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Opinions of Medical Faculty Students about Anatomy Practical Education: A Survey Study

Tıp Fakültesi Öğrencilerinin Anatomi Pratik Eğitimi Hakkındaki Görüşleri: Bir Anket Çalışması

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Abstract

Aim: In our study, it was aimed to evaluate the opinions of students studying at Kahramanmaras Sutcu Imam University Faculty of Medicine about the current state of anatomy practical education.

Material and Method: A total of 64 students, 36 men and 28 women, were included in the study. In this cross-sectional, descriptive type study, students' views on anatomy education were determined using a voluntary survey method. In the content of the survey, there were questions that questioned the demographic characteristics of the students, their thoughts about the practical education of anatomy they received, and questions that determined their ideas about the provision of models. In the answer to other questions, a likert-type scale of 5 was used consisting of the options “always”, “mostly”, “often”, “occasionally”, “never”. The data was analyzed with IBM SPSS Statistics 25.0 package program.

Results: The average age of 64 students participating in the study was 20.98± 1.10. Of these students, 33(51.6%) were in semester II and 31(48.4%) were in semester III. Students reported that the practical training in anatomy they received was moderate, that the model and cadaver should be used together in lessons, that training on the model was very effective in learning anatomy. In the results, it was observed that the variety of models available in our laboratory was sufficient, but due to the presence of classes, the number of models was not sufficient, it would be better to drop one model for every 1-5 people on the average.

Conclusion: Students were moderately satisfied with the learning practices within the scope of the anatomy practical course. With the support of Kahramanmaraş Sütçü İmam University Research Projects Coordination Unit (Project no:2020/3-28A), thanks to the newly provided models, the reinforce laboratory allows students to better understand the lesson and learn the subjects they are having difficulty with.

Keywords: Anatomy, model, laboratory, survey

Öz

Amaç: Çalışmamızda Kahramanmaraş Sütçü İmam Üniversitesi Tıp Fakültesi'nde eğitim gören öğrencilerin anatomi pratik eğitiminin mevcut durumu hakkındaki görüşlerinin değerlendirilmesi amaçlanmıştır.

Materyal ve Metot: Çalışmaya 36 erkek ve 28 kadın toplam 64 öğrenci dahil edilmiştir. Kesitsel, tanımlayıcı tipteki bu çalışmada öğrencilerin almış oldukları anatomi eğitimi hakkındaki görüşleri gönüllülük esasına dayalı bir anket yöntemi kullanılarak belirlenmiştir. Anket içeriğinde öğrencilerin; demografik özellikleri, aldıkları anatomi pratik eğitimiyle ilgili düşüncelerini sorgulayan sorular ve maket teminine ait fikirlerini belirleyen sorular bulunmaktaydı. Diğer soruların cevabında ise “her zaman” , “çoğunlukla” , “sık sık” , “ara sıra”, “hiçbir zaman” seçeneklerinden oluşan 5'li likert tipi ölçek kullanıldı. Elde edilen veriler IBM SPSS Statistics 25.0 paket programı ile analiz edilmiştir.

Bulgular: Çalışmaya katılan 64 öğrencinin yaş ortalaması 20.98± 1.10 olarak tespit edildi. Bu öğrencilerin 33(%51.6)'ünün dönem II'de, 31(%48.4)'inin dönem III'de olduğu belirlendi. Öğrenciler aldıkları anatomi pratik eğitiminin orta seviyede olduğunu, derslerde maket ve kadavranın birlikte kullanılması gerektiğini, maket üzerinde eğitim almanın anatomiyi öğrenmede çok fazla etkili olduğunu bildirmişlerdir. Sonuçlarda laboratuvarımızda bulunan maket çeşitliliğinin yeterli olduğu ancak sınıf mevcudunun fazla olması nedeniyle maket sayılarının yeterli olmadığını, ortalama her 1-5 kişiye bir maket düşmesinin daha iyi olacağı görülmüştür.

Sonuç: Öğrencilerin anatomi pratik dersi kapsamındaki öğrenim uygulamalarından orta düzeyde memnun oldukları ortaya çıkmıştır. Kahramanmaraş Sütçü İmam Üniversitesi Bilimsel Araştırma Projeleri Koordinasyon Birimi'nin (Proje no:2020/3-28A) destekleri ile yeni temin edilen maketlerle güçlendirilmiş laboratuvar sayesinde öğrencilerin dersi anlamada ve zorlandıkları konuları da daha iyi öğrenmelerine olanak sağlanmıştır.

Anahtar Kelimeler: Anatomi, maket, laboratuvar, anket

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INTRODUCTION

With the medical education given before graduation, it is aimed that students gain basic knowledge and skills, comprehend social ethical elements, and acquire medical skills in general (1). Human anatomy, which is the oldest known medical science, constitutes one of the most important components of medical education (2,3). In addition to contributing to the teaching of other basic medical sciences, it provides functional structural integrity in order to make medical practice and other health applications more successful. Along with technological developments, devices such as ultrasonography and computerized tomography, which are offered to the service of humanity and medicine, while providing speed and reliability that will revolutionize diagnosis, have also shown that knowledge of anatomy is very important (4).

The anatomic training in medical faculties is given in the form of theoretical and practical courses (5). The basis of anatomy education consists of practical lessons with cadavers that provide the opportunity to recognize the three-dimensional structure of the body (4). Today, three-dimensional imaging techniques, virtual reality applications, models showing the smallest anatomical details make the instructors' work quite easier. However, the gold standard for anatomy education is still cadaver. None of the existing technological innovations can replace the cadaver. Although the cadaver is the most important resource in anatomy education, there are difficulties in accessing it. For an efficient anatomy education, the number of students per cadaver should not exceed six. However, it is a known fact that we are far from this figure for our country (6). In this cadaver shortage, models are mostly preferred as they help to do the practical lessons in the best way. Anatomy practice lessons using models and cadavers allow students to identify and examine the anatomical structures in the theoretical lessons by seeing them personally (7).

Receiving regular feedback from students, analyzing them and sharing the obtained reports with the trainers in a timely and appropriate way can be effective in improving the quality of education programs (8). The application, which is called student appreciation, satisfaction or feedback, is the most frequently used method in evaluating education (9,10).

Feedback in medical education is a complementary and important component of the teaching process and increases students' knowledge-skill levels and professional success (11). The opinions of the medical faculty students about the theoretical and practical anatomy courses are important in updating the content of the education and the presentation methods (12).

This study was carried out in order to evaluate the practical lessons in Anatomy education taken by Kahramanmaraş Sütçü İmam University Faculty of Medicine students in the 2020-2021 academic year. In addition, the situation will be evaluated by obtaining feedback from the students about our anatomy application laboratory, which is strengthened with the models provided within the scope of the infrastructure project from the Scientific Research Projects Coordination Unit.

MATERIAL AND METHOD

The study was carried out with the approval of Kahramanmaraş Sütçü İmam University non-invasive clinical research ethics committee with project number 229. A total of 64 students (36 male, 28 female) who received practical anatomy training at Kahramanmaraş Sütçü İmam University Faculty of Medicine were included in the study. In this cross-sectional, descriptive study, the opinions of the students about the anatomy education they received were determined by using a questionnaire method based on volunteering. Students were asked to fill in a voluntary consent form stating that they wanted to be included in the study. The data were obtained through the feedback method consisting of 17 closed-ended questions. The questionnaire included questions about the demographic characteristics of the students, their thoughts on the practical anatomy education they received, and questions about the supply of models. Students were asked to write down their gender, semester and age. A 5-point Likert-type scale consisting of “always,” “mostly,” “often,” “sometimes,” and “never” options was used to answer the other questions. The names, surnames and student numbers of the students were not included in the questionnaire in order to ensure the reliability of the feedback.

Statistical Analysis

For statistical analysis of the data, IBM SPSS Statistics for Windows, version 25.0 (IBM Corp., Armonk, NY, USA) package program was used. Mean and standard deviation were used for numerical data, number and percentage values were used for categorical data, and chi-square test was used for group comparisons. In evaluating the level of significance in the analysis, a p-value equal to and less than 0.05 was considered statistically significant.

RESULTS

The mean age of 64 students participating in the study was detected as 20.98±1.10 (min=19-max=24). It was determined that 28 (43.1%) of these students were female, 36 (56.3%) were male, and 33 (51.6%) were semester II, and 31 (48.4%) were semester III.

It was determined that 22 (34.4%) of the participants spent 0-1 hour, 34 (53.1%) 1-3 hours, 8 (12.5%) 3-5 hours for anatomy lessons. “Does it make it easier for you to comprehend when the model is explained by the teacher beforehand in practice lessons?” 22 (34.4%) of the students answered that question as very much, 20 (31.3%) more, 19 (29.7%) moderate and 3 (4.7%) less. The questions and answers regarding the anatomy practice lessons given in our faculty are given in Table 1 (Table 1).

“Is working on the model effective in learning anatomy?”

19 (57.6%) of the semester II students answered this question as very much, 13 (39.4%) more, 3 (3%) moderate and 20 (64.5%) of the semester III students said very much, 5 (16.1%) more, 4 (12.9%)moderate and 2 (6.5%) less (p=0.06).

"How many students should work on a model?" While 22 (66.7%) of the semester II students stated that 1-5 people were suitable, the semester III students stated that they agreed with them with a number of 27 (87.1%). While only 1 (3%) student in semester II thinks that the number of people per model should be between 15-20, no one thinks that this number is appropriate in semester III (100%) (p=0.05).

"Do you find the number of models used in anatomy practical lessons sufficient?" In semester II, 3 (9.1%) students said always, 8 (24.2%) said mostly, 7 (21.2%) said often, 9 (27.3%) said sometimes, and 6 (18.2%) said never. In semester III, 2 (6.5%) people answered always, 4 (12.9%) said mostly, 10 (32.3%) said often, 7 (22.6%) said sometimes and 8 (25.8%) said never (p= 0.63).

"Is the types of models in your laboratory sufficient for your course content?" To this question, 1 (3.0%) person in semester II said very few, 7 (21.2%) people said less, 19 (57.6%) people said moderate, 6 (18.2%) people stated much, 1 (3.2%) people in semester III, answered very few, 5 (16.1%) less, 19 (61.3%) moderate, 6 (19.4%) much (p=0.96).

"Which system did using models help you comprehend the most?" Semester II students asked the question as bones with 15 (45.5%), nervous system with 10 (30.3%), joints with 6 (18.2%), muscles with 1 (3%) and circulatory system with 1 (3%) people. In semester III, 10 (32.3%) people chose bones, 4 (12.9%) joints, 10 (32.3%) muscles, 4 (12.9%) circulatory system, 1 (3.2%) digestive system, 1(3.2%) urogenital system and 1 (3.2%) chose the nervous system.

"When compared, which one would you prefer as a tool for aiding the lesson; models or cadavers?" While 2 (6.1%) people from semester II thought that a cadaver, 3 (9.1%) a model, 28 (84.8%) a model and a cadaver should be together, no one preferred only cadaver from semester III, 5 (16.1%) one person selected a model, 25 (80.6%) people chose a cadaver and a model together (p=0.30). Some questions and answers about the anatomy practice lessons given by distance education and the importance of anatomy in the professional life of the participants are given in Table 2 (Table 2).

Table 1. Opinions of students about anatomy practice lessons

Survey questions	Always Number (%)	Mostly Number (%)	Often Number (%)	Sometimes Number (%)	Never Number (%)
Do you think that the practical anatomy education in your faculty is at a sufficient level?	4 (6.3)	Mostly	17 (26,6)	17 (26,6)	2 (3.1)
Can you easily ask questions to the instructor in practical lessons?	17 (26,6)	Often	12 (18.8)	11 (17.2)	0 (0.0)
Do you think that the anatomy practice exams held in your faculty adequately evaluate your anatomy knowledge?	12 (18.8)	Sometimes	14 (21.9)	10 (15.6)	2 (3.1)

Table 2. Opinions of the participants on the conduct of distance education and anatomy practice courses

Survey questions	Very few Number (%)	Less Number (%)	Moderate Number (%)	Much Number (%)	Too much Number (%)
How much did the Anatomy practical course you took with distance education this year contribute to your education?	12 (18.8)	21 (32.8)	22 (34.4)	6 (9.4)	3 (4.7)
Do you think that the practical anatomy training you have received will make a significant contribution to your professional life?	1 (1.6)	6 (9.4)	25 (39.1)	26 (40.6)	6 (9.4)
Is it a deficiency to not be able to work on one-to-one models due to distance education?	1 (1.6)	1 (1.6)	16 (25)	14 (21.9)	32 (50.0)

DISCUSSION

A good anatomy education is needed in order to train qualified physicians, to determine the correct diagnosis for the symptoms as soon as possible, to determine the most appropriate surgical intervention and to apply it in the most accurate way (13). The regular evaluation of the education provided done by the students will be of great benefit in increasing the quality of education offered, eliminating the identified deficiencies and developing new education methods that will contribute to them (14).

"Do you think that the practical anatomy education is sufficient?" This question was answered as 37.5% mostly, 26.6% frequently and 26.6% occasionally. It was stated that 72.2% of Gazi University Faculty of Medicine semester II students were satisfied with the anatomy practical courses (8). In another study, it was determined that the satisfaction of the students from the theoretical and practical education of anatomy was moderate (out of 5, respectively; 3.32 and 3.33) (15). In the study of Gaziantep University, satisfaction levels were determined as 55% (16). In a study conducted at Adıyaman University Faculty of Dentistry, a satisfaction level of 85% was determined for the practical part of anatomy (13). Most of the participants in our study answered this question positively and stated that they were largely satisfied with the training they received.

In our study, the number of students who stated that the lecturer's explanation beforehand of the model made it easier to understand was quite high (34.4% very much, 31.3% more and 29.7% moderate). In the study conducted by Uygur et al., similar to our results, it is seen that they reached a very high result with 89.9% (17). It is clearly seen that the teaching of anatomy practical lessons by the instructor is a correct method for students.

"Is working on the model effective in learning anatomy?" While 57.6% of semester II students stated that it was very much effective, 39.4% stated that it was very effective. In semester III students, with 64.5% very much, 16.1% much and 12.9% moderate options were found to agree with term II students. In a study, similar to our results, it was determined that 98.7% of the students stated that working on a model in practice lessons was quite effective in learning anatomy (17).

"Do you find the number of models used in anatomy practical lessons sufficient?" Among semester III students, 6.5% said always, 25.8% never, and in semester II, 9.1% said always, and 18.2% when asked this question. In the results, it is seen that the people who never found the number of models to be sufficient decrease in semester II. We see that the models obtained with the infrastructure project partially meet the needs of the students. In a study, similar to our results, it was shown that 59.5% of the students did not find the number of models used in practice lessons sufficient (17). The fact that laboratories in our country have limited cadavers in the practical education of anatomy pushes us to establish laboratories powered by models. Thus, we think that the satisfaction level of students in education will be brought to higher levels.

"How many students should work on a model?" While 66.7% of semester II students stated that 1-5 students were suitable for the question, semester III students stated that they agreed with them with 87.1%. The results we found are in line with other studies (17). In a study, it was determined that 86% of the students agreed with the opinion that the crowded classroom affects education negatively. In another study, 95.7% of the students reported that the presence of too many students in the classroom negatively affects learning in the teaching-learning process (18). Although our laboratory has been further strengthened with the new models we have added to our laboratory, we can say that due to the crowded classrooms, we do not have enough models to meet the demands of the students yet, and new studies are needed for this.

When we ask the students whether the model types are sufficient according to the course content, we see that the semester II students give more positive answers than the semester III students. The students stated that the types of models were sufficient, but the number of models was less compared to the large number of students in class. Even if there is no statistically significant difference between the results, it is a positive result that the variety of models increases and the students express this.

Which system did using models help you comprehend the most? In this question, it is seen that the semester II students mostly refer to the bones, followed by the nervous system, and then the joints, while the semester III students said primarily bones, followed by the muscles, joints and circulatory system. In a study, 94.9% of the students agreed with the statement "I learned bones well with the anatomy education given," while 83.5% were agreed for joints, 92.4% for muscles, 63.3% for nervous system (17). In another study, 58% of the students stated that the central nervous system was the subject they learned the worst among the anatomy lessons, which is consistent with the results of our study and shows that the subjects of the nervous system are difficult for students to understand (19). Considering that the models taken to the laboratory are predominantly nervous system according to their content, we see that the nervous system, which is the most difficult for students to understand, rises to the second rank in semester II, even if it does not even enter the first three rankings in their semester III preferences.

When we look at which model and cadaver students prefer in applied education, it is seen that the majority of semester II and III are in agreement that model and cadaver should be used together. In a study similar to the results of our study, the rate of students who believe that the use of auxiliary course tools other than cadavers in anatomy applications is 92.1%; when asked to compare models and cadavers, it was seen that 13.1% chose models, 15.7% chose cadavers, and 68.1% chose both

(19). In another study, similar to our study, in practice, most models were preferred (20). A limitation of our study is that we could not reach all of the students who received anatomy practical training due to the remote training due to the Covid-19 pandemic.

CONCLUSION

It was revealed that the students were moderately satisfied with the education they received in the anatomy practical courses. In order to increase the level of satisfaction, the deficiencies identified should be completed as soon as possible and the developments should be followed by the feedback method. Students mostly prefer interactive, applied Anatomy courses including cadavers. Thanks to the laboratory reinforced with new models, students were given the opportunity to understand the lesson and learn the subjects they had difficulty in a better way. We predict that the data obtained as a result of this study will guide the anatomy education that will be presented to the students in the following years and that the interactive education will contribute more to the students' learning of the lesson.

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