lessons are important in understanding the lesson, positioning the anatomical structures in three dimensions, and improving the anatomical abilities of the students. In addition to passive watching, listening, and reading, students' group studied by helping each other provides active learning. In the current literature, there are studies in which active learning methods have a positive effect on learning efficiency (12).

Online education was started in order not to interrupt education at universities due to the COVID-19 epidemic. Online education or distance education is an education method supported by digital technologies. The advantages of online education are that students save time because they do not come to campus, and they can repeat and retrieve their course registrations whenever they want. However, being away from the classroom environment may cause them to lose their motivation. In addition, students' socioeconomic status and access to technological devices also affect the online education process (13,14).

In the survey conducted by Turhan and Yakut on physiotherapy students about online anatomy education, 53.1% of the students gave positive feedback on "understand and learn anatomy in online courses", 31.3% were undecided and 15.7% provided negative feedback. Most of the students (50.1%) gave a negative response to the question "Online anatomy education is as effective as face-to-face education". 54.7% of the participants gave a negative answer to the question "I prefer online anatomy education" (15).

In another study, Şenol et al. evaluated the opinions of medical and dentistry faculty students about distance anatomy education. The question "If I had the chance to choose, I would prefer distance anatomy education" was answered positively by 30.4% of dentistry students and 28.6% of medical faculty students. For the question "I think that anatomy theoretical courses should be given online when the pandemic is over", 33.9% of dentistry faculty students and 36% of medical faculty students strongly disagree (16).

In the study of Cuschieri and Agius, which evaluated the opinions of medical school students on distance anatomy education in Malta, half of the participants stated that the effects of distance education and face-to-face education as equal. Similar to the results of our study, most of the students stated that among the advantages of distance anatomy education, the recorded lesson can be listened to again and the time spent on the road is saved. In our study, 42% of the students preferred hybrid education where theoretical lessons are online and practical lessons are face-to-face to the question "How would you like to continue education after the pandemic". On the other hand, 40% of the participants stated that they would like to have face-to-face training (17).

Signal et al. investigated the difficulties of online anatomy education in medical and dental faculty students. 69% of the students stated that they felt a lack of self-motivation, and 68% stated that they had difficulty in managing time (18). In their studies by Signal et al., most of the students stated that they had problems focusing on distance anatomy education because the home environment was uncomfortable or extremely comfortable (18). In our study, 71.2% (104/146) of the students stated that they had mental health problems such as stress or anxiety, and

66.4% (97/146) stated that they had problems adapting to online education. 45.2% of the students answered negatively and 40.4% positively to the question "I feel distracted due to the comfortable living environment". In the open-ended questions administered in the survey, although most of the students reported that they saved time because they did not spend time on the road, 63.7% of the students stated that they had problems with time management.

In the study by Ortadeveci et al., most of the students stated that they were not satisfied with the practice (19). In another study conducted by Shahrvini et al., students stated that "Lost clinical skills and laboratory-based education was negatively affected" (20). In our study, most of the students returned that they felt that the practical lessons were not sufficient and that they felt the lack of model and cadaver-supported education.

When we investigated the difference in the satisfaction levels of our 2nd and 3rd grade students with online anatomy education, no statistically significant difference was found. Both classes agreed that applied lessons were effective in understanding and learning anatomy. No other study was found in the current literature comparing students' views on online anatomy education by class.

Limitations:

The limitation of this study is that the generalizability of the study is limited because the data were requested from a single medical faculty and a limited number of students. Because of this, from other medical faculties in the country, data collection and new research to be done and the results comparison of students with qualitative data the reasons behind their choice understanding is needed.

CONCLUSION

The data we obtained from our study was found to be insufficient in learning practical courses. For the efficiency of online education, students should have self-discipline, keep their motivation high and study on their own. At the same time, online education is a process that requires planning and design by lecturers. During the COVID-19 pandemic process, no preparation for online education and starting without technological infrastructure could not be exactly absorbed by both faculty members and students. Therefore, the problems caused by online education should be identified and the transition to the hybrid education model should be planned and prepared. In order for online education to be more advantageous, it should exactly understand the online education principles of both educators and students. In online anatomy education, students should be enriched in order to create a three-dimensional perception in students because students cannot access model and cadaver-supported practical training. Today, by means of developing technology, educators' students can be directed to 3D anatomy applications, virtual dissection tables, videos, and virtual reality applications. Students can be provided with an appointment with student identities in the anatomy laboratory of the medical faculty in the city which is located or nearest.

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Ethical approval: The study was conducted with the conditions recommended by the Helsinki Declaration. The study was approved by the Clinical Research Ethics Committee of the Hitit University Faculty of Medicine (decision no: 385 dated: 01/20/2021)
Author contributions: All of the authors declare that they have all participated in the design of the study, supervision, data collection&/or processing, performed data analysis, literature search, written, critical review.

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