



Historical Development and Recently Situation of History of Pharmacy and Deontology Courses in Turkey

Sevgi Şar¹, Miray Arslan¹, Bilge Sözen Şahne^{2*}

¹ Ankara University Faculty of Pharmacy, Department of Pharmacy Management

² Hacettepe University Faculty of Pharmacy, Department of Pharmacy Management

Review Article

Please cite this paper as: Sevgi Şar, Miray Arslan, Bilge Sözen Şahne. Historical Development and Recently Situation of History of Pharmacy and Deontology Courses in Turkey. IJPTP, 2016, 7(1), 2650-2656.

Corresponding Author:

Bilge Sözen Şahne

Hacettepe University Faculty of Pharmacy,
Department of Pharmacy Management,
06100, Sıhhiye, Ankara-TURKEY,
Email: bilgesozen@yahoo.com

Abstract

The first pharmacy in Anatolia, which is the cradle of civilization because of its both historical and geographical features, was opened in Darussifas founded at Seljuk Period and pharmacists in this pharmacy was grew up by the master-apprentice method.

Pharmacy Education, started at Pharmacy Class in 1838, has taken its current form by showing a rapid development after the proclamation of the Republic in 1923. History of Pharmacy and Medical Ethics Course has an important place within the scope of this education that ongoing in 25 faculties of pharmacy, which provides education.

This course, is a great importance for the pharmacy profession, is given in different faculties, in different semesters, at different times and by different trainers in Turkey today. Various articles, theses and books conducted on history of pharmacy and deontology are sources for this course.

In this study, the historical development of the History of Pharmacy and Ethics Lessons were examined and by determining the courses relevant to the subject at schools in which pharmacy education continues, the current situation has introduced. Moreover, this important area's necessity was emphasized and various suggestions for improvement have been made.

Keywords: Pharmacy Education, History of Pharmacy, Deontology

Introduction

Anatolia, which is the between Asia and Europe, had made host lots of civilizations due to its geographical place. These civilizations were started numerous developments that affect the World. Also it is known that, basis of most of the firsts about health made at these lands, too.

The first pharmacies in Anatolia were opened in hospitals established at period of Anatolian Seljuk. First of them was in Gevher Nesibe Darussifasi which was built in the city of Kayseri in 1206 by the devise of the daughter of *Kılıç Arslan*, *Gevher Nesibe Sultan* ^(1,2).

It is known that there are information about specialized people at darussifas who were employee about supplying drugs and preparing medicines, the names of them, their tasks, specialties and fees at the Darussifa's deed ^(1,2).

At these Darussifas people about pharmacy are known with the name of Şerbetiyan, Uşşaban (Aşşab), Saydalan, Tebbah-ı Eşribe (people who prepare medicine at Fatih Darussifasi), Hafız-ı Eşribe or Mahzen Emini (people who work in drug warehouse) and Edviyeküb or Edviyagu (people who prepare medicine at Süleymaniye Darussifasi) ^(1,2).

Before pharmacy education started as today, pharmacists were personally trained under the direction of a master pharmacist in Darussifas which established in the Anatolian Seljuk and Ottoman Period ^(1,2).

Pharmacy education in Turkey started at Pharmacy Class in the Imperial School of Medicine in Istanbul (Mekteb-i Tibbiye-i Adliye-i Sahane) that was opened by *Sultan II. Mahmud* on 14th May 1829 ⁽¹⁻⁴⁾. After this school in which courses had being given in French until 1870 and education period was three years, Mekteb-i Tibbiye-i Mülkiye-i Şahane (Istanbul, 1867), Haydarpaşa Military Health School (Istanbul, 1876), Central Turkey College (Gaziantep, 1876), Şam Sivil Tibbiye Mektebi (Şam, 1903) and Pharmacy School (Eczacı Mekteb-i Âlisi) (Istanbul, 1908) were opened ^(1,3,5).

At the beginning of the Turkish Republic there was only one educational institution with the name of Pharmacy School (Eczacı Mekteb-i Âlisi) in the Faculty of Medicine. This school concluded to



Faculty of Science at 1933 by University Reform, but at 1944 concluded to Faculty of Medicine again because of not showing expected development⁽¹⁻⁴⁾. At 1938 education at Pharmacy School increased from three years to four years^(1,2,4).

In our country, Ankara University Faculty of Pharmacy was established in 1960 as the first faculty after the Pharmacist High School in Istanbul. Too many High Schools and Faculties of Pharmacy followed this⁽⁶⁾. Today, pharmacy education increased to five years in our country from 2005 and it is seen that the number of pharmacy faculties is over the 30 and total quota is increasing and nearly 1770 by the information in 2014 guide of Student Selection and Placement Center (ÖSYM). Foundation years and the names of faculties of pharmacy in Turkey are given in Table 1⁽⁷⁻⁸⁾.

Table 1. Pharmacy Faculties in Turkish Universities^{7,8}

University	Foundation Year	University	Foundation Year
Ankara University*	1960	Yeni Yüzyıl University**	2010
Istanbul University*	1962	Adıyaman University***	2011
Hacettepe University*	1971	Ağrı İbrahim Çeçen University*	2011
Ege University*	1974	Trakya University*	2011
Gazi University*	1982	Cumhuriyet University*	2011
Marmara University*	1982	Çukurova University *	2011
Anadolu University*	1982	Yüzüncü Yıl University*	2011
Atatürk University*	1997	Kemerburgaz University**	2012
Mersin University*	2000	Dicle University *	2012
Inönü University*	2001	Bülent Ecevit University***	2012
Yeditepe University**	2001	Afyon Kocatepe University***	2012
Erciyes University*	2003	Süleyman Demirel University***	2012
Karadeniz Teknik University*	2003	Erzincan University*	2012
Mevlana University ***	2009	Katip Çelebi University***	2012
Bezm-i Alem Vakıf University**	2010	Biruni University*	2014
Istanbul Medipol University**	2010		

*Pharmacy Faculties currently providing education in public universities

** Pharmacy Faculties currently providing education in private universities

*** Pharmacy Faculties currently not providing education

In Turkey well as Faculties of Pharmacy, the Private High Schools started to establish from 1964 in different cities (Table 2)^(3,9) and these schools by the Law (No. 1472) on 9th July 1971, were turned to public school because of being reverse to Constitution. This schools acted as a public school a while but after the Law on Organization of Higher Education Institutions (No 2808) on 28th March 1983, they upgraded to the Faculty of Pharmacy.

Table 2. Pharmacy High Schools

Pharmacy High Schools	City	Foundation Year
Istanbul Pharmacy Private High School	Istanbul	1964
Karataş Pharmacy High School	Izmir	1967
Anadolu Pharmacy High School	Ankara	1968
Ankara Pharmacy High School	Ankara	1968
Efes Pharmacy High School	Izmir	1968
Yakındoğu Pharmacy High School	Izmir	1968
Hastaş Pharmacy High School	Eskişehir	1968
Galatasaray Pharmacy Private High School	Istanbul	1969

Materials and Methods

Relevant books, article and documents are the materials of this study. In addition, it is tried to get that these courses give in which semester, from who and how many hours by evaluation of information obtained from telephone calls and emails between academic staff who give these courses at Pharmacy Faculties and websites of faculties.

In this study, by examining the stages of the History of Pharmacy and Deontology education in Turkey with collecting necessary research and written material on the topic, present situation of it has tried to expose and the subject has been discussed in several aspects.

History of Pharmacy Courses Education History in Turkey

The subject of History of Pharmacy was taken into pharmacy education curriculum for the first time by the *Istanbul University, Faculty of Medicine, School of Pharmacy Education and Examination Regulations* entered into forced on 28th March 1945. In accordance with the 15th Article of this Regulation, *Medicine and Pharmacy History and Deontology* course was placed to the curriculum in 7th semester for two hours per week. Although there was obligation to continue this course, there was not an examination and the success of this course determined by the midterm method and the course was given by *Ord. Prof. Dr. A. Süheyl Ünver* between 1945 and 1967⁽¹⁻³⁾.

After Istanbul Pharmacy School was turned to Istanbul University Faculty of Pharmacy at 1963, *History of Pharmacy and Deontology* course was placed in 5th semester for two hours per week and continue and examination to this course were made compulsory by the *Education and Examination*



Regulations entered into force on 16th July 1964^{3,4}. By the Regulations on 29th May 1984 this course was started to give in 8th semester⁽³⁾. This course given by *Ord. Prof. Dr. A. Süheyl Ünver, Prof. Dr. Bedii Şehsuvaroğlu, Prof. Dr. M. Emine Atabek, Prof. Dr. Arslan Terzioğlu, Prof. Dr. Turan Baytop, Prof. Dr. Ahmet Ekinci and Prof. Dr. Afife Mat* at Istanbul University Faculty of Pharmacy from beginning to now^(3,4).

Sandalcı at Anadolu University Faculty of Pharmacy, by *Yrd. Doç. Dr. Nazlı Şencan* at Yeditepe University Faculty of Pharmacy and by *Yrd. Doç. Dr. Halil Tekiner* at Erciyes University Faculty of Pharmacy⁽¹⁰⁾.

Today, History of Pharmacy and Deontology courses are taught in different semesters and at different hours at Faculties of Pharmacy, which providing education, in Turkey. These courses generally are given by Pharmacy Management Department's and

Table 3. History of Pharmacy and Deontology courses at curriculum of Faculties of Pharmacy in Turkey ^(11,12)

Name of the Faculty	Name of the Course	Semester	Hours/week	ECTS
Ağrı İbrahim Çeçen University Faculty of Pharmacy	History of Pharmacy	3		2
Anadolu University Faculty of Pharmacy	History of Pharmacy	1	2	2.5
	Pharmacy Deontology and Ethics	9 and 10	1	1.5
Ankara University Faculty of Pharmacy	History of Pharmacy and Deontology	3	1	2
	General Ethics, Pharmacy Ethics and Pharmacist-Patient Communication	9	2	2
Atatürk University Faculty of Pharmacy	History of Pharmacy and Deontology	4	1	1
Bezmiâlem Vakıf University Faculty of Pharmacy	History of Pharmacy and Deontology	1	1	2
Cumhuriyet University Faculty of Pharmacy	History of Pharmacy and Ethics	1	2	4
Dicle University Faculty of Pharmacy	History of Pharmacy and Deontology	1	2	
Ege University Faculty of Pharmacy	History of Pharmacy and Deontology	5	1	2
Erciyes University Faculty of Pharmacy	History of Pharmacy and Ethics	3	2	
Gazi University Faculty of Pharmacy	History of Pharmacy and Deontology	8	2	2
Hacettepe University Faculty of Pharmacy	History of Pharmacy and Deontology	1	2	2
İnönü University Faculty of Pharmacy	History of Pharmacy	1	2	3
	Profession Ethics	9	1	2
İstanbul University Faculty of Pharmacy	History of Pharmacy and Deontology	8		2
İstanbul Kemerburgaz University Faculty of Pharmacy	Legislations in Pharmacy and Ethics	4	3	3
	History of Pharmacy	7	2	4
İstanbul Medipol University Faculty of Pharmacy	History of Pharmacy	3		1
	Orientation to Pharmacy and Ethical Principles	1		
Karadeniz Teknik University Faculty of Pharmacy	History of Pharmacy and Deontology	1	2	4
Marmara University Faculty of Pharmacy	Deontology and Ethics	6	1	
	History of Pharmacy	9	2	3
Mersin University Faculty of Pharmacy	History of Pharmacy and Deontology	8	1	2
Trakya University Faculty of Pharmacy	History of Pharmacy and Deontology	7		4
Yeditepe University Faculty of Pharmacy	History of Pharmacy and Deontology	8	2	3
Yeni Yüzyıl University Faculty of Pharmacy	Deontology and Ethics	8	2	2
	History of Pharmacy	2	2	2

History of Pharmacy and Deontology course has been given by Instructor *Pharm. Şevket Yağtu* between the years of 1961-1980 at Ankara University Faculty of Pharmacy, and in the subsequent years has been given by *Prof. Dr. Eriş Asil, Prof. Dr. Sevgi Şar and Prof. Dr. Gülbin Özçelikay*⁽⁶⁾. The same course is given by *Prof. Dr. Aysen Karan, Prof. Dr. İsmail Üstel, Prof. Dr. Eriş Asil and Prof. Dr. Selen Yeğenoğlu* at Hacettepe University Faculty of Pharmacy, by *Prof. Dr. İsmail Ulutaş, Prof. Dr. A. Haydar Bayat, Prof. Dr. Tekant Gözler, Prof. Dr. Levent Tuğrul, Prof. Dr. Aysen Karan, Yrd. Doç. Dr. Sevil Aşıcı, Doç. Dr. İkbâl Sucu, and Yrd. Doç. Dr. Bülent Kiran* at Ege University Faculty of Pharmacy, by *Doç. Dr. İkbâl Sucu and Prof. Dr. Ekrem Sezik* at Gazi University Faculty of Pharmacy, by *Prof. Dr. Emre Dölen* at Marmara University Faculty of Pharmacy, by *Prof. Dr. İhsan Sarıkardeşoğlu, Prof. Dr. Sevgi Şar, Prof. Dr. Selen Yeğenoğlu, Prof. Dr. Ömür Elçioğlu, Prof. Dr. Yusuf Öztürk and Mert*

History of Pharmacy and Ethics Department's faculty members at faculties.

The lecturing status of History of Pharmacy and Deontology courses at Faculties of Pharmacy in Turkey are shown in Table 3^(11,12). Instead of Yüzüncüyıl University Faculty of Pharmacy, this course is in the core curriculum of all faculties of pharmacy and generally given for one or two hours per week. History of Pharmacy course is compulsory course in general but it is an elective course at Erzincan University, İstanbul Kemelburgaz University and Trakya University Faculty of Pharmacy.

Chair of the History of Pharmacy was transformed into Department of Pharmacy Management after the universities were reorganized by the Law (no 2547) at 1982 in Turkey. There are four Departments



of Pharmacy Management (Ankara Uni. Fac. of Pharm., Hacettepe Uni. Fac. of Pharm., Ege Uni. Fac. of Pharm. and Istanbul Uni. Fac. of Pharm.,) and also there are two Department of History of Pharmacy and Ethics (İstanbul Uni. Fac. of Pharm.-2013, Erciyes İstanbul Uni. Fac. of Pharm.-2014) in Turkey. In addition faculty members of the different departments who are interested in this topic give this courses if there is not any of these departments.

Deontology Courses Education History in Turkey

The concept of *deontology*, which includes physicians' and pharmacists' mandatory duties to patients, colleagues and society once upon a time, has changed today considerably. Anymore, medical deontology has become a science including the rules about "giving good, helpful and efficient service to patients and do no harm". The first deontological rules about health professions in our country were in the text of the *Diploma Oath* which was read at the ceremony for the first graduates from *Mekteb-i Tıbbiye-i Adliye-i Şahane* in 1843⁽³⁾.

The course about *medical deontology* was known the name of *Vezaif-i Tıp* at Ottoman Period and given in 1st class at Department of Medicine. Firstly the name of deontology course were Medical Good Moral Science (*İlm-i Hüsn-ü Ahlak-ı Tıbbiye*) then it was changed to Duties of the Doctors (*İlm-i Edeb ve Vezaif-i Etibba*)^(3,13-15).

The first author in our country, treating the topic of the medical ethics was *Hayrullah Efendi* (1820-1866). Many issues related to medical ethics had been touched upon in *Hayrullah Efendi's* book *Makalât-ı Tıbbiye* published in Istanbul at 1848^(3,13,16).

The courses about *Medical Professional Ethics* at *Mekteb-i Tıbbiye-i Adliye-i Şahane* were given by *Dr. Nahabed Roussinian Efendi* (1819-1876) from 1874 to his death and his book that he prepared in this field could not published^(3,13,14,17). After *Dr. Roussinian Efendi* death, *Dr. Joseph Nouridjan* (Nurican) *Efendi* gave this course⁽¹³⁾. The rules about Deontology of Pharmacy at Ottoman Period were placed in *Akrabadin*, the book of *Head physician of Aleppo Salih bin Nasrullah* (death 1669). In this book besides the deontological rules, punishments that the pharmacists will face when they do not meet them were mentioned, too⁽³⁾.

The first course about the deontology at *Istanbul Pharmacy School* was placed in 3th class in 1914 with the name of *Usul-i muaşeret-i ispençiyariye* (Good Relationship Ways in Pharmacy). This course was given in 1930 curriculum again in 3th class by *Mustafa Nevzat Pısak* with the name of *Kavanin ve Nizam-ı İspençiyariye ve Deontoloji* (Laws, Laws of Pharmacy and Deontology)^(3, 5). From 1938-1939 academic year education duration at this school increased to 4 years and this course was placed to education program as a conference with the name of *Deontology* which has no examination at 3th semester for 1 or 2 hours per week⁽³⁾.

This course is given today generally almost all of the Faculties of Pharmacy with the History of Pharmacy course with the name History of Pharmacy and Deontology. In our country, the subject of deontology is given instead of history of pharmacy only at Anadolu University Faculty of Pharmacy with the name of *Pharmacy Deontology and Ethics* and at Marmara University

Faculty of Pharmacy and Yeni Yüzyıl University Faculty of Pharmacy with the name of *Deontology and Ethics*.

Publications about History of Pharmacy and Deontology

First publications about *Turkish History of Pharmacy* was made by *Pharmacist Renato* and *Pharmacist Zanri*, who investigated History of Pharmacy in Ottoman Period, between the years of 1850-1860. *Naşit Baylav*, *Osman Şevki Uludağ*, *Feridun Nafiz Uzluğ*, *A. Süheyl Ünver* and *Bedii Şehsuvaroğlu's* publications followed them during the Republican period^(1,3). The books written in this field are *Turkish History of Pharmacy* by *A. Süheyl Ünver* at 1952⁽¹⁰⁾, *History of Pharmacy* by *Naşit Baylav* at 1968⁽¹⁾, *History of Pharmacy Book* by *Bedii Şehsuvaroğlu* at 1970⁽¹⁸⁾ and *Turkish History of Pharmacy* by *Turhan Baytop* at 1985⁽²⁾. In addition, the last book's shortened 2nd edition is made by *Afife Mat* at 2001⁽¹⁹⁾. Besides these textbooks, there are some publications as lecture notes like *Prof. Dr. Emre Dölen's* History of Pharmacy Lecture Notes (1995)⁽²⁰⁾ and *Yrd. Doç. Dr. Bülent Kiran's* History of Pharmacy and Deontology Lecture Notes (2014)⁽²¹⁾. Furthermore, there are books as following; *Eskisehir's* History of Pharmacy by *Mert Sandalcı* (2014)⁽²²⁾, *Kayseri's* History of Pharmacy by *Yrd. Doç. Dr. Halil Tekiner* (2005)⁽²³⁾, *Turkish History of Pharmacy Research* by *Turhan Baytop* (2000), *An Essay on the History of Pharmacy Bibliography of Turkey (1927-2008)* by *Prof. Dr. Gülbin Özçelikay* and *Uzm. Ecz. Halil Tekiner* (2009)⁽²⁴⁾. Additionally there are two Pharmacists' Almanac prepared by *Remzi Kocaer* at 1945 and 1967.

There is not any journal about History of Pharmacy and Deontology in our country. The manuscripts in this field generally public in the *Acta Turtica Historiae Medicinae* (Turkish History of Medicine Yearbook), *The New History of Medicine Studies*, *Türkiye Klinikleri Journal of Medical Ethics-Law and History*, *Lokman Hekim Journal of History of Medicine and Folk Medicine* and *Journal of The Center for Ottoman Studies Ankara University*. This publications can be about folkloric medicine, history of medical plants, biographical studies, pharmacy in ancient times, pharmacy in Anatolian Seljuk and Ottoman period, Islamic scholars and their works, pharmacopoeias, manuscripts, books, historical pharmacies, pharmacy associations and pharmacy journals.

There are also booklets about pharmacy deontology published by *Pharmacist Sevkett Yağtu* at 1968 with the name of *Pharmacy Deontology (Professional Ethics and Etiquette)*⁽²⁵⁾ and *Prof. Dr. Turhan Baytop* at 1992 with the name of *Pharmacy Deontology*⁽²⁶⁾. When looking at thesis, it can be seen that there are two doctoral thesis in the field of medical and



pharmacy ethics and deontology at Ottoman period⁽³⁾. One of them was Department of Medical History and Ethics lecturer Prof. Dr. Nil Akdeniz Sari's doctoral thesis "*Physician and Medical Ethics in the Ottoman*" (Istanbul-1995)⁽²⁷⁾ and the other one was Prof. Dr. Rengin Dramur Bütün's (lecture from the same department) doctoral thesis "*Pharmacy and Deontology in the Ottoman between the years of 1838-1908*" (Istanbul-1984)⁽²⁸⁾. Then in the field of Medical Ethics two masters and four doctoral thesis were made.

There are two thesis, one of them is a doctoral thesis with the title of "*An investigation of deontological violation cases referred to İzmir Pharmacist Chamber Honorary Committee*" by Bülent Kiran (2012)⁽²⁹⁾ and the other is master thesis with the title of "*A study on history of pharmacy of Kayseri and contributions of pharmaceutical enterprises on social life and economy of Kayseri*" by Halil Tekiner (2006)⁽³⁰⁾ constructed under the supervision of the Pharmacy Management Department in the field of Pharmacy Deontology.

Since 1990, *Turkish History of Pharmacy Meetings* have been holding in the History of Pharmacy field. These meetings, the latest of it was made 2014 as XIth, are held in a different city every two years and proceedings on the history of pharmacy field are presented. But only proceedings articles of these meetings on 1990⁽³¹⁾, 1998⁽³²⁾, 2002⁽³³⁾ and 2012⁽⁴⁾ have been booked.

Basics of the Pharmacy Museums which can be called as laboratories of the History of Pharmacy was the museum opened by Prof. Dr. Turhan Baytop at Istanbul University Faculty of Pharmacy in 1960. From this date, pharmacy museums were created both within the faculties of pharmacy and by a variety of private organizations is known.

In addition, there is a *Turkish Pharmacists Deontology Regulation* entered into force with the adopted Law No. 6/10314 on 9th July 1968 that pharmacists obliged to comply with in our country. This regulation consists of 3 sections and 20 items and generally regulates relationship between pharmacists, patients and doctors^(3,34).

Results and Discussion

Today, History of Pharmacy and Deontology courses generally are given at 4th class and 1 hour per week in our country. Owing to a lack of course hours and be taught one semester, History of Pharmacy and Deontology cannot be given enough to students. Hence, it is necessary to increase the hours of this course.

In the courses at Anadolu University Faculty of Pharmacy with the name of *Pharmacy Deontology and Ethics* and at Marmara University Faculty of Pharmacy and Yeni Yüzyıl University Faculty of Pharmacy with the name of *Deontology and Ethics*, the subject of Deontology is given separately from the History of Pharmacy. There is not any department or discipline on this issue at these faculties, so the courses generally are given by a contract faculty member from the outside.

If the importance of the History of Pharmacy and Deontology issues to be considered for pharmacy profession, it is seen that courses should be given in integrity and by faculty members who specialize in this area. The faculty members, taken with postgraduate education to be trained in this field, are needed

in faculties. Many of the ethical and deontological issues are encountered in the field of pharmacy like in other fields with rapid progress of science and technology. Thus, today the importance of Deontology and Ethics courses' is more of a priority. However, there is not also a department under the name of "History of Pharmacy and Deontology" that graduate education is available. Therefore, absence of the postgraduate training program has led to the lack of trained faculty members on the History of Pharmacy and Deontology issue. The existence of a relevant department and the support thereof provide trained faculty members in this field for Faculties of Pharmacy and also giving the courses on this issue by the different departments of the faculty will be precluded.

Also, increase will be seen in the quality of pharmacy education by the enlargement of hours and content of these courses, which should be given by the Department of Pharmacy Management at Faculties of Pharmacy in the current situation in Turkey, as well as by training the person skilled in this field and by these people with taking responsibility for these courses.

In our country, by examining the education and training programs determining the teaching hours of the courses relating to History of Pharmacy, Deontology and Pharmacy Ethics, which are not only a course but also a very rich research field, again and giving these courses in the appropriate semester and duration will provide a major contribution to this field. In addition, training of experts by supporting the postgraduate education in this field and putting History of Pharmacy, Deontology and Pharmacy Ethics courses into the education program as separate courses by educated faculty members will bring a lot to this field.

References

1. Baylav N. Eczacılık Tarihi [History of Pharmacy]. Istanbul: Yörük Publishing, 1968.
2. Baytop T. Türk Eczacılık Tarihi [Turkish History of Pharmacy]. Istanbul: Istanbul Univ.Yay.No.3358 Eczacılık Fak.No.47, 1985.
3. Baytop T. Türkiye'de Eczacılık Eğitimi'nin 150. Yılı [150th Years of Turkish Pharmacy Education]. Istanbul: Türkiyat Publishing, 1989.
4. Mat A. Türkiye'de Eczacılık Tarihi Dersinin Geçmişi ve Geleceği [History and Future of the History of Pharmacy Courses in Turkey] (in X. Türk Eczacılık Tarihi Toplantısı Bildiri Kitabı, Ed., Mat A., Tekiner H.). Istanbul: Portakal Publishing, 2012.
5. Dölen, E. Seksenbeş Yıl Önceki Eczacılık Öğretimi: 1925-26 (Ders Programı, Müfredat ve Hocalar) [Pharmacy Education in Previous Eighty Years: 1925-26 (Course Schedule, Curriculum and Teachers)] (in X. Türk Eczacılık Tarihi Toplantısı Bildiri Kitabı, Ed.,



Mat A., Tekiner H.). Istanbul: Portakal Publishing, 2012.

6. Coşkun M, Şar S. Ankara Üniversitesi Eczacılık Fakültesi (1960-2010) 50. Yıl Almanacağı [50th Years' (1960-2010) Almanac of Ankara University Faculty of Pharmacy]. Ankara: Mattek Publishing, 2010.

7. Student Selection and Placement Center Guide [online]. Available from: [Internet] 2014 <http://www.osym.gov.tr/>

8. Şar S. Türkiye'de Eczacılık Fakültelerindeki Başlangıçtan Bugüne Lisans Diploması Eczacılık Olan Kadın Öğretim Üyeleri [Women Faculty Members who has Postgraduate Diploma in Pharmacy at Faculty of Pharmacy Beginning from Today in Turkey]. Istanbul: VII. Türk Tıp Tarihi Kongresi, 2002.

9. Özçelikay G. Türkiye'de Başlangıcından Günümüze Kadar Eczacılık Tarihi ve Deontoloji Öğretimi [Education of History of Pharmacy and Deontology in Turkey from Beginning to Today] in V. Türk Tıp Tarihi Kongresi Proceedings. Ed: Esin Kahya, Sevgi Şar, Adnan Ataç, N. Yasemin Oğuz, Berna Arda). Ankara: Ankara University Publishing, 1999.

10. Ünver AS. Türkiye Eczacılık Tarihi [Turkish History of Pharmacy]. Istanbul: Hüsnütabiat Publishing, 1952.

11. Coşkun GHÖ. Eczacılık Eğitiminde Eczacılık Etiğinin Yeri ve Öğrenim Hedefleri [The place of pharmacy ethics during pharmacy education and training targets]. Istanbul: Marmara University Health Science Institution. Doctoral Thesis. 2010.

12. Tekiner H. One Hundred Years of the History of Pharmacy Studies in Turkey. Pharmazie. 2015; 70:139-144.

13. Terzioğlu A. 1933'ten Önce ve Sonra Cumhuriyet Döneminde Tıp Eğitiminde Tıp Tarihi, Tıbbi Deontoloji ve Tıbbi Etik [History of Medicine, Medical Deontology and Medical Ethics in Republican Period's Medical Education Before and After 1933] (in Tıbbi Etik Yıllığı XII, Cumhuriyetimizin 80. Yıldönümü Anısına Cumhuriyet Döneminde Tıp Eğitimi ve Tıbbi Etik Simpozyumu'na Sunulan Tıbbî Etikle İlgili Bildiriler, Ed.s: Arslan Terzioğlu) Istanbul, 2003.

14. Ataç A. Gülhane Askeri Tıp Fakültesi'nde Tıp Tarihi ve Deontoloji Dersleri [Medical History and Deontology Courses in Gülhane Military Medical Faculty] (in Tıbbi Etik Yıllığı XII, Cumhuriyetimizin 80. Yıldönümü Anısına Cumhuriyet Döneminde Tıp Eğitimi ve Tıbbi Etik Simpozyumu'na Sunulan Tıbbî Etikle İlgili Bildiriler, Ed.s: Arslan Terzioğlu) Istanbul, 2003.

15. Maskar Ü. Türkiye'de Sivil Eczacı Mektebinin Açılışından Bugüne Kadar Geçirdiği Safhalara ve Son Yıllardaki İnkışafına Toplu Bir Bakış [An Overview of the Phases of the Civil Pharmacist School and Developments in Recent Years from Opening to Today in Turkey]. Istanbul: Istanbul Üniversitesi Tıp Fakültesi Mecmuası Monografi Serisi No:24, İsmail Akgün Publishing, 1957.

16. Efendizâde Abdülhak Hayrullah. Makalât-ı Tıbbiye. İstanbul: Takvimhane-i Âmire Publishing, 1843.

17. Nouridjan, J. Leçon d'Introduction du Cours de Déontologie Médicale á l'Ecole Impériale de Médecine de Constantinople, Revue de Médecine et de Pharmacie. 1877; 2(5):58.

18. Şehsuvaroğlu B. Eczacılık Tarihi Dersleri [History of Pharmacy Courses]. Istanbul: Hüsnütabiat Publishing, 1970.

19. Baytop T. Türk Eczacılık Tarihi [Turkish History of Pharmacy]. (Abbreviated 2nd Edition by: Afife Mat.). İstanbul: İstanbul University Publishing No: 3358, Eczacılık Fakültesi No: 78, 2001.

20. Dölen E. Eczacılık Tarihi Ders Notları [Lecturer's Notes of History of Pharmacy]. Istanbul: Marmara University Faculty of Pharmacy Publishing, 1995.

21. Kiran B. Eczacılık Tarihi ve Deontoloji Ders Notları [Lecturer's Notes of History of Pharmacy and Deontology]. 2014, Izmir: Ege University Faculty of Pharmacy Publishing.

22. Sandalcı M. Eskişehir Eczacılık Tarihi [Eskişehir's History of Pharmacy]. Eskişehir: Eskişehir Eczacı Odası Publishing, 2013.

23. Tekiner H. Kayseri Eczacılık Tarihi [Kayseri's History of Pharmacy]. Ankara: Türk Eczacıları Birliği Publishing, 2005.

24. Özçelikay G, Tekiner H. Türk Eczacılık Tarihi Bibliyografyası Üzerine Bir Deneme (1927-2008) [An Essay on the Turkish History of Pharmacy Bibliography (1927-2008)]. Ankara: Ankara Üniversitesi Publishing, 2009.

25. Yağtu Ş. Eczacılık Deontolojisi (Meslek Ahlakı ve Adabı) [Pharmacy Deontology (Professional Ethics and Etiquette)]. Ankara: Ogun Kardeşler Publishing, 1968.

26. Baytop T. Eczacılık Deontolojisi [Pharmacy Deontology]. Istanbul: Istanbul Uni. Eczacılık Fakültesi Publishing, 1992.

27. Sarı NA. Osmanlılarda Hekim ve Hekimlik Ahlakı [Physician and Medical Ethics in the Ottoman]. Istanbul: Istanbul Uni. Cerrahpaşa Medicine Faculty History of Medicine and Deontology Doctoral Thesis, 1977.

28. Dramur-Bütün R. 1838-1908 Yıllarında Osmanlılarda Eczacılık ve Deontoloji [Pharmacy and Deontology in Ottoman at 1838-1908]. Istanbul: Istanbul Uni. Cerrahpaşa Medicine Faculty History of Medicine and Deontology Doctoral Thesis, 1984.

29. Kiran, B. İzmir Eczacı Odası Onur Kurulu'na Yansıyan Olgularda Deontolojik İhlallerin İncelenmesi [An Investigation of Deontological Violation Cases Referred to İzmir Pharmacist Chamber Honorary Committee]. Ege University Health Science Institution Doctoral Thesis. 2012, Izmir.

30. Tekiner H. Kayseri Eczacılık Tarihi ve Eczacılık İşletmelerinin Kayseri Sosyal Yaşamı ve Ekonomisine Katkıları Üzerine Bir Çalışma [A Study on History of Pharmacy of Kayseri and Contributions of Pharmaceutical Enterprises on Social Life and Economy of Kayseri]. Ankara: Ankara University Health Science Institution Master Thesis, 2006.

31. Baytop T. **I. Türk Eczacılık Tarihi Toplantısı, 1990**, İstanbul: Mustafa Nevzat Eczacılık Tıp ve Kültür Evi Publishing,

32. Dölen E. (Editor). IV. Türk Eczacılık Tarihi Toplantısı Bildirileri (4-5 Haziran 1998; İstanbul). İstanbul: Marmara Üniversitesi Publishing No: 657, Eczacılık Fakültesi Yayın No: 15, 2000.



33. Mat A. (Editor). **Eczacılık Tarihi Arařtırmaları [History of Pharmacy Research]**. VI. Türk Eczacılık Tarihi Toplantısı (Istanbul, on 5th-7th June 2002). Istanbul: İstanbul Üniversitesi Eczacılık Fak. Yay. No. 80, 2003.

34. Kemalettin A. İlaç ve Eczacılık: Uluslararası Andlaşmalar, Kanunlar, Yönetmelikler, Genelgeler [Drugs and Pharmaceuticals: International Agreements, Laws, Regulations, Circulars]. Expanded 3rd Edition, Türk Eczacıları Deontoloji Tüzüğü [Turkish Pharmacists' Ethics Charter], Ankara Pelikan Publishing, 2009.

AUTHORS' CONTRIBUTIONS

Authors contributed equally to all aspects of the study.

PEER REVIEW

Not commissioned; externally peer reviewed.

CONFLICTS OF INTEREST

The authors declare that they have no competing interests.