

# Publication status of pharmacology specialty theses in scientific journals in Turkey

## Türkiye'de farmakoloji alanında yapılan uzmanlık tezlerinin bilimsel dergilerde yayınlanma durumları

Nadire Eser<sup>1</sup>

<sup>1</sup> Kahramanmaraş Sutcu Imam University,  
Faculty of Medicine, Department of  
Pharmacology, Kahramanmaraş, Turkey

ORCID ID of the author(s)  
NE: 0000-0003-1607-5114

Corresponding author/Sorumlu yazar:  
Nadire Eser

Address/Adres: Kahramanmaraş Sütçü İmam  
Üniversitesi, Tıp Fakültesi, Tıbbi Farmakoloji  
Anabilim Dalı, 46100, Kahramanmaraş, Türkiye  
E-mail: esernadire01@hotmail.com

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### Abstract

**Aim:** The publication of theses is the main indicator in revealing the scientific efficiency of a country. To the best of our knowledge, the publication status of pharmacology specialty theses has not been reported before. The aim of this study is to evaluate the publication status of medical pharmacology theses published by the departments of medical pharmacology of medical faculties in our country between 2006 and 2016 in scientific journals.

**Methods:** A total of 108 pharmacology residency theses published between 2006 and 2016 and registered into the system from all Medical Pharmacology departments of all medical faculties in our country, as accessed from in Higher Education Council National Thesis Center's Internet database (<https://tez.yok.gov.tr/ulusaltezmerkezi/>), were included in this observational study. These theses were analyzed and evaluated in terms of the year they were written in, the institution in which they were prepared, the academic title of the thesis advisor, research type, its publication status in scientific journals, publication features, author's gender and other features of the author of the thesis.

**Results:** As a result of the research conducted, it was found that 61 (56.5%) of the 108 pharmacology specialty theses written between 2006-2016 had been published in the scientific journals. Forty-seven (77.0%) of these publications were published in a medical journal with Science Citation Index (SCI) / Science Citation Index-Expanded (SCI-E) indexes, 9 (14.8%) in other international indexes, 3 (4.9%) in TUBITAK ULAKBİM TR index and 2 (3.3%) in national refereed journals.

**Conclusion:** The rate of publication of the residency theses written after the completion of medical pharmacology residency training and publication as articles in the journals within the scope of SCI / SCI-E was quite high.

**Keywords:** Pharmacology, Specialty Theses, Publication, Turkey

### Öz

**Amaç:** Tezlerin yayınlanması, bir ülkenin bilimsel etkinliğini ortaya çıkarmanın temel göstergesidir. Bildiğimiz kadarıyla farmakoloji uzmanlık tezlerinin yayınlanma durumu daha önce bildirilmemiştir. Bu çalışmada, ülkemizdeki tıp fakültelerinin tıbbi farmakoloji anabilim dalları tarafından 2006-2016 yılları arasında yayınlanan tıbbi farmakoloji tıpta uzmanlık tezlerinin bilimsel dergilerde yayına dönüştürülme durumunun değerlendirilmesi amaçlanmıştır.

**Yöntemler:** Gözlemsel olan bu çalışmaya Mayıs 2020 tarihinde Yüksek Öğretim Kurulu Başkanlığı Ulusal Tez Merkezi internet veri tabanında (<https://tez.yok.gov.tr/UlusalTezMerkezi/>) yer alan, ülkemizdeki tüm tıp fakültelerinin tıbbi farmakoloji anabilim dalı birimlerinden sisteme girilmiş 2006-2016 yılları arasında yayınlanmış 108 adet farmakoloji uzmanlık tezi dahil edilmiştir. Bu tezler yapıldıkları yıl, yapıldıkları kurum, tez danışmanın akademik ünvanı, tezin hangi araştırma türü olduğu, yayınlanma durumu, yayına ait özellikler, yazar cinsiyeti ve tez yazarlarına ait diğer özellikler açısından incelenip değerlendirilmiştir.

**Bulgular:** Çalışmamızda yapılan araştırmalar sonucunda 2006-2016 yılları arasında yapılmış 108 adet farmakoloji uzmanlık tezinin 61'i (%56,5) yayınlanmıştır. Bu yayınların 47'si (%77,0) Science Citation Index (SCI) / Science Citation Index-Expanded (SCI-E), 9'u (%14,8) uluslararası diğer indekslerde, 3'ü (%4,9) TUBİTAK ULAKBİM TR dizin, 2'si (%3,3) ulusal hakemli dergilerde yayınlanmıştır. **Sonuç:** Bu çalışmada, Türkiye'de tıbbi farmakoloji uzmanlık eğitimi tamamlandıktan sonra yazılan uzmanlık tezlerinin yayına dönüşme oranı ve SCI/SCI-E kapsamındaki dergilerde makale olarak yayınlanma oranı oldukça yüksek bulunmuştur.

**Anahtar kelimeler:** Farmakoloji, Uzmanlık tezi, Yayın, Türkiye

## Introduction

Pharmacology is the science that investigates the sources of drugs, their chemical and physical properties, the body's intake, their mode of action and the methods of making them available to the patient. Research in pharmacology is carried out mainly for the treatment, diagnosis, prophylaxis of diseases and other medical purposes. In parallel with this purpose, the main task of the medical pharmacology resident is to participate in the educational activities determined by the department within the framework of a certain program, and to ensure that he / she learns the basic subjects of medical pharmacology, acquires the basic knowledge and skills necessary for conducting experimental research, and conducts and evaluates practical applications s/he has learned.

In our country, those who receive medical pharmacology residency education in medical faculties are obliged to conduct a thesis study, and authoring a thesis constitutes an important part of the specialty education. By getting the students to author a thesis, it is aimed to provide residency students with many skills such as forming a hypothesis, data collection, analysis, interpretation of results and authoring articles [1]. In terms of academic advancement and making significant contributions to science, it is important to turn the theses into publications. It is a very challenging process for medical residency students to have their theses published, and in the researches conducted in many departments, it has been determined that the rates of medical residency theses being turned into publications are quite low [2-5]. According to our literature review, no studies evaluating the publishing status of medical pharmacology residency theses written in our country were found.

In this study, we aimed to evaluate and reveal the publication status of the medical pharmacology theses published by the departments of medical pharmacology of medical faculties in our country between 2006 and 2016 in scientific journals.

## Materials and methods

In this descriptive study, the screening model was used to evaluate the publication status of medical pharmacology residency theses in scientific journals. All steps of the study were carried out according to the basic principles of Helsinki declaration. The study was approved by Kahramanmaraş Sütçü İmam University Faculty of Medicine Ethics Committee of Clinical Trials (2020/10-03).

A total of 108 pharmacology residency theses published between 2006-2016 and registered into the system from all Medical Pharmacology departments of all medical faculties in our country, as accessed from in Higher Education Council National Thesis Center's Internet database (<https://tez.yok.gov.tr/ulusaltezmerkezi/>) in May 2020, were included in this study. Considering that the period for the thesis to be turned into a publication might be prolonged, specialty theses published between 2017-2020 were not included. In addition, theses with multiple entries in the subject section were examined one by one, and specialty theses that did not belong to the medical pharmacology department were excluded from the study.

Whether the thesis has been turned into a publication or not was determined by searching the author, the name and surname of the thesis advisor, and the title of the thesis in both Turkish and English over Google academic (<https://scholar.google.com/>), PubMed Central (PMC) (<https://www.ncbi.nlm.nih.gov/pmc/>), and PubMed (<https://pubmed.ncbi.nlm.nih.gov/>), and by comparing the title and summary of the thesis with the title, subject and abstract of the thesis. The publications determined to have been adapted from a thesis by considering the full text, abstract or author names and title were taken into consideration. It was revealed in which one(s) of the databases of Science Citation Index (SCI), Science Citation Index-Expanded (SCI-E), other international fields (PubMed, Medline, Scopus, Index Copernicus etc.), and TUBITAK ULAKBIM TR index the journals where the theses were published were included by examining the websites of these databases and journals. Whether the physicians who wrote the theses were working as a medical pharmacologist or in another field and the institutions that they are currently working in was determined by running Internet search. The gender of the author of the thesis, the faculty of medicine where the thesis was prepared, the institution where the author is currently working, the status of the author continuing his/her professional life in the department of medical pharmacology, the sequence of the author's name in the publication, the academic title of the thesis advisor when the thesis was registered in the system, whether the thesis was a clinical or animal experiment, the national or international directory where the thesis was published, and the period that lasted until the thesis was published were evaluated.

### Statistical analysis

The data were analyzed using SPSS 15.0 software package. Numerical data were presented as mean and standard deviation (SD), and categorical variables were given as numbers and percentages. Chi-square test was used in the analysis of categorical data. The value of  $P < 0.05$  was considered statistically significant.

## Results

A total of 108 medical pharmacology theses which were published in the National Thesis Center database between 2006 and 2016 were included in the study.

Fifty (46.3%) of the thesis authors were male and 58 (53.7%) were female. Of the thesis advisors, 74 (68.5%) were professors, 28 (25.9%) were associate professors, 6 (5.6%) were assistant professors.

It was determined that 61 (56.5%) of the specialty theses written in the field of medical pharmacology between 2006 and 2016 were published in a scientific journal, and 47 (43.5%) were not. Forty-seven (77.0%) of these publications were published in SCI / SCI-E, 9 (14.8%) in other international indexes, 3 (4.9%) in TUBITAK ULAKBIM TR index and 2 (3.3%) in national refereed journals.

The study type of 108 theses was evaluated. Prospective clinical studies were carried out in 10 (9.3%) of the theses, retrospective and survey studies in 7 (6.5%), cell culture studies in 8 (7.4%), and animal experimental studies in 83 (76.9%). Six (60.0%) prospective clinical studies, 4 (57.1%) retrospective and survey studies, 3 (37.5%) cell culture studies, 48 (57.8%) animal

experimental studies were published as shown in Table 1. Six (9.8%) of 61 published theses were prospective clinical studies, 4 (6.6%) were retrospective and survey studies, 3 (4.9%) were cell culture studies, and 48 (78.7%) were animal experimental studies ( $p < 0.001$ ).

The mean publication period of the 61 published theses was 3.20 (2.34) (0-11) years. 4 (6.6%) of the theses were published in a scientific journal in the same year of the thesis publication date, 14 (23.0%) of them 1 year later, 11 (18.0%) of them 2 years later, 10 (16.4%) of them 3 years later, 4 (3.7%) of them 4 years later, 7 (11.5%) of them 5 years later, 3 (4.9%) of them 6 years later, 6 (9.8%) of them 7 years later, 1 (1.6%) of them 8 years later, and 1 (1.8%) of them 11 years later than the thesis publication date. The mean number of authors of the publications was 4.92 (2.19) (1-11) individuals. Two (3.3%) publications had 1 author, 5 (8.2%) had 2 authors, 11 (18.0%) had 3 authors, 8 (13.1%) had 4 authors, 13 (21.3%) had 5 authors, 10 (16.4%) had 6 authors, 7 (11.5%) had 7 authors, 1 (1.6%) had 8 authors, 1 (1.6%) had 9 authors, 1 (1.6%) had 10 authors, and 2 (3.3%) had 11 authors. The owners of the theses were the first name in 52 (85.2%) of the publications, the second name in 3 (4.9%), the third in 5 (8.2%) and the seventh and last name in 1 (1.6%) of the publications. When 61 published theses in a scientific journals were examined, it was determined that 31 (50.8%) of the owners of the theses were female [23 (74.2%) of these were published in SCI / SCI-E, 4 (12.9%) in other international indexes, 2 (6.5%) in TUBITAK ULAKBIM TR index, 2 (6.5%) in national refereed journals] and the owners of 30 (49.2%) theses were male [24 (80.0%) of these were published in SCI / SCI-E, 5 (16.7%) in international indexes, 1 (3.3%) in TUBITAK ULAKBIM TR index]. There was no significant difference between the rate of publication of the theses written by females and males (Table 1;  $P=0.493$ ).

When the institutions where the 108 thesis holders are currently working were examined, it was seen that 38 (35.2%) of the 108 individuals were working as faculty members in the medical pharmacology departments of the medical faculties of different universities, 16 (14.8%) were working as faculty members in the pharmacology departments of medical faculties in the same university, 1 (0.9%) was working as a teaching assistant in the same university, 19 (17.6%) were working as faculty members in the pharmacology departments of medical faculties in different universities, 2 (1.9%) were working as faculty members in the pharmacology departments of medical faculties in foreign universities, 49 (45.4%) were working as specialist doctors in various institutions, 17 (15.7%) were working as specialist doctors in private institutions, and 3 (2.8%) as specialist doctors in different clinical branches, 1 (0.9%) was working as a faculty member in different clinical branches in foreign universities. Twenty (52.6%) of the 38 individuals working as faculty members in the medical pharmacology departments of the medical faculties of various universities were male and 18 (47.4%) were female. It was determined that the theses of 33 (86.8%) of the 38 authors working as faculty members in medical pharmacology departments of medical faculties of various universities were published in a scientific journal (21 of them were published in SCI / SCI-E, 7 of them in other international indexes, 3 of them in TUBITAK ULAKBIM

TR index, and 2 of them in national refereed journals), and that the theses of 5 (14.2%) were not published. The theses of 21 (42.9%) of 49 authors working as specialists in various hospitals were published in a scientific journal (20 in SCI / SCI-E, 1 in other international indexes) and the theses of 28 (57.1%) authors were not published. The theses of 3 (100.0%) of the 3 people working as specialists in different clinical branches were not published in a scientific journal (Table 1).

Table 1: Publication and knowledge pattern of pharmacology specialty thesis holders

	Published n (%)	Not-Published n (%)	P- value	
<b>Gender of author</b>				
Male	30 (60.0)	20 (40.0)	0.493	
Female	31 (53.4)	27 (46.6)		
<b>Current institution of author</b>				
Faculty members in the same university	13 (81.3)	3 (18.8)	<0.001	
Faculty members in different universities	18 (94.7)	1 (5.3)		
Specialist doctors in various institutions	21 (42.9)	28 (57.1)		
Specialist doctors in private institutions	7 (41.2)	10 (58.8)		
Specialist doctors in different clinical branches	0 (0.0)	3 (100)		
Teaching assistant	0 (0.0)	1 (100)		
Faculty members in different clinical branches in foreign universities	0 (0.0)	1 (100)		
Faculty members in the pharmacology departments in foreign universities	2 (100)	0 (0.0)		
<b>Study type</b>				
Cell culture studies	3 (37.5)	5 (62.5)		0.733
Animal experimental studies	48 (57.8)	35 (42.2)		
Prospective clinical studies	6 (60.0)	4 (40.0)		
Retrospective and survey studies	4 (57.1)	3 (42.9)		

## Discussion

This study is a descriptive study evaluating the publication of medical pharmacology theses published in our country in scientific journals. In our study, the rate of publication of medical pharmacology theses conducted between 2006 and 2016 in scientific journals was found to be 56.5%, and the rate of unpublished theses was determined as 43.5%.

In this study, it was aimed to evaluate the publication status of medical pharmacology theses in scientific journals and to present current results. Similar to some studies that have been carried out so far, an 11-year period was evaluated in our study [3,4]. Scherer et al. [6] reported that 5 years is required for the studies to be turned into publications. Considering this, thesis studies carried out after 2016 were not included in our study. Kalcioğlu et al. [7] stated that the time between the delivery of the publication and being published in some SCI journals can take up to 3.5 years. In a study evaluating the rate of publication of the otolaryngology (ENT) specialty theses written between 2007 and 2012 in scientific journals, the mean time for the publication of the otolaryngology (ENT) specialty theses was 3.15 years [8]. In our study, the mean time for publication was 3.20 (2.34) (0-11) years.

In our study, 61 (56.5%) of the 108 medical pharmacology specialty theses written between 2006 and 2016 were published in scientific journals. Forty-seven (77.0%) of these publications were published in SCI / SCI-E, 9 (14.8%) in other international indexes, 3 (4.9%) in TUBITAK ULAKBIM TR index and 2 (3.3%) in national refereed journals. This shows that the rates determined in our study are much higher than the rates reported from different branches in our country [3, 8]. There are many studies investigating the rate of specialty theses written in various branches being turned into publications in our country, and the rates determined in these studies range from 6.5% to 57.3% [2-5,8-11]. In a study conducted in 2019, Serinceç [12] reported that 47 (57.3%) of the 87 physiology

specialty theses were published in scientific journals, 15 of which (18.3%) were published in journals within the scope of SCI and 17 (20.7%) of which were published in SCI-E journals. In a study conducted in 2018 [9] in which the rate of publication in scientific journals of urology theses written between 2008-2011 was investigated, the rate was 49.7%, and 32.7% of these publications were published in SCI-E journals, 10.4% in international journals, 6.5% in other international index journals and 6.5% of them in national index journals. Çetinet al. [8] reported that the publication rate of ENT specialty theses was 35.6%, the rate of publication in national journals was 14.1% and the rate of publication in international journals was 21.4%. In a study, the publication rate of the theses written in the field of Emergency Medicine between 1998 and 2013 [10] was reported as 27.1%, and in a different study conducted in 2016 [3], the rate of publication of theses prepared in the field of neurosurgery between 2004 and 2013 in SCI / SCI-E indexed journals was 18.0%. As a result of the studies, investigating the publication rates of specialty theses and doctoral dissertations prepared on Medical Microbiology, Clinical Microbiology and Infectious Diseases between 1997-2007 in international journals, it was reported that 10.7% of Microbiology and Clinical Microbiology specialty theses and 10.2% of specialty theses on Infectious Diseases and Clinical Microbiology were turned into publications [4]. In a study conducted in the field of public health between 1978 and 2010 [11], 295 specialty theses were analyzed and the rate of publication in international journals was 13.6%. In their study in 2016, Üçer et al. [5] reported that the rate of publication in scientific journals of the theses written as a result of family medicine specialty training was 11.5%, and 0.8% of them were published in SCI journals, 3.1% in SCI-E journals and 7.6% in national journals. In a study conducted between 1981-2008 [13], it was shown that the publication rate of 140 Family Medicine specialty theses was 9.4%. In a study conducted between 1980-2005 [2], it was reported that the rate of 22,625 medical specialty theses being turned into publications in SCI-E indexed journals was 6.2%.

Study types of pharmacology specialty theses in the department of medical pharmacology were evaluated. Sixty-one (56.5%) of 108 theses were published. The rate of publication of animal experimental studies was higher (78.7%) than other study types (Prospective clinical studies (9.8%), retrospective and survey studies (6.6%), cell culture studies (4.9%)). In a study published in 2019 [12], the high rate of studies with animal experiments determined (73.2%) shows that the results are in parallel with our study. Çetin et al. [8] reported that the publication rate of studies with animal experiments was higher (%37.7) than other types of studies.

When the institutions where the 108 thesis owners are currently working were evaluated, 38 (35.2%) of them were working as faculty members in the pharmacology departments of medical faculties in different universities, 49 (45.4%) were working as specialist doctors in various institutions, 17 (15.7%) as specialist doctors in private institutions, 3 (2.8%) as specialist doctors in different clinical branches and 1 (0.9%) was working as a faculty member in different clinical branches in foreign universities. In a study, it was reported that the rate of faculty members in different universities was higher than the other

groups [12]. The publication rate of those who were working as faculty members in the pharmacology departments of the medical faculties of various universities was 33 (86.8%), whereas the publication rate of those who were working as specialist doctors in various institutions was 21 (42.9%). In parallel with our study, Seringeç [12] reported that the publication rate of those who were working as faculty members in the physiology departments of the medical faculties of various universities was 73.7%. Twenty-one out of 33 faculty members were published in SCI / SCI-E, 7 in other international indexes, 3 in TUBITAK ULAKBIM TR index, and 2 in national refereed journals. In accordance with our study, Yuksel et al. [9] reported that the rate of publication of theses in SCI-E journals was higher (32.7%) than the other indexed journals.

### Limitations

The main limitation of our study is that the change of the title of the thesis during the conversion to the article may have caused the misevaluation. Secondly, there may be data errors of the theses, entered into the database incorrectly. The other limitation is that the change of the female authors' surname may have caused the missing evaluation.

### Conclusions

It was determined in our study that the rate of the specialty theses written in the Medical Pharmacology department of the medical faculties in Turkey as an article and the rate of these articles to be published in SCI/SCI-E indexed journals were quite high.

### References

- Öztürk M. Uzmanlık tezleri (ne) işe yarar. Sağlık Düşüncesi ve Tıp Kültürü Derg. 2012;25:20-1.
- Özgen Ü, Eğri M, Aktaş M, Sandikkaya A, Öztürk ÖF, Can S, et al. Publication Pattern of Turkish Medical Theses: Analysis of 22.625 Medical Theses Completed in Years 1980-2005. Türkiye Klinikleri J Med Sci. 2011;31(5):1122-31.
- Öğrenci A, Eksi MS, Özcan-Eksi EE, Koban O. From idea to publication: Publication rates of theses in neurosurgery from Turkey. Neurol Neurochir Pol. 2016;50:45-7.
- Sipahi OR, Serin DC, Pullukcu H, Tasbakan M, Ulu DK, Yamazhan T, et al. Publication rates of Turkish medical specialty and doctorate theses on Medical Microbiology, Clinical Microbiology and Infectious Diseases disciplines in international journals. [Article in Turkish] Mikrobiyol Bul. 2014;48(2):341-5.
- Üçer H, Keten HS. Have dissertations made in the field of Family Medicine published as a scientific article? [Article in Turkish] KSU Tıp Fak Der. 2016;11(1):22-5.
- Scherer RW, Dickersin K, Langenberg P. Full publication of results initially presented in abstracts. A meta-analysis. JAMA. 1994;272:158-62.
- Kalcioğlu MT, İleri Y, Karaca S, Egilmez OK, Kokten N. Research on the Submission, Acceptance and Publication Times of Articles Submitted to International Otorhinolaryngology Journals. Acta Inform Med. 2015;23:379-84.
- Çetin A, Boran C, Erdağ TK. Do the otorhinolaryngology specialization thesis turn into publications? [Article in Turkish] Kulak Burun Bogaz İhtis Derg. 2017;27(4):185-93.
- Yuksel M, İpekçi T, Tuñçkıran A. Publication rates of dissertations written in medical faculties of Turkey in the field of urology between the years 2008, and 2011, and citation analysis: A cross-sectional study. Turk J Urol. 2018;44(4):341-5.
- Cevik E, Karakus Yılmaz B, Acar YA, Dokur M. Systematic analysis of thesis in the field of emergency medicine in Turkey. Turk J Emerg Med. 2015;15(1):28-32.
- Sipahi H, Durusoy R, Ergin I, Hassoy H, Davas A, Karababa AO. Publication rates of public health theses in international and national peer-review journals in Turkey. Iran J Public Health. 2012;41(9):31-5.
- Seringeç AN. Publication of physiology theses in scientific journals: Analysis of the status from Turkey. J Surg Med. 2019;3(3):235-8.
- Yaman H, Kara İH, Baltacı D, Altuğ M, Akdeniz M, Kavukçu E. Türkiye'de aile hekimliği alanında yapılan tezlerin kalitatif değerlendirilmesi. Konuralp Tıp Derg. 2011;3(3):1-6.

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