



The Journal of Turkish Dental Research
Türk Diş Hekimliği Araştırma Dergisi

e-ISSN: 2822-4310, Cilt 2, Sayı 2, Mayıs - Ağustos 2023
Volume 2, Number 2, May - August 2023

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Diş Hekimliği Öğrencileri Üzerindeki Etkisi

The Effect of Distance Learning Anatomy Lesson on Dentistry Students

Erengül BODUÇ

Dr. Öğr. Üyesi Anatomy Department Faculty of Medicine University of Kafkas
36300 Kars, Türkiye
erenboduc@gmail.com
ORCID: 0000-0001-8872-1993

Ethical Approval: Ethics committee approval was received for this study from Ethics Committee of Kafkas University Faculty of Medicine, in accordance with the World Medical Association Declaration of Helsinki, with the approval number: 26.04.2023/04

Author Contributions: Design –EB; Materials EB; Data Collection and/or Processing –EB; Analysis and/or Interpretation –EB.; Literature Review –EB; Writer –EB.; Critical Review –EB

Conflict of Interest: No conflict of interest was declared by the authors.

Financial Disclosure: No financial assistance was received from any institution.

Actnowledgement: I would like to express my endless thanks to the first year student of the Faculty of Dentistry of Kafkas University Students who helped with the study.

Makale Bilgisi / Article Information

Makale Türü / Article Types: Araştırma Makalesi / Research Article

Geliş Tarihi / Received: 04-08-2023

Kabul Tarihi / Accepted: 17-09-2023

Yıl / Year: 2023 | **Cilt – Volume:** 2 | **Sayı – Issue:** 2 | **Sayfa / Pages:** 191-197

Sorumlu Yazar / Corresponding Author: Erengül BODUÇ

<https://doi.org/10.58711/turkishjdentres.vi.1337613>

The Effect of Distance Learning Anatomy Lesson on Dentistry Students in Natural Disasters such as Earthquakes

Deprem Gibi Doğal Afetlerde Uzaktan Eğitim Öğretilen Anatomi Dersinin Diş Hekimliği Öğrencileri Üzerindeki Etkisi

ÖZET

Amaç: “Deprem gibi doğal afetlerde uzaktan eğitim anatomi dersinin öğretilmesinde, alternatif bir çözüm olabilir mi?” sorusunun yanıtını öğrenci görüşleriyle literatüre kazandırmak bu çalışmanın amacıdır.

Gereç ve Yöntem: Çalışmaya 2022-2023 bahar yarıyılı diş hekimliği birinci sınıf öğrencilerinden 57 kişi katılmıştır. Deprem felaketi sonrası uygulanan uzaktan anatomi eğitimi ile ilgili sorulan sorulara kız ve erkek öğrencilerin verdikleri cevaplar ki-kare analizi ile karşılaştırılarak bu cevapların anlamlılığı incelenmiştir.

Bulgular: Araştırmada sorulan 1., 13. ve 15. sorulara kız ve erkek öğrencilerin verdikleri yanıtların ki-kare testi kullanılarak karşılaştırılmasında sırasıyla anlamlı bir fark bulunmuştur ($p=0,044$, $p=0,016$, $p=0,014$).

Sonuç: Ülkemizde yaşanan deprem felaketi (6 Şubat 2023), uzaktan eğitimin covid-19 pandemisi sonrasında da alternatif bir çözüm olarak kullanılabileceğini göstermiştir. Pandemi veya doğal afet gibi durumlar dışında anatomi dersleri için uzaktan eğitim hibrit eğitimle harmanlanabilir mi? Bu cevabın öğrenci görüşleri ile desteklenmesi ve literatüre aktarılması gelecekteki sağlık eğitimini önemli ölçüde etkilemektedir.

Anahtar Kelimeler: Anatomi eğitimi, diş hekimliği eğitimi, uzaktan eğitim, deprem

ABSTRACT

Purpose: “Can distance education be an alternative solution for teaching anatomy lessons in natural disasters such as earthquakes?” The aim of this study is to bring the answer of the question to the literature with student opinions.

Material and Method: 57 people from 2022-2023 spring semester first year dentistry students participated in the study. The answers given by female and male students to the questions asked about distance anatomy education applied after the earthquake disaster were compared with the chi-square analysis and the significance of these answers was examined.

Results: A significant difference was found in the comparison of the answers given by male and female students to the 1st, 13th and 15th questions asked in the study using the chi-square test ($p=0.044$, $p=0.016$, $p=0.014$, respectively).

Conclusion: The earthquake disaster in our country (February 6, 2023) has shown the fact that distance education can still be used as an alternative solution after the covid-19 pandemic. Can distance education be blended with hybrid education for anatomy lessons, except in cases such as pandemics or natural disasters? Supporting this answer with student opinions and passing it on to the literature significantly affects future health education.

Keywords: Anatomy education, dentistry education, distance education, earthquake

Introduction

Distance education is an education model that has entered the life of health schools during the covid-19 process.¹ Although this education model puts students and educators in a deadlock on many issues, today this education model has not been completely abandoned.² Of course, distance education cannot replace face-to-face education, but today it has almost turned into a savior education model in many congresses and courses that need to be repeated or in explaining the subjects that are not understood again.^{2,3}

were victims of the earthquake, distance education and tolerance for a certain period of time also created a situation that such a process was deemed necessary for the adaptation of those who experienced the disaster to the educational situation.⁵

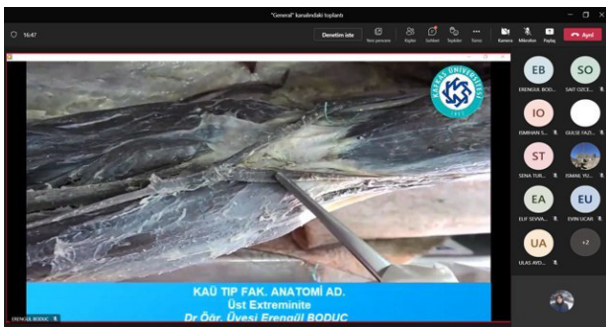


Figure I. In the picture, the veins for intravenous (IV) intervention in the upper extremity are shown by distance education on a cadaver.



Figure II. In the picture, a lesson video that includes the explanation of the vessels in the cardiovascular system on a model in a laboratory environment is shown with distance education.

On February 6, 2023, Turkey’s south-eastern provinces were shaken by a great earthquake. In this way, in an extraordinary situation, education in these provinces and all provinces of Turkey has been transformed into distance education.⁴ Unfortunately, this situation has brought along concerns such as low motivation in both students and educators and the inefficient quality of education after covid-19. But for the educators and students who experienced the earthquake and who

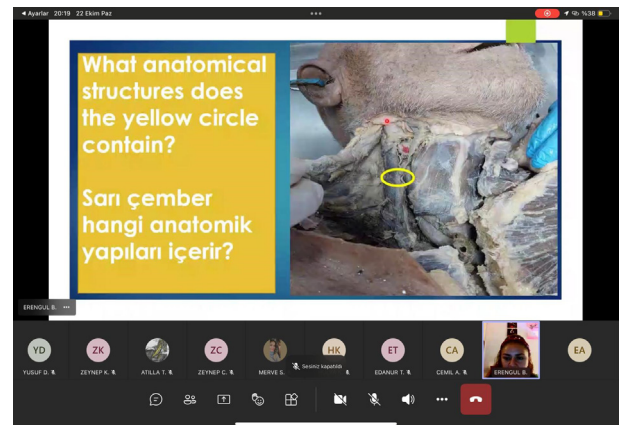


Figure III. Demonstration of the neck vascular-nerve package on a cadaver with a distance education system in anatomy courses.

In this study, the opinions of the students who come from earthquake regions and study at the faculty

Table 1. Percentage of frequency (f) and ‘p’ values that male and female students gave to the questions

| QUESTIONS & GENDER | Absolutel y agree % | Absolutel y Disagree % | Undecided % | Agree % | Not Agree % | ‘p’ value s |
|----------------------|--|------------------------|-------------|---------|-------------|-------------|
| 1. | ‘I experienced the earthquake disaster.’ | | | | | 0,044 |
| Male Students N: 28 | 39,3 | 17,9 | 7,1 | 21,4 | 14,3 | |
| Female Students N:29 | 20,7 | 6,9 | - | 27,6 | 44,8 | |
| 2. | ‘Earthquake affected me and the world psychologically.’ | | | | | 0,855 |
| Male Students N: 28 | 39,3 | 3,6 | 10,7 | 42,9 | 3,6 | |
| Female Students N:29 | 44,8 | - | 13,8 | 37,9 | 3,4 | |
| 3. | ‘Since the earthquake affected me and my family financially and morally, I consider distance education appropriate for a certain period of time.’ | | | | | 0,514 |
| Male Students N: 28 | 32,1 | 14,3 | 17,9 | 21,4 | 14,3 | |
| Female Students N:29 | 24,1 | 6,9 | 10,3 | 37,9 | 20,7 | |

| | | | | | | |
|----------------------|--|------|------|------|------|-------|
| 4. | 'Even though the earthquake has been experienced, earthquake-affected students can continue their normal education temporarily in other universities.' | | | | | 0,453 |
| Male Students N: 28 | 32,1 | 14,3 | 17,9 | 17,9 | 17,9 | |
| Female Students N:29 | 13,8 | 13,8 | 34,5 | 20,7 | 17,2 | |
| 5. | 'I don't want distance education in any way.' | | | | | 0,078 |
| Male Students N: 28 | 39,3 | 28,6 | 10,7 | 10,7 | 10,7 | |
| Female Students N:29 | 13,8 | 34,5 | 13,8 | 3,4 | 34,5 | |
| 6. | 'I can't socialize when there is distance education, I can't listen to lessons at home.' | | | | | 0,171 |
| Male Students N: 28 | 46,4 | 17,9 | 3,6 | 17,9 | 14,3 | |
| Female Students N:29 | 20,7 | 34,5 | 6,9 | 10,3 | 27,6 | |
| 7. | 'Distance education can be done partially, our practice lessons should be face-to-face.' | | | | | 0,640 |
| Male Students N: 28 | 28,6 | 17,9 | 10,7 | 21,4 | 21,4 | |
| Female Students N:29 | 13,8 | 24,1 | 17,2 | 17,2 | 27,6 | |
| 8. | 'I want to listen to the lecture live and be at the university.' | | | | | 0,115 |
| Male Students N: 28 | 42,9 | 7,1 | 14,3 | 14,3 | 21,4 | |
| Female Students N:29 | 17,2 | 24,1 | 6,9 | 24,1 | 27,6 | |
| 9. | 'Distance education affects my social life a lot, listening to lessons at home breaks my psychology, I cannot be social.' | | | | | 0,081 |
| Male Students N: 28 | 32,1 | 10,7 | 3,6 | 21,4 | 32,1 | |
| Female Students N:29 | 13,8 | 41,4 | 6,9 | 13,8 | 24,1 | |
| 10. | 'Instead of listening to distance education in the dormitory at the university, I prefer to stay at home with my family and listen to distance education.' | | | | | 0,417 |
| Male Students N: 28 | 35,7 | 21,4 | 14,3 | 25 | 3,6 | |
| Female Students N:29 | 55,2 | 6,9 | 10,3 | 20,7 | 6,9 | |
| 11. | 'If universities need to conduct distance education, I would like to be at the university (either in the classroom, in the library or in the dormitory) and listen to distance education' | | | | | 0,484 |
| Male Students N: 28 | 7,1 | 28,6 | 21,4 | 28,6 | 14,3 | |
| Female Students N:29 | 13,8 | 31 | 24,1 | 10,3 | 20,7 | |
| 12. | 'Distance education of anatomy course should be supported with hybrid education.' | | | | | 0,919 |
| Male Students N: 28 | 28,6 | 10,7 | 17,9 | 35,7 | 7,1 | |
| Female Students N:29 | 24,1 | 6,9 | 27,6 | 34,5 | 6,9 | |
| 13. | 'Anatomy course should not be given by distance education in the faculty of dentistry unless it is necessary for natural disasters and diseases.' | | | | | 0,016 |
| Male Students N: 28 | 42,9 | 10,7 | 3,6 | 39,3 | 3,6 | |
| Female Students N:29 | 41,4 | 17,2 | 10,3 | 6,9 | 24,1 | |
| 14. | 'I don't have any problems with the distance education exam of the anatomy course.' | | | | | 0,083 |
| Male Students N: 28 | 28,6 | 10,7 | 28,6 | 17,9 | 14,3 | |
| Female Students N:29 | 24,1 | 3,4 | 6,9 | 34,5 | 31 | |
| 15. | 'I pass the exam of the anatomy course more easily with distance education.' | | | | | 0,014 |
| Male Students N: 28 | 21,4 | 14,3 | 17,9 | 42,9 | 3,6 | |
| Female Students N:29 | 3,4 | 24,1 | 34,5 | 17,2 | 20,7 | |
| 16. | 'I don't think the anatomy course, the online exam, measures success well.' | | | | | 0,272 |
| Male Students N: 28 | 35,7 | 14,3 | 21,4 | 17,9 | 10,7 | |
| Female Students N:29 | 13,8 | 24,1 | 17,2 | 20,7 | 24,1 | |

of dentistry of our university about earthquakes and distance education are presented. The opinions obtained from the students in various events that affect both the country and the world, such as earthquake, illness, etc. ‘How should the anatomy education plan be?’ can answer the question. In answering this question, both female and male students supported distance education by more than 50% in situations such as disasters and epidemics. The fact that the study was carried out on first-year dentistry students can also present striking facts and data about the field of anatomy education for faculties that have a wide practice area and health education, such as the faculty of dentistry.

Materials and Methods

The study was started after the approval of the ethics committee and the permission of the institution (Ethical approval number: 26.04.2023/04/ Ethics Committee of Kafkas University, Faculty of Medicine). The forms containing the data collection questions were sent to the first year students of the faculty of dentistry in the spring semester of 2022-2023 on the web (three months after the earthquake disaster). Students answered the questions online, not face to face. 57 people (29 female, 28 male) out of 62 students participated in the study.

The questionnaire was prepared with a five-point Likert scale (strongly agree, agree, undecided, disagree, strongly disagree).⁶ The questions answered by the students were analyzed automatically with the program in the Google web system. The questions were made using the Google Form application. Frequency and percentage calculations of the answered options were transferred to excel (table 1). Then, the answers given by males and females were compared with the chi-square test.

Statistical analysis

Statistical analysis was performed using SPSS (version 22.0) statistical package program (IBM SPSS Corp.; Ar-monk, NY, USA). The answers given to the questions by the first year students of the faculty of dentistry (2022-2023 spring academic year) were compared statistically with the chi-square test. The results were scored at 95% confidence intervals and a p value of <0.05 was considered significant. Chi-square test was applied to the answers given by and male students and significant difference was found in three

questions. The sample of the study consisted of all first year dentistry students (whole universe was included) and 57 students answered the questions on a voluntary basis. Each p-value actually explains a hypothesis. The hypothesis of the study can be considered as whether there is any significant difference in the comparison of the answers given by female and male students. In the light of this hypothesis, the study questions were directed to two groups as ‘male and female students’.

Results

The effects of the earthquake on students; opinions on questions 1, 2, 3 and 4

In the first question, 31 (male and female) people in the class answered ‘I agree’ to the comment ‘I experienced the earthquake disaster’. Since our university hosts many students from earthquake zones, the number in this question is quite high. almost the majority of the class has experienced the earthquake disaster. The answers received in the second question showed that the earthquake negatively affected the majority of the class (both male and female students) and their families psychologically. Again, the majority of the class, both male and female students, replied, “I agree”, to the view that “I consider distance education appropriate for a certain period of time because the earthquake has affected me and my family financially and morally”. However, there is a certain percentage of students who are ‘undecided’ and ‘not agree’ to this situation. ‘Even though the earthquake has been experienced, students can temporarily study at other universities instead of distance education in our country.’ While an equal number of male and female students answered ‘strongly disagree’ (9 people from both genders), the ‘strongly agree’ response was high in both genders. In addition, there is a certain number of ‘undecided’ ones.

Students’ perspective on distance education; opinions on questions 5,6 and 7

In the opinion that “I do not want distance education in any way”, male students gave the answer “I agree” at a higher rate than female students. Female students, on the other hand, gave the answer “I do not agree” with a higher rate. In this case, female students like distance education more than males. In the opinion that ‘I cannot socialize when there is distance education, I cannot listen

to the lessons at home.’, female students have a higher number of ‘disagree’ answers, while male students have a higher number of ‘agree’ answers. ‘I can’t socialize in distance education’, the situation of male students is more dissatisfied than the female students. ‘Distance education can be done partially, our practice courses should be face-to-face.’ Male students support this view more than female students. Unfortunately, female students do not adopt this view very much.

The effect of distance education on socialization; opinions on questions 8,9,10 and 11

‘I want to listen to the lecture live and be at the university.’ In the opinion, males are more willing than females. Female students, on the other hand, are not very willing to do so. ‘Distance education affects my social life a lot, listening to lessons at home breaks my psychology. I can’t be social.’ In the opinion of the male students, a very high rate of participation was observed. On the other hand, female students have a high rate of ‘I disagree’ answers. There is a significant difference of opinion between male and female students. ‘Instead of listening to distance education in the dormitory at university, I prefer to stay at home with my family and listen to distance education.’ In their opinion, both male and female students preferred to listen to distance education with their families instead of listening to it in the dormitory. In this case, the crowded environment in the dormitory and the conditions of not being able to move freely during accommodation with many people can also be effective. ‘Whatever, if you are at the university and need distance education; I would like to listen to distance education when I am at university (either in the classroom, in the library, or in the dormitory).’ The same attitude prevails in his opinion with 10 questions. Students are not willing to learn distance education in the library, classroom or dormitory. This situation may have brought with it the problems that the internet connection is not sufficient in these environments.

Blending distance education with hybrid education and online exam opinions; opinions on questions 12,13,14,15 and 16

‘Distance education should be supported by hybrid education.’ In the opinion, both male and female students showed high participation and supported hybrid

education. ‘Distance education should not be done on natural disasters and diseases unless it is necessary.’ There is a very high rate of participation among male students. There is also a high level of participation among female students, but the number of female students who do not agree with this situation is close to the participating students. ‘I don’t have any problems in the exam with distance education.’ There is a very high participation rate among female students. Most female students have no problems. However, the number of male students who agree with this view is not as high as female students. The number of those who do not agree with the opinion and those who are undecided is also at a certain rate. ‘I pass the exam more easily with distance education.’ While the majority of female students showed an indecisive attitude in their opinion, male students agreed with this opinion at a high rate. But it is as if the students have an attitude of not wanting to reveal this situation to the trainers. ‘I don’t think the online test measures well.’ While male students agreed with his opinion with a large majority, female students gave the answer “I do not agree” with a high majority. Here, it can be thought that male students answered in this way because they passed the online exam more easily with the anxiety of passing the exam.

Discussion

Distance education, which existed before, has reached a widespread use in the field of health education during the covid-19 period.⁷ Unfortunately, some results of distance education all over the world have brought to light the educational deficiencies of students, especially in the fields of application. Today, the lack of anatomy in medical school, first or second year distance education and upper-class exams, especially in surgery courses, cannot be ignored.^{7,8} It was also emphasized by Papa et al. that an anatomy education that is far from visual and tactile (covid-19 process) will negatively affect future physician candidates.⁹

As stated by Turamanlar and Güzel in their article, although distance education is an undesirable education model, it is still used today even after the pandemic.¹⁰ It has been an effective and attractive software application especially in mini-symposium, meeting or unintelligible lesson.^{11,12} After the earthquake disaster that occurred in the southern and southeastern provinces of Turkey on

February 6, 2023, unfortunately, due to the effect of a large geography, education in universities was carried out as distance education for a certain period of time.⁵

In this study, the views of dentistry faculty students on the distance education of the anatomy course after the earthquake were examined.^{5,13,14} It is an obvious fact that the students were affected by the earthquake both psychologically and personally in the first four questions. Almost half of both male and female students want distance education in the post-earthquake period. This situation was similarly analyzed in the thirteenth question. 'When there is a natural disaster and contagious (lethal) disease, distance education should not be done unless it is necessary.' In the question, a certain student population that does not agree with this view and almost half of the class supports distance education.

Although distance education is a very useful education model during a natural disaster, especially male students are not satisfied with not being able to socialize and listening to anatomy lessons away from the university environment. On the other hand, female students do not agree with the view that 'I cannot socialize with distance education'. It is a very important point that the time to explain anatomy education to students from a distance after the earthquake should be adjusted very well by the educators. In this process, especially the affected student population is very effective in making educational decisions. For example, if, half of the class were affected by the earthquake, situations such as the accommodation problem of these students, the financial means they lost in the earthquake, and the families and friends lost in the earthquake, could unfortunately, drag the students into both a material and a moral collapse. After a certain period of distance education in universities, switching to normal education may be beneficial in terms of distracting students and adapting. 'Even though the earthquake has been experienced, students can temporarily study at other universities instead of distance education in our country.' The support given to this view by both male and female students may be the answer to this situation. The limits of these two situations should be well understood and resolved by the educators. These situations obtained from the study are mentioned in the article of Topkaya et al.¹⁵

Another subject investigated in the study is the

integration of the hybrid education model into anatomy lessons.^{13,14,16} Students expressed very positive and enthusiastic views on this issue. Both female and male students gave positive feedback on the support of the lessons with hybrid education.

Important feedback on distance education draws attention especially in the last 4 questions. Both male and female students reported that they had no problems in the exam with distance education at a high rate. On the other hand, in the opinion that 'I pass the exam more easily with distance education', female students showed an indecisive attitude at a high rate, while male students agreed with this view at a high rate. 'I don't think the on-line exam measures well.' There is also a difference of opinion between male and female students. While female students mostly reject this view, the majority of male students support this view.

Conclusions

-Although distance education has its disadvantages, the saving aspect of education is a great on-line application that enables education to continue, especially in insurmountable situations such as pandemics or natural disasters.

-The biggest problem of distance education in health fields is the inability to understand practical lessons. In addition, it may cause psychological harm to students by preventing socialization.

-In the earthquake disaster, distance education has been a saving education model for a while, both financially and morally. Because, considering the material and moral losses of the majority of students, especially in earthquake regions, distance education for a while is a life-saving practice.

- However, after disasters such as earthquakes, this distance education period should be well determined by the educators. The fact that these processes are very long; It also brings along the problems of not being able to practice, socializing and understanding the lesson fully, and various anxiety situations.

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