



Evaluation of Publication Rate of Forensic Medicine Specialty Theses in Turkey

Türkiye’de Adli Tıp Alanında Yapılmış Uzmanlık Tezlerinin Bilimsel Yayına Dönüştürülme Oranının Değerlendirilmesi

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Abstract: Objective: The present study aims to investigate the publication rate of Forensic Medicine specialty theses in national and international journals. **Materials and Methods:** The Council of Higher Education Thesis Centre Database was searched for medical specialty theses written between 1983-2016. Another screening was carried out using the resident and mentor names, as well as thesis title on Ulakbim, Türk Medline, Google Scholar, Web of Science, PubMed databases. The years that the theses were written and the articles were published, the database of the journal, resident’s name order, type of research, thesis subjects were recorded. **Results:** The findings showed that 77 (32.6%) out of a total of 236 theses written between 1983-2016 were published. Fifteen-point two percent of these theses were published in Science Citation Index-Expanded/Social Sciences Citation Index, 11.9% were published in international and 5.5% in national indexed journals. The mean publication time was 2.95±2.49 years. It was found that the resident was the first author in 85.7% of the articles, and 53.2% of the published theses were prospective studies. Most frequently article subjects were in the fields of Forensic Pathology (26%) and Psychiatry (23.4%). **Conclusion:** Publishing rate of the theses in Forensic Medicine was similar to the data regarding publication rates of theses in different medical specialty fields in our country and abroad; however, it is below the level desired. It is of utmost importance to find solutions to facilitate the process, including but not limited to mentors that are encouraging and instructive, foreign language support, time and funding.

Keywords: Forensic Medicine, Publication, Specialty, Theses

Öz: Amaç: Adli Tıp alanında yapılmış tıpta uzmanlık tezlerinin ulusal ve uluslararası dergilerde yayına dönüştürülme oranının incelenmesidir. **Gereç ve Yöntem:** Yüksek Öğretim Kurulu Tez Merkezi veri tabanından 1983-2016 yılları arasında yapılan uzmanlık tezleri taranmıştır. Ulaşılan tezlerin yazar ve danışman adı ile tez başlığı kullanılarak Ulakbim, Türk Medline, Google Scholar, Web of Science, Pubmed veri tabanları taranmıştır. Yayına dönüştürülmüş tezlerin yapıldığı yıl, makalenin yayınlandığı yıl, derginin veri tabanı, uzmanlık öğrencisinin yazar sıralaması, araştırma tipi, tez konuları ana başlıklar halinde kaydedilmiştir. **Bulgular:** Tarama sonucunda 1983-2016 yılları arasında ait 236 tezdən 77’sinin (%32.6) yayına dönüştürüldüğü saptanmıştır. Bu tezlerin %15.2’si Science Citation Index/Science Citation Index Expanded, %11.9’u uluslararası, %5.5’i ulusal indeksli dergilerde yayınlanmıştır. Tezin makale olarak yayınlanma süresi ortalama 2.95±2.49 yıl olarak bulunmuştur. Tezi yapan uzmanlık öğrencisinin makalelerin %85.7’sinde birinci yazar olduğu saptanmıştır. Yayına dönüştürülmüş tezlerin %53.2’sinin prospektif çalışma olduğu ve en sık Adli Patoloji (%26) ile Adli Psikiyatri (%23.4) alanlarında yapıldığı saptanmıştır. **Sonuç:** Adli Tıp alanında tezlerin yayına dönüştürülme oranı ülkemiz ve yurtdışında farklı uzmanlık alanlarında yapılmış olan çalışmaların verileri ile benzer bulunmuştur ancak olması gereken seviyenin altındadır. Tez danışmanının teşvik edici ve eğitici olması, yabancı dil desteğinin verilmesi, zaman ve maddi kaynağın sağlanması gibi süreci kolaylaştıran çözümlerin üretilmesi önem taşımaktadır.

Anahtar kelimeler: Adli Tıp, Tez, Uzmanlık, Yayın

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Ethical Declaration

The principles outlined in the Declaration of Helsinki were followed in our study, and since our paper was a review article on theses and publications, ethics committee approval was not obtained.

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1. Introduction

In our country, Turkey, thesis preparation is a requirement for the completion of a specialty in medicine. This process is intended to ensure that residents acquire the necessary skills to conduct original research and to introduce innovation to the science through sharing the acquired knowledge. However, publishing theses in the form of scientific articles is problematic both in our country and across the world (1,2). According to the studies conducted in developed, as well as developing countries, the publication rate of the theses is low, varying between 1.2 to 52.3% (3). Theses cannot be converted into scientific publications because of various reasons, such as the mentors' not being encouraging and instructing, the content of the study not being original, or due to a lack of proficiency in foreign languages, lack of time and funds (4,5).

In recent years, the number of studies on the publishing rate of theses in different medical specialties has been increasing. This retrospective study aims to investigate the publication rate of specialty theses in Forensic Medicine in national and international journals.

2. Materials and Methods

On 23 August 2018, screening was carried out on the Council of Higher Education Thesis Centre Database (<https://tez.yok.gov.tr/UlusalTezMerkezi/tarama.jsp>), selecting "Forensic Medicine Department" from among departments, "Ministry of Justice" as university and "Specialty in Medicine" from among thesis types. Masters theses and doctoral dissertations were not evaluated in this study. Considering the publication process, theses dated 2017-2018, as well as the theses that do not belong to the Forensic Medicine Department, were excluded from this study. In case of theses that were uploaded to the database in multiple numbers, only one thesis was included in this study. With using the resident and mentor names, as well as titles of the theses, were included in this study, databases of Ulakbim (Turkish Academic Network and Information Center), Türk Medline (<http://www.turkmedline.net/>), Google Scholar, Web of Science and PubMed were screened between 23-27 August 2018. A comparison was made of the abstract sections of the articles that were electronically available and abstract sections of the relevant theses to assess the publication rate. The years in which the theses were written and the articles were published, database of the journal [national, international and Science Citation Index (SCI)/Science Citation Index Expanded (SCI-E)/Social Sciences Citation Index (SSCI)], resident's order among the authors, type of

research (prospective-retrospective-animal experiment studies) were recorded. Subjects of all theses, published or not published, were categorized under main themes per area of thesis. The statistical analysis was conducted using the chi-square test and Fisher's Exact test, using SPSS 15.0 package software. *P*-value was considered significant at < 0.05 .

Ethical Declaration

The principles outlined in the Declaration of Helsinki were followed in our study, and since our paper was a review article on theses and publications, ethics committee approval was not obtained.

3. Results

The screening resulted in 270 theses that belonged to Departments of Forensic Medicine and the Ministry of Justice between 1983 and 2018. Out of a total of 236 theses dated 1983-2016, 77 (32.6%) of them were published. Fifteen-point two percent (n:36) of these theses were published in SCI/SCI-E/SSCI, 11.9% (n:28) were published in international, and 5.5% (n:13) in national indexed journals.

The mean publication time of theses as articles was 2.95 ± 2.49 (min:-1, max:10) years, which was 3.03 ± 2.52 years on average for SCI/SCI-E/SSCI journals, and 2.88 ± 2.49 years for other national/international journals ($p=0.79$).

Upon an assessment of the authorship order of articles, we found that residents were the first author in 66 publications (85.7%), second author in eight publications (10.4%), and third author in three publications (3.9%). The rate of residents appearing as the first authors was 77.8% for studies published in SCI/SCI-E/SSCI journals, and 92.7% for studies published in other journals; however, no statistically significant difference between the two was identified ($p=0.09$).

The academic status of the residents after specialization education was also evaluated, the findings showed that 50.6% of the 77 physicians who published their theses and 27% of the 159 physicians who did not publish their theses had an academic career ($p<0.05$).

Distribution rates of published theses by year of article and database of the journal in which they were published are presented in Table 1. An increase was noted in the number of articles after the year 2009 ($p<0.05$). Thirty-eight percent of articles published before 2009 and 50% of the articles published in and after 2009 were published in the SCI/SCI-E/SSCI journals, with no statistically significant difference between the two groups ($p=0.44$).

Table 1. Distribution of published theses by year of article and journal database.

Years	Articles in SCI/SCI-E/SSCI journals		Articles in international journals		Articles in national journals		Total number of the articles	
	n	%	n	%	n	%	n	%
1994-1998*	0	0	2	2.6	1	1.3	3	3.9
1999-2003	5	6.5	2	2.6	2	2.6	9	11.7
2004-2008	3	3.9	4	5.2	2	2.6	9	11.7
2009-2013	14	18.2	9	11.7	5	6.5	28	36.4
2014-2018	14	18.2	11	14.3	3	3.9	28	36.4
Total	36	46.8	28	36.4	13	16.9	77	100

*The first article that was electronically available was dated 1996.

When the theses were evaluated according to the type of study, the findings showed that 53.2% (n:41) were prospective, 28.6% (n:22) retrospective, 14.3% (n:11) animal experiment studies, and 3.9% (n:3) other (such as a review). Publishing rate of animal experiments, prospective and retrospective studies in SCI/SCI-E/SSCI journals were 72.7%, 56%, 22.7%, respectively (p=0.009).

An analysis of the distribution of the articles according to their topics revealed the most frequent area of study to be Forensic Pathology (n:20) and Forensic Psychiatry (n:18). The highest publishing rates in SCI/SCI-E/SSCI journals were found in the areas of Forensic Genetics (100%) and Forensic Toxicology (67%). Table 2 shows the subjects of the articles, as well as their publishing rate in SCI/SCI-E/SSCI journals. One hundred and fifty-nine theses that were written in 1983-2016 without being published focused on Forensic Pathology (n:33), Forensic Psychiatry (n:27), Forensic Traumatology (n:20), Forensic Radiology (n:17), Forensic Chemistry (n:16), medical malpractice studies (n:9), Forensic Genetics

(n:6), Forensic Toxicology (n:5), Forensic Biology (n:5), Forensic Anthropology (n:3), Ballistics (n:2), other (n:16), respectively.

4. Discussion

The findings obtained in this study showed that the publishing rate of theses written in Forensic Medicine was at the country average levels and similar to other countries' data. However, the current rate is still below the desired and required levels. An assessment of studies conducted in different medical specialty fields in our country revealed the publishing rate of theses in national and international/SCI-E journals was as follows: 35.6% in Otorhinolaryngology (6), 50% in Eye Diseases (7), 49.7% in Urology (8); and exclusively for the SCI/SCI-E journals: 18% in Neurosurgery (9), 10.2% in Infectious Diseases and Clinical Microbiology (1), 12.3% in Orthopedics (10). An assessment of studies carried out in other countries revealed the following rates: 35.3% in Radiology (11), 27.9% in Pediatrics in France (12), which

Table 2. Subjects of the articles and publishing rates in SCI/SCI-E/SSCI journals

Subject of the articles	Distribution of the articles		Publishing rate in the SCI/SCI-E/SSCI journals	
	n	%	n	(%)
Forensic Pathology	20	26.0	12	60.0
Forensic Psychiatry	18	23.4	6	33.3
Forensic Traumatology	8	10.3	2	25.0
Forensic Biology	7	9.0	4	57.1
Forensic Toxicology	6	7.8	4	66.6
Forensic Radiology	5	6.5	1	20.0
Forensic Genetics	4	5.2	4	100.0
Forensic Chemistry	3	3.9	1	33.3
Ballistics	3	3.9	1	33.3
Other	3	3.9	1	33.3

presents that the issues in publishing theses are not unique to our country.

Various studies are available investigating the factors that complicate the publication process of scientific researches. Major barriers and challenges identified by two surveys conducted among faculty members were listed as follows: lack of sufficient instructions on how to write an article at graduate programs, lack of proficiency in foreign languages, lack of regulations that promote publishing, lack of sufficient guidance of the thesis mentor, studies lacking in terms of their scientific levels, lack of coercive factors for publishing, journals requiring fees, lacks of funding and time, and also negative or non-original conclusions (4,5). However, “without publication research is sterile” (13) and studies that take intensive efforts should be published to contribute to the literature.

Although the time to publish an article from a thesis is variable, previous studies reported that the average being 2.8 years, it could take up to seven years (2,8,14). The results of our study indicated the mean publication time to be in line with the literature. An extension of the admission and publication process, rejection due to various reasons of the article, particularly in high-impact factor journals, may have a negative impact on the author (15). However, in our study, the findings showed that the publication time in SCI/SCI-E/SSCI journals and non-SCI/SCI-E/SSCI journals to be similar, along the lines of the Mayir et al.’s (14) study. Delays in the publishing process may also result in the publication of similar studies from different centers (2). Consequently, efforts, such as foreign language support, training on how to write scientific articles from theses and on the selection of journals, are required to facilitate publication process (1).

Studies conducted in our country and abroad reported that the rate of residents appearing as the first author varies between 54% and 84% (2,6,8,11). In general, the first author in articles obtained from theses is the resident. However, if the idea belongs to the mentor, the article has been written with analysis, and the majority of the study has been conducted by the mentor, then the resident becomes the co-author (16). Although our study does not analyze the reasons thereof, the findings showed that the rate of the first authorship of residents in SCI/SCI-E/SSCI journals to be low similarly a study carried out in the field of General Surgery (14). This may be associated with academic promotion criteria that were applicable in our country until 2016, as stated in the Sipahi et al.’s study (3). Given that studies conducted apart from the thesis were considered to be publication in line with these criteria and the idea that the first authorship would not contribute to the resident may have resulted in the mentors

reporting themselves as the first author (3). The impacts of the change of criteria in 2016 and scoring points for studies relevant to theses on the publication rate can be assessed in the upcoming process. Another possible reason could be the idea that the study can be published in a high-impact journal if the content thereof is thought to be original. Therefore, denying the resident’s right to the first authorship could be demotivational.

In recent years, the competition among authors to publish studies has been severe in the world of science (13). When analyzed the distribution of articles by years, an increase is identified in 2009 and thereafter. This increase may be due to the aspiration to be appointed to academic staff positions and the desire to increase the number of publications as a performance indicator. Sayek et al. reported that the publishing rate of theses by individual pursuing an academic career was 82.4%, while this rate among persons with no academic expectations was at 57.1% (17). Similarly, the academic career rate of physicians who published their theses was found to be higher in our study. Another possible explanation for lower publication rates before 2009 may be the articles becoming not accessible on electronic media in the past years.

Prospective studies are desirable because of various reasons, such as the student having sufficient time for thesis studies, resource materials being more abundant and accessible. A scientific study will be of higher quality and have a greater probability of being published if it is designed prospectively (6). Previous studies reported that prospective theses were published more than retrospective ones (6,8). When evaluated concerning animal experiments, on the other hand, the desire to publish and rate of admission as article are higher because such studies provide access to information using experiments that cannot be carried out on humans and are precursors of studies to be conducted on humans. As expected, our study found the publishing rate of prospective theses and animal experiment studies in SCI/SCI-E/SSCI journals to be high as well. It was observed that the most common study areas among all theses conducted between 1983 and 2016 were Forensic Pathology, Forensic Psychiatry and Forensic Traumatology, which led to the conclusion that more theses would be published in these areas. However, it is striking that theses on Forensic Anthropology and theses analyzing medical malpractices, which have become a particularly frequent agenda topic in our country in recent years, were not published. Rate of publication in the fields of Forensic Genetics and Forensic Toxicology in SCI/SCI-E journals may have been found to be high because of being up-to-date and their contribution to the literature by constantly acquiring new data.

Limitation of our study is that only six of the theses belonging to the Council of Forensic Medicine, which works under the Ministry of Justice and trains a great number of residents in Forensic Medicine besides universities, were uploaded to the Thesis Centre database and that theses written in the Council could not be analyzed. If the theses that could not have been analyzed could have been reached, a more accurate conclusion would have been reached. For this aim, all theses which are written in the Council of Forensic Medicine should be compulsorily uploaded into the thesis database of the Council of Higher Education and a substructure should be created for this. Another limitation is that theses dating back to the period when uploading to the database were not mandatory could not be accessed; thus, their publishing rate could not be assessed.

In conclusion, the publishing rate of theses in Forensic Medicine specialty is low, although found to be similar when compared to studies conducted in different specialties in our country and across the world. Publishing rate of theses in indexed journals is an important indicator of scientific achievements of individuals, academic institutions and countries; thus, necessary adjustments should be made to ensure more effective use of such a resource (7). However, the theses should not be written only for academic apprehension. In medicine, which is a profession that requires conducting lifelong research, reading continuously and following the developments, the theses should be seen as an opportunity where the merits of the medicine would be learned in the best way. Incentives should be given for theses with high scientific quality, as well as any support to ensure their publication, such as necessary time, financial support and training. Publication of the thesis may be introduced as a requirement for the completion of specialty training, as is the case in academic applications (1). Further studies investigating the reasons for and proposing solutions for unpublished theses of persons who completed their specialty training may help to increase this rate.

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