



Opinions of Adıyaman University Dental Faculty Students on Interactive Anatomy Education

Adıyaman Üniversitesi Diş Hekimliği Fakültesi Öğrencilerinin İnteraktif Anatomi Eğitime İlişkin Görüşleri

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Abstract

Objective: In recent years, dentistry has determined its characteristic values in scientific sense. Anatomy lectures is available in the first year of dentistry education as in all branches of health care related field. The evaluation and understanding of students' perspectives in anatomy education is of great importance in the development of anatomy education and teaching methods. In this study, it is aimed to evaluate the thoughts about anatomy education of first year students of Adıyaman University Faculty of Dentistry and to find out the contribution that they have made to the interactive anatomy learning through team work.

Material-Method: 60 students (n = 60) who receive anatomy lecture in the first semester of Adıyaman University Faculty of Dentistry in the academic year of 2016-2017 were included in the study. Data were obtained by using a feedback questionnaire consisting of 29 closed-ended questions. The questionnaires have been prepared to be answered with a scale of 5-point likert. The data were analyzed using the IBM SPSS statistics package program.

Results: It is estimated that the students used lecture notes for theoretical part and textbook for practical part mostly. Satisfaction levels of 88.3% and 85% were detected for theoretical part and practical courses respectively. 71.7% of the students completed project assignments within 1-3 weeks. 70.0% of the students included in the study reported that they found this practice contributed to like anatomy courses. While 91.7% of the students emphasized that the homeworks they have contributed to their anatomy learning, 73.4% of the students gave up the idea of 'working anatomy and understanding difficult'.

Conclusions: We believe that the data obtained will be useful in developing educational alternatives related to anatomy, in overcoming existing deficiencies and in providing students with assignments and active participation in education. In addition, we have also pointed out that the education given in dentistry faculties can reach better points by applying feedback questionnaires in anatomy education which needs a lot of time and effort.

Keywords: Anatomy Education, Faculty of Dentistry, Feedback

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Özet

Amaç: Son yıllarda diş hekimliği bilimsel anlamda karakteristik değerlerini belirlemiştir. Sağlık alanında eğitim veren tüm branşlarda olduğu gibi Diş Hekimliği Fakültelerinde de öğretim programının ilk yılında anatomi eğitimi verilmektedir. Anatomi eğitiminde öğrencilerin bakış açılarının değerlendirilmesi ve anlaşılması, anatomi eğitimi ve öğretim yöntemlerinin geliştirilmesinde büyük önem taşımaktadır. Bu çalışmada Adıyaman Üniversitesi Diş Hekimliği Fakültesinde öğrenim gören 1. sınıf öğrencilerinin anatomi eğitimi hakkındaki düşüncelerinin değerlendirmesi ayrıca takım çalışmaları ile interaktif eğitimin anatominin öğrenilmesine sağladığı katkıların ortaya çıkarılması amaçlanmaktadır.

Materyal-Method: Çalışmaya 2016-2017 eğitim-öğretim yılında Adıyaman Üniversitesi Diş Hekimliği Fakültesine ait 1. sınıfta anatomi eğitimi alan toplam 60 öğrenci (n=60) dahil edildi. Veriler 29 kapalı uçlu sorudan oluşan bir anket formu kullanılarak geri bildirim yöntemiyle elde edildi. Anket soruları 5'li Likert ölçeği ile cevaplandırılacak şekilde hazırlandı. Elde edilen veriler IBM SPSS paket programı ile analiz edildi.

Bulgular: Öğrencilerin, anatominin teorik kısmını çalışırken en çok ders notlarından, pratik kısmını çalışırken en çok ders kitabından faydalandıkları tespit edildi. Aldıkları anatomi eğitiminin teorik kısmı için %88,3 ve pratik kısmı için %85,0 memnuniyet düzeyleri olduğu belirlendi. Öğrencilerin %71,7'si 1-3 hafta içerisinde proje ödevlerini bitirmiştir. Çalışmaya dâhil olan öğrencilerin %70,0'i bu uygulamanın anatomi derslerini sevmelerine katkı sağladığını belirtmiştir. Öğrencilerin %91,7'si hazırladıkları ödevlerin anatomi öğrenmelerine katkıda bulunduğunu vurgularken %73,4'ü 'anatomi çalışmak ve anlamak zordur' düşüncesinden vazgeçmişlerdir.

Sonuç: Elde edilen verilerin anatomi ile ilişkili eğitim alternatifleri geliştirmesinde, mevcut eksikliklerin giderilmesinde ve verilen proje ödevleri ile öğrencilerin eğitime aktif katılmasının sağlanmasıyla anatominin daha etkin öğrenilmesinde yararlı olacağını düşünmekteyiz. Ayrıca diş hekimliği fakültelerinde de ciddi bir zaman ve emek harcanan anatomi eğitiminde geri bildirim anketleri uygulanarak verilen eğitimlerin daha iyi noktalara gelebileceğine de dikkat çekmiş olmaktadır.

Anahtar kelimeler: Anatomi Eğitimi, Diş Hekimliği Fakültesi, Geri Bildirim

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Introduction

Dental science, being a part of general medical education for the past several hundred years, has established itself as an institutional and resident by making use of the tradition of general medical disciplines. In the following periods, dentistry as a special and unique medical discipline determined the scientific parameters of the theoretical and application fields, formed the structure of the lower branches and extended its place in the scientific circulation parallel to current medicine and technology in an inter / multi disciplinary plane with independent scientific framework. In addition to basic medical sciences and primary medical applications, oral treatment and oral surgery draws the boundaries of the curriculum of the dentistry sciences (1).

The aim of the medical and dental training which are given in the curriculum is to provide students with the basic knowledge and skills of their profession (2). The human anatomy, the oldest known medical science, is described as one of the most important components of medical and dental education (3). The anatomy is broadly defined as the science of studying the normal shape, and structure of organs, the location of these organs, and the structural and functional relationships between them in the broad sense (4). Anatomy is a discipline given to the students of medicine, dentistry and health sciences in the first years of their education and it is the basis for medical terminology and clinical sciences (5). Anatomy as a visual science has a very important place in the curricula of basic medical sciences of medical faculties (5).

Anatomy education is given in the form of theoretical and practical courses in the faculties of Medicine and Dentistry and mainly include cadaver-based practices. Since dissections provide the ability to recognize the three-dimensional structure of the body which cannot be obtained by methods such as books, Atlas, model, computer programs, practical courses in anatomy education are as important as theoretical courses (6).

There are various published researches on the anatomy education in dentistry in the literature (7, 8). These studies have been discussed more and helped to further the education of a scientific axis anatomy Surveys reveal the tendency of dissection based on anatomy education approach to leave its place in projection and computer based on modeling in recent years (9). The first study on student feedback, one of the most frequently used methods to assess educational effectiveness since the early 1900's, was conducted at Purdue University in 1927 (10). In addition to its role in overwhelming the difficulties due to changes in the curriculum and contributing to communication between students and lecturers, feedback from the students, it is an important and integral component of the teaching process and students' knowledge and it increases professional success (11, 12). The so-called student appreciation, satisfaction or feedback is the most frequently used method in evaluating education in higher education (13-15).

In a crowded group of student teams consisting of 5-7 students, the learning based on team work actively participated by

the learners is carried out by a team of specialists in place of individuals and teams in order to realize individual and team level learning, can be defined as a teaching strategy (15). According to Vygotsky's (1978) (16) theory of social constructivism, learners' sense of meaning and meaning are realized through social interactions. Teachers and other students have a fundamental role in understanding social interaction knowledge. The cognitive skills that can be developed with expert guidance and co-operation with peers always involve a larger area that can be developed alone, that is, better and more learning is possible with social interaction. Since educational programs are dynamic processes, it is important to monitor them with feedback and to use interactive methods in education (17).

There is a widespread anatomy satisfaction survey in medical faculties and there is no study evaluating the anatomy training of dental students as a whole. Anatomy education between Europe and Turkey was compared, but no concrete information was obtained because questions about the quality of education and its development were not asked. In this study, we aim to reveal the effects of dental faculty students' anatomical thinking about their anatomy and their education interactively with team work and their effects on anatomy learning, and to emphasize the importance of anatomy education in dental faculties and thus to reach more concrete information

Material-Method

Students who participated in the study signed an approval form for survey. In this study, first-year students who took Anatomy course at Faculty of Dentistry in the spring semester of 2016-2017 academic years were taken as population. No attempt was made to select a sample, and the entire population was tried to be reached. 60 persons (n=60) (98.36%) participated in the study and 1 students (1.63%) did not participate in the study. In order to allow students to evaluate all the anatomy training they have received, studies were carried out before the final exam after the completion of the courses.

In this cross-sectional, descriptive study, students' opinions about anatomy education were determined using a volunteer-based questionnaire. In which 29 closed-ended questions were asked to the students. The questionnaire form consists of demographical information, course materials and grades of students, and their thoughts about anatomy education. The items about satisfaction were designed as a 5-point Likert-type scale consisting of "always", "mostly", "frequently", "occasional", "never" was used.

During the semester, practical project assignments were given in order to provide interactive participation of the students in the classroom and to facilitate their anatomy learning. For project assignments, students are asked to form a total of 10 teams consisting of 6 people. The teams were asked to randomly share anatomical systems in accordance with the curriculum of the general anatomy they had taken by the lecturer, and they were asked to plan and implement an applied project on the topics. The project content includes

the presentation of posters, three-dimensional materials, preparing a power point presentation, and a presentation of the work they do on each team topic (Figure1).



Figure 1. Endocrine and digestive system poster presentations

In the survey used in the study, six questions were asked in the “very little”, “little”, “medium”, “excess”, “too many” options in order to evaluate the contributions of the teams to their anatomy learning. The name, surname and student numbers of the students were not included in the questionnaire which was used to make the feedback reliable. During the implementation of the questionnaires, it was tried to ensure that no one of the teaching staff of the Department of Anatomy was present.

Statistical analyses were performed using IBM SPSS version 20 for Windows. Categorical variables were compared using the Chi-square test and were expressed as counts and percentages. The Kruskal- Wallis H test was used to compare the groups of resources that the practical and the theoretical part of the anatomy used while working. As a result of these analyses, the groups which were found significant were compared using the Dunn’s multiple comparison tests. The results of numeric variables were presented as mean±standard deviation and median. $P < 0.05$ was considered statistically significant.

Results

The mean age of 60 students participating in the study was 19.65 ± 1.31 (min=18-max=24). Of these students, 33 (55.0%) were female and 27 (45.0%) were male ($p > 0.05$). The average grade score of the students was 54.05 ± 18.63 (min=10.00-max=90.00) and the final grade was 71.81 ± 12.40 . It was determined that 49 (81.7%) of the students liked the theoretical lessons, 11 (18.3%) did not like it, 39 (65.0%) liked the practical lessons and 21 (35.0%) did not. The demographic characteristics of the students participating in the study, their attendance at the classes, and the duration of the anatomy are shown in Table 1.

The answers of the students’ opinions about the anatomy education, the opinions of the teachers about the method and style of teaching the lectures, the adequacy levels of the

Table 1. Demographic characteristics of students, visa grade averages, attendance to classes and anatomy working times

General Information of Students	n	%	P
What is your gender?			
Female	33	55.0	0.439
Male	27	45.0	
Did you enjoy your dentist's department?			
Yes	44	73.3	<0.001
No	16	26.7	
Are you happy in the dental department at this moment?			
Yes	53	88.3	<0.001
No	7	11.7	
What is your continuation to anatomy theoretical courses?			
Continuous	53	88.3	<0.001
I have problems going on	7	11.7	
What is your continuation to anatomy practice courses?			
Continuous	52	86.7	<0.001
I have problems going on	8	13.3	
How many hours a week do you work anatomy individually?			
0-1 hour	18	30.0	0.015
1-3 hour	23	38.3	
3-5 hour	13	21.7	

education materials presented to the students, the thoughts about the examinations made and the teachers’ communication levels are shown in Table 2.

Students were asked to sort out the resources they used for the theoretical and practical parts of the anatomy most recently. For theoretical and practical lectures of anatomy, four basic educational materials were ordered from the most to the least used. The students made this sequence by giving numerical values from 1 to 4 (most preferred 4, least preferred 1) for the training materials they used. For statistical calculations of the data, the maximum values of the range of values (maximum for the theoretical and practical part = 4) were given for the most preferred training material. For the least preferred training material, the minimum value of the range of values 1 (min = 1) was given. Thus, an average, standard deviation, median and p value was obtained for each training material used in the theoretical and practical part of the anatomy. The average of these values was the largest, the most educational material the students used, and, the least educational material they used. According to this data, the most useful source of the students’ theoretical part of the anatomy was lecture notes with 2.66 ± 1.39 . Course notes were followed by atlas (printed book) with 2.55 ± 0.83 , atlas (interactive / pdf) with 2.33 ± 0.93 , and course book with 2.18 ± 1.42 ($p > 0.05$). The score for

Table 2. Evaluation of students' thoughts on anatomy education

Students' thoughts on anatomy education	Always n (%)	Mostly n (%)	Often n (%)	Sometimes n (%)	Never n (%)	P
Do you enjoy working with anatomy?	3(5.0)	13(21.7)	8(13.3)	30(50)	6(10)	<0.001
Do you think that the theoretical training of anatomy is sufficient in your faculty?	21(35.0)	23(38.3)	9(15.0)	7(11.7)	0(0.0)	0.004
Do you think that the practical training of anatomy is sufficient in your faculty?	18(30)	19(31.7)	14(23.3)	7(11.7)	2(3.3)	0.001
Do you think that the teaching method of the teacher affects your success in anatomy in anatomy theory course?	23(38.3)	17(28.3)	10(16.7)	10(16.7)	0(0.0)	0.049
Do you find the number of mannequins enough?	10(16.7)	20(33.3)	8(13.3)	19(31.7)	3(5.0)	0.001
Do you think that the anatomical theoretical examinations made in your faculty assess and evaluate your anatomic knowledge adequately?	15(25.0)	22(36.7)	8(13.3)	10(16.7)	5(8.3)	0.005
Do you think that your anatomy practice exams in your faculty measure and evaluate your anatomy knowledge adequately?	16(26.7)	16(26.7)	12(20.0)	9(15.0)	7(11.7)	0.240
Can you ask questions easily in the theoretical lessons?	39(65.0)	12(20.0)	3(5.0)	5(8.3)	1(1.7)	<0.001
Can you ask questions easily in the practical lessons?	33(55.0)	17(28.3)	5(8.3)	4(6.7)	1(1.7)	<0.001

Table 3. Descriptive statistics of the sources that students use the practical and theoretical part of the anatomy

	Resources	Mean ± SD	Median	P KW
When you use the theoretical part of the anatomy, what resources do you use the most, the most aesthetically correct one?	Lecture Notes (I)	2.66±1.39	3	0.225
	Atlas (printed book) (II)	2.55±0.83	3	
	Atlas (interactive / pdf) (III)	2.33±0.93	2	
	Textbook(IV)	2.18±1.42	2	
When you use the practical part of the anatomy, what resources do you use the most, the most aesthetically correct one?	Lecture Notes (I)	2.26±0.95	2	0.05
	Atlas (printed book) (II)	2.32 ±1.16	2	
	Atlas (interactive / pdf) (III)	2.50±0.89	3	
	Textbook(IV)	2.95±1.32	4	

Table 4. Evaluation of students' thoughts about project assignments given in anatomy class

Students' thoughts on anatomical project assignments	Very little n (%)	Little n (%)	Middle n (%)	Much n (%)	Too Much n (%)	P
How much contribution did homework make to learning that anatomy?	1(1.7)	4(6.7)	21(35.0)	27(45.0)	7(11.7)	<0.001
How much did your homework anatomy contribute to your anatomy before you prepared your homework?	6(10.0)	12(20.0)	23(38.3)	15(25.0)	4(6.7)	0.001
How much did your homework "broke an anatomy prejudice"?	10(16.7)	10(16.7)	24(40)	13(21.7)	3(5.0)	0.001
What is the contribution of the General Anatomy course you took this term to your education?	0(0.0)	4(6.7)	16(26.7)	24(40.0)	16(26.7)	0.004
Do you think that the lack of cadaver in anatomy training is a deficiency in the anatomy learning process?	8(13.3)	7(11.7)	17(28.3)	13(21.7)	15(25.0)	0.176

source that the students used for the practical part was 2.95 ± 1.32 for course book, 2.50 ± 0.89 for Atlas (interactive / PDF), 2.3 ± 1.16 for Atlas (printed book), and 2.26 ± 0.95 for course notes (Table 3).

The statistical analysis of the students' contribution to learning the anatomy of the relevant subject, the contribution they make to the anatomy, prejudices about the anatomy, contributions to the training of the "General Anatomy" course during the semester and answers to the questions about lack of cadaver lack in anatomy trainings are given in Table 4.

Discussion

Student feedback is one of the most commonly used methods of assessing educational effectiveness since the early 1900's (18). Reliability and validity studies are required to reflect the true state of the data obtained from student feedback forms (19). The student feedback provided by the questionnaire is one of many evaluation methods showing the quality of the education offered to them and reliability and validity are high (20). In this context, it is very important to evaluate the feedback obtained from the questionnaire studies applied to the students and to reflect the results to the education and training process in the following years. Regular evaluation of the trainings provided by the students will greatly contribute to the improvement of the quality of education offered to them, to the elimination of the identified deficiencies and to the development of new training strategies that will contribute to them. Therefore, feedback from students is very important in achieving the goals of anatomy education.

Anatomy information is very important in the realization of the physical examination of the patient in medicine and dentistry, in making the right diagnosis for the complaints and in sharing the obtained findings with patients and health personel (21). Therefore, good anatomy training is needed in order to educate qualified physicians, to give the right diagnosis for the symptoms as soon as possible, to determine the most appropriate surgical intervention if necessary and to apply it in the most correct way. For this reason, there are studies in the literature evaluating the opinions of students about their anatomy education.

It was found that 22.9% of the students in term I and 78.1% of the students in term II were positive about the anatomical theoretical courses in the study conducted in the students of term I and term II of Akdeniz University Medical Faculty (20). 61.7% of 2nd grade students of Gazi University Faculty of Medicine stated that they were generally satisfied with the theoretical courses of the anatomy and 72.2% with the anatomy practice courses (17). Tuygar et al. (22) conducted studies at four different medical faculties and found that students' satisfaction with theoretical and practical training of anatomy was moderate (3.32 and 3.33, respectively, over 5). In the study conducted at Gaziantep University, the satisfaction level of the students with the theoretical and practical part of the anatomy education was determined as 67.4% and 55% respectively (23). In this study conducted in the Faculty of Dentistry, 88.3% of the theoretical part of the anatomy and 85.0% of the practical part were obtained and satisfaction

levels were determined in the anatomy training they received.

In the study conducted by Gözil et al. (17) reported that, for medical faculty students, 83.3% of the students found delivery of lecture notes useful in learning. It is seen that study notes prepared by Çetkin et al. (23) for the medical faculty students are the most frequently used educational material. Similare to the literature, it was found that the most frequently used educational material in theoretical courses was course notes. According to this data, the teachers of anatomy should consider that this training material is frequently used for students and it contributes to learning the lesson.

In the study conducted by Sindel et al. (11) 49.6% for first year students and 78.1% for second year students thought that the effect of the lectures on the understanding is high. In study conducted by Gözil et al. (17) 58.9% of the students stated that the way of teaching facilitated their learning. In Çetkin et al.'s study (23), 91.7% of the students stated that the teacher's anatomical success in the teaching of anatomy was influenced by the teaching method. In our study, 83.3% of the students stated that the anatomical success of the lecturer's teaching method in anatomy theoretical courses was affected. The results we obtained are similar to the literature.

Another important consequence of the study is; related project assignments given to students. Regarding the project assignments given, 71.7% of the students completed their homework within 1-3 weeks, 70.0% of them gave their anatomical likes, 91.7% of them contributed to learning the anatomy of that subject, and 73.4% of them had broken the prejudice of "anatomy working and understanding is difficult".

We anticipate that the data obtained as a result of this study will direct the anatomy trainings to be presented to the students in the following years and that the interactive educators will be more helpful to learn the lesson. We also think that the time and effort spent for anatomy training, in medical faculties, are also very important in dentistry faculties.

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