CYPRUS JOURNAL OF MEDICAL SCIENCES

Original Article

Preclinical Medical Education in Turkey through the Students' Perspective and Knowledge of Research Activities

Azize Örensoy[1], Sibel Bozabali[2], Selen Hızlısoy[1], Petek Uzay Çetinkaya[1], Can N. Kocabaş[3]

[1]Muğla Sıtkı Koçman University School of Medicine, Muğla, Turkey
[2]Department of Pediatric Cardiology, Muğla Sıtkı Koçman University School of Medicine, Muğla, Turkey
[3]Department of Pediatric Allergy and Immunology, Muğla Sıtkı Koçman University School of Medicine, Muğla, Turkey

BACKGROUND
Medical education is a long and difficult process. Nowadays, along with advances in communication technologies and the ease of access to information, new methodologies are applied too. However, the educational process shows that there are problems with training and guidance in Turkey.

MATERIAL and METHODS
An e-questionnaire was sent to randomly selected medical students enrolled on courses in Turkey in the 2014–2015 academic year. The students were questioned about their e-database using habits, and their views on research projects. The student responses were collected simultaneously in the database and the values in the database were assessed at every stage at instants in time.

RESULTS
The survey was conducted with the participation of 450 students. The majority of students stated that they attended lectures partial or full-time (90%). In total, 371 of the 450 students thought that the lectures were unsatisfactory. The number of students who needed additional resources were 273 (73.5%), and the proportion of those planning to take private lesson was very high (77.4%). Although education was given, the ratio of those using the e-database provided by the universities and The Scientific and Technological Research Council of Turkey (TUBITAK) was very low (17.4%). While only 15.4% students stated that they participated in article time activity, the proportion of students participating in research projects was higher at 30.9%.

CONCLUSION
Students stated that their received education is not enough and they needed to complement it with private courses, and also stated that the resources provided by the Government (universities and TUBITAK) were not sufficient. It is therefore clearly important to overcome the deficiencies and increase the guidance studies provided to students in Turkey.

Keywords: Medicine, education, e-database, Turkey

INTRODUCTION

Medical education is a long and difficult process. In order to make training more qualified, new methods are being used continuously. Studies are conducted to identify new teaching methods, interactive treatment modalities for increasing the success rate of students, and for identifying easy learning models (1). Today, integrated, interactive, and active teaching models are being used in different medical faculties (2). Advances in communication technology also offer new possibilities in the field of education. For this purpose, educational resources have been established for both educators and students. To reach universal standards, educators and students should use these facilities efficiently. The widespread use of these resources provides the availability of reliable information and an actuality of medical education. With access to the latest information and through the self-improvement of medicine students, the better education of qualified physicians can be achieved (3). Developments in the field of medicine are often rapid, and thus, sharing and following this knowledge will lead to the emergence of new ideas.

In Turkey, formal medical education takes 6 years. After this education, in order to be a specialist in a field of medicine, new doctors should pass a Medical Specialization Examination (MSE). In Turkey's Health Manpower Report, issued on March 2008, it was reported that a total of 50 private educational institutions also provide training for MSE (4). This suggests that the education in the medical schools is not enough for the students. The number of those in need of support for MSE is very high (5). This reveals that the sufficiency of the education given in the faculties of medicine should be questioned. As for the faculty teaching staff and student motivation, in this regard, it is aimed to develop these through training sessions and via conferences organized by various institutions.

In our study, the adequacy of the courses taken during the training of medical students, the study resources they prefer to use, the need for additional resources, information about the organizations, the provision of support for research, and knowing and using the e-database by students were all evaluated.

MATERIALS and METHODS

Study Design
Research was conducted via the participation of medical students belonging to 67 medical faculties out of 83 (63 government, 20 foundation), which is the total number of medical faculties in Turkey, enrolled on courses in the 2014–2015 academic year (6). These 67 faculties included 55 government and I2 foundation medical schools. Students included in the study were randomly selected among members of the Turkish Medical Students Association (TurkMSIC) and their faculty friends who were not members of TurkMSIC by social sites. They were informed about the study by a standard e-mail message and their consents were collected as e-data.

Data Collection Method
An e-survey was sent via e-mail to I000 medical students. Totally, 450 of them answered the questionnaire. The survey was prepared in a format that began with 6 questions needing to be answered by each student, and then progressed after the sixth question with a scattered path according to the students' responses. While in some questions, the participant was requested to mark only one answer, in some of them multiple answers could be given. The students' responses were collected simultaneously in the database of the e-survey. The values in the database were evaluated at every stage instantly in the form of graphs and numerical data. The questionnaire was pilot tested on 50 medical students and all the questions worked without any problem.

In our survey, the students' satisfaction from their given medical education, their resource needs, what resources they used (with the usage rates of resources recoded in the e-databases and e-library), and to which additional resources they resorted to in the process of preparation for exams were questioned. They were also questioned about their knowledge about the research projects at medical faculties, the adequacy of equipment for a research project, and whether or not they were encouraged in undertaking these projects. The distribution of the data obtained was evaluated by considering whether the students were in a preclinical or clinical grade.

The survey was undertaken following the approval of the local ethics committee.

Data Analysis
Statistical analyses were performed using Statistical Package for the Social Sciences, (SPSS Inc.; for Windows version I5.0; Chicago, IL, USA). The percentages of positive and negative answers were presented as valid percents.

RESULTS
Research was conducted by the participation of 450 medical students studying in the medical faculties in Turkey. The distribution of the classes and accreditation of the faculties are summarized in Table I.

TABLE I. The distribution of the classes of students who responded to the survey and accreditation of the faculties

The distribution of the class of the students (n: 450)	n (%)
Preclinical	4I5 (92.2)
Clinical	30 (6.6)
No response	5 (I.I)
Certificate of accreditation of the medical school	n (%)
Yes	252 (56)
No	I94 (43)
No response	4 (3)

TABLE 2. The distribution of additional medical resources

Source selection	Always	Usually	Rarely	Never
Documents with Turkish translation	52	II3	85	23
Documents in foreign languages	9	42	II9	I03
Notes taken during the lessons	I64	90	I5	4
Medical specialty exam books	I0	55	I07	I0I
Additional lecturer's notes	39	95	II2	27

Used Documentary Resources and Education Satisfaction
The documentary resources used in theoretical and practical training were thought to be adequate by 72 (I6%) of the medical students. However, 37I medical students (82.4%) thought that they were inadequate. In total, 273 (60%) students who indicated that their provided education was not enough were using additional resources (Table 2).

The majority of students (77.4%) were planning to take a private lesson for MSE because they did not find the given education sufficient for their examinations, while only I3.6% of the students did not plan on taking private lessons.

Use of the Internet
The question "For what purpose are you using the Internet?" was asked for the assessment of the use of technology and e-resources in medical education. Totally, 93% of the students stated that they were using the Internet for social media, while 9I.9% of the students used it for communication and correspondence, 79.6% of them for research, I3.2% of them to benefit from the e-library, 26% to scan articles, and 36.I% to follow developments in medicine and in the world.

Use of an E-library
When we evaluated the results of the survey, only 30.6% of students stated that in their school, e-library training was given, while the majority (69.4%) stated that no e-library education was given in their school. While only 78 (I7.4%) students responded positive to the question "Do you use an e-library?", most of them, 369 (82.6%), gave the answer "no." The reasons for not using an e-library were also asked about and the responses are given in Table 3.

Use of an E-database
In our survey those who were using an e-database were questioned about which resources they used and how they learned

TABLE 3. The distribution of the causes of student inability to use the e-library

Availability of the e-library	n (%)
Available	76 (16.9)
Unavailable	369 (82)
Not answered	5 (1.1)
Total	450 (100)
Reasons not to use the e-library*	n (%)
No information about usage	208 (71)
Lack of foreign language	57 (19.5)
Failure to provide access to documents	17 (5.8)
Lack of Internet access	4 (1.4)

*291 students gave answers

TABLE 4. Reasons of e-database non-users and the distribution of e-databases

Reasons of e-database non-users* (non-users n: 297, 66.4%)	n (%)
Never heard of it	101 (34.5)
Do not know how to use it	76 (25.9)
Lack of foreign language	79 (27)
Not interested	49 (16.7)
Want to get training	88 (30)
The distribution of e-databases* (users n: 150, 33.6%)	
Google Scholar	67 (43.5)
PubMED	140 (90.9)
Medscape	33 (21.4)
TUBITAK	38 (24.7)
UpToDate	19 (12.3)
Others	28 (18.2)

*Multiple choice questions
TUBITAK: The Scientific and Technological Research Council of Turkey

to use it, and those who did not use an e-database were questioned about their reasons. The obtained responses are summarized in Table 4.

Journal Club Activities
According to the responses given in the survey, 15.3% of the students stated that they attended a Journal club, while 84.7% of students stated that they did not attend.

Research Project
While the majority of the students (87.8%) wanted to take part in a research project, currently only 30.9% of them have participated in a project. Furthermore, while 26% of the students knew the organizations that support research projects, the rate of those who did not know was 74%.

When we finally asked "Do you think you would be competent at work with your current knowledge?", 77 (17.3%) of 444 medical students who answered this question though that they would be competent at work, while 367 (82.7%) thought not.

TABLE 5. The effect of being an accredited medical school on the study data

	Accredited medical school	Non-accredited medical school	p
E-library usage (n, %)			
Yes	75 (30)	60 (31)	0.82
No	177 (70)	132 (68)	
Not answered		2 (1)	
Journal club activities (n, %)			
Yes	33 (13)	31 (16)	0.91
No	43 (17)	35 (18)	
Have no idea	174 (69)	128 (66)	
Not answered	2 (1)		
Participation in a research activity			
Yes	75 (30)	59 (30)	0.91
No	179 (69)	135 (70)	
Not answered	1 (1)		

When all the answers were compared between the accredited and non-accredited medical schools, it was demonstrated that there was no significant difference between them (Table 5).

DISCUSSION
Our study demonstrates the thoughts of medical students about medical education in Turkey, MSE preparation schools and MSE books, the resources that the students use, knowledge about the e-library and e-database, and students' attention toward scientific projects and articles. Most of the students think that the education in the faculties is not sufficient for them and hence many are planning to take additional private lessons for MSE. These high numbers of displeasure of students toward their received education suggests that training skills should be revised and improved by the medical faculties in Turkey.

In Turkey, there are no studies evaluating medical education from the point of view of the students. With the detection of issues in medical education, studies on the solutions and the standardization of education are gaining in importance all over the world (3, 7). The Turkish Ministry of Health and professional organizations, such as the Turkish Doctors' Union, have published reports about this (4, 8, 9).

Most of the participants in our study stated that the education given in the medical faculties is not sufficient and they are using additional medical resources. Students' participation in lectures seemed quite high. Nevertheless, their thoughts about the inadequacy of those lectures are noteworthy. For this reason, they clearly question the adequacy of their knowledge and self-confidence in terms of professional skills.

Consequently, when we look at the overall student profile, 1st and 2nd grade students do not plan to take private lessons for MSE, but in the coming years, the vast majority of them were planning to take private lessons in order to be successful in the MSE.

Today, with the improvement of technology, it is very easy to access medical information. Internet use in the daily lives of the students was quite common. However, the Internet usage rates for professional development were not at the same level. Regarding this issue, universities and TUBITAK provide training on e-database usage. However, the usage of this e-database, as shown in our study, is still very low. In the study of Avcı et al. (10), it was demonstrated that 93.4% of students are social media users and 89.3% of them use social media for professional purposes. However, only the most popular social sites were asked about in this study: Facebook, Twitter, LinkedIn, medical blogs, and YouTube. The most used one was reported to be Facebook, even for professional purposes.

On the other hand, in our study, considering the students who do not use the e-database were also those who did not receive training, continuing their training is thus vital to increase the utilization rate. Not knowing English as a foreign language is also a barrier for using the e-database. Arranging additional courses for students will contribute to solving this problem.

Journal clubs and research activities are extremely useful for the improvement of the students' educational level. However, many students have expressed that there is no opportunities for this or they do not know about these activities in their faculties. At the same time, the number of students who are interested in research projects is quite high. However, the problems appear to be similar to the previous situation regarding participation. The usage of resources is extremely important for students in order to compete with other students and to become future scientists.

The accreditation of schools is very important for improving education. But it was demonstrated in our study that the ways of increasing knowledge about the worldwide medical science advances, such as through the e-database usage, reaching and reading research articles, or participating in a research are not different between the accredited and non-accredited schools. Obtaining this type of research training during medical education, especially in the accredited schools, will help improving education in the medical sciences.

CONCLUSION

In Turkey, according to students, the given education in medical schools is inadequate, and there is a trend to fill this gap with private lessons. Further, the availability of e-database sources is inadequate, and knowledge of the methodologies required by modern science is not widespread.

Ethics Committee Approval: Ethics committee approval was received for this study from the ethics committee of Muğla Sıtkı Koçman University.

Informed Consent: Written informed consent was obtained from patients who participated in this study.

Peer-review: Externally peer-reviewed.

Author contributions: Concept - A.Ö., S.B., C.K.; Design - C.K., S.B., P.Ç.; Supervision - C.K., S.B.; Data Collection and/or Processing - A.Ö., S.H., S.B., C.K.; Analysis and/or Interpretation - A.Ö., S.H., S.B., C.K.; Literature Search - A.Ö., S.B., C.K., S.H., P.Ç.; Writing - A.Ö., S.B., C.K., S.H., P.Ç.; Critical Reviews - S.B., C.K.

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

Financial Disclosure: The authors declared that this study has received no financial support.

REFERENCES

1. Davis MH, Harden RM. AMEE Medical Education Guide. No. 15: problem-based learning: a prectical guide. Med Teach 1999; 21: 130-40. **[CrossRef]**
2. Kolb DA. The Learning Style Inventory: Technical Manual. Boston MA: McBer&Co, 1976.
3. World Conference on Medical Education. The Edinburg Decleration. Edinburg, 1998.
4. Sağlık Bakanliği Türkiye yükseköğretim kurulu,. Türkiye Sağlık Insangücü Raporu (Turkey Health Manpower Status Report). Ankara, 2008. Available in: http://www.tsprm.org/UserFiles/File/SEGM_sip_rapor[1].pdf.
5. Sayek İ, Ünal F. (Hacettepe University, the 40st year). Ankara: 2003.
6. Türkiye yükseköğretim kurulu, yükseköğretim bilgi yönetim sistemi. Available in: https://istatistik.yok.gov.tr/.
7. Karle H. Global standards in medical education – an instrument in quality improvement. Medical Education 2002; 36: 602-5. **[CrossRef]**
8. Sağlık Bakanlığı, Türkiye yükseköğretim kurulu. Türkiye'de Sağlık Eğitimi ve Sağlık Isangücü Durum Raporu (Turkey Health Education and Health Manpower Status Report). Eskişehir, 2014 Available in: http://sbu.saglik.gov.tr/Ekutuphane/kitaplar/insangucu.pdf.
9. Sayek I, Kiper N, Odabaşı O. TTB Mezuniyet Öncesi Tıp Eğitimi Raporu 2010.
10. Avcı K, Çelikden S, Eren S, Aydenizöz D. Assesment of medical students' attitudes on Social media use in medicine: a cross-sectional study. BMC Medical Education 2015 15: 18. **[CrossRef]**