

PUBLICATION RATE OF SPECIALIZATION IN MEDICINE THESES IN MEDICAL ECOLOGY AND HYDROCLIMATOLOGY IN TURKEY: A CROSS-SECTIONAL STUDY

TÜRKİYE'DE TIBBİ EKOLOJİ VE HİDROKLİMATOLOJİ TIPTA UZMANLIK TEZLERİNİN YAYINLANMA ORANI: KESİTSEL BİR ÇALIŞMA

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ABSTRACT

Objective: To determine the conversion rate of specialization in medicine theses into full-text journal articles in medical ecology and hydroclimatology.

Material and Method: National Thesis Center was searched using "Medical Ecology and Climatology" as the subject and "Specialization in Medicine" as the thesis type. The Web of Science, TR Dizin, Dergi Park, Atif Dizini, Pubmed, Google Scholar and Google databases were searched to identify the publications produced from theses.

Results: A total of 24 theses were identified. The years of the theses ranged from 1980 to 2017. The 3 theses (20.00%) among the 15 theses between 1980 and 2002, and 4 (44.44%) theses among the 9 theses between 2009 and 2017 resulted in publication. Hence, overall, 7 (29.17%) out of 24 theses resulted in publication as a full-text article in a peer-reviewed journal. In all publications, the thesis author was the first author. Six theses were published in the journals indexed in Science Citation Index-Expanded (SCI-E). In these articles, the mean time to online publication was 3.00±1.83 years.

Conclusion: A quarter of the theses in medical ecology and hydroclimatology specialty were published in SCI-E journals; however, the rate has nearly reached to the half of the theses in the last decade.

Keywords: Thesis, academic dissertations, education, medical residency, medical ecology and hydroclimatology, balneology

ÖZET

Amaç: Tıbbi ekoloji ve hidroklimatoloji tıpta uzmanlık tezlerinin tam metin dergi makalelerine dönüşüm oranını belirlemek.

Gereç ve Yöntem: Ulusal Tez Merkezi, tez konusu "Tıbbi Ekoloji ve Klimatoloji" ve tez türü "Tıpta Uzmanlık" kullanılarak arandı. Tezlerden üretilen yayınları tespit etmek için Web of Science, TR Dizin, Dergi Park, Atif Dizini, Pubmed, Google Akademik ve Google veritabanları arandı.

Bulgular: Toplam 24 tez tespit edildi. Tezlerin yılı 1980 ile 2017 arasında değişmektedir. 1980-2002 yılları arasındaki 15 tezdən 3 tez (%20,00) ve 2009-2017 yılları arasındaki 9 tezdən 4 (%44,44) tez yayınlanmıştır. Dolayısıyla, toplamda, 24 tezin 7'si (%29,17), hakemli bir dergide tam metin makale olarak yayınlanmıştır. Tüm yayınlarda tez yazarı ilk yazardı. Altı tez Science Citation Index-Expanded (SCI-E) indeksli dergilerde yayınlanmıştır. Bu makalelerde, çevrimiçi yayına olan ortalama süre 3,00±1,83 yıldır.

Sonuç: Tıbbi ekoloji ve hidroklimatoloji uzmanlık tezlerinin dörtte biri SCI-E indeksli dergilerde yayınlanmıştır; ancak, bu oran son on yılda tezlerin neredeyse yarısına ulaşmıştır.

Anahtar Kelimeler: Tez, akademik tezler, eğitim, asistanlık, tıbbi ekoloji ve hidroklimatoloji, balneoloji

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INTRODUCTION

A thesis can be defined as a “dissertation involving personal research, written by a candidate for a university degree” (1). According to the Turkish Regulation on the Education of Specialization in Medicine and Dentistry, a student of specialization in medicine must prepare a thesis on a subject concerning relevant specialty, and must defend the thesis before the jury of 3 academician, and the thesis must be accepted by the jury in order to be able to take a specialization exam (2). Although publishing a thesis in scientific journals, and publishing or making publicly available the results of a thesis is not legally compulsory for the student or for the supervisor, as with any research, is an ethical responsibility of investigators (3). The publication of a thesis as a full-text article in a peer-reviewed journal is critical in the dissemination of thesis findings to the community and scientists by indexing and availability (4-6). In addition, it is a central step to contribute to the medical knowledge, clinical practice, and the progression of science (4-6). On the other hand, publishing a thesis in a refereed journal can be viewed as an indirect indicator of its scientific value and quality (6).

In Turkey, several studies have investigated the publication rate of specialization in medicine theses in a variety of departments including emergency medicine (7), family medicine (8), general surgery (9), gynecology and obstetrics (10), medical microbiology (11), clinical microbiology and infectious diseases (11), neurosurgery (12), ophthalmology (13), otorhinolaryngology (14), orthopedics and traumatology (15), public health (16), and urology (17). However, no study has yet examined the publication rate of theses in medical ecology and hydroclimatology specialty.

The objective of this study was to determine the conversion rate of specialization in medicine theses into full-text journal articles in medical ecology and hydroclimatology.

MATERIALS AND METHODS

This was an observational cross-sectional study. Formal ethics approval was not required since the study involved no human subjects and comprised publicly available data. However, the study was conducted in accordance with the Turkish Council of Higher Education National Thesis Center’s legislation and legal notice (<https://tez.yok.gov.tr>).

National Thesis Center search and thesis collection

The Council of Higher Education National Thesis Center provides electronic records of all postgraduate theses including specialization in medicine thesis conducted in universities affiliated to Council of Higher Education (<https://tez.yok.gov.tr>).

On August 18, 2018, Council of Higher Education National Thesis Center was searched using “Tıbbi Ekoloji ve Klimatoloji = Medical Ecology and Climatology” as the subject and “Specialization in Medicine” as the thesis type. No time period restriction was applied to the search. The theses conducted in other departments from the “Medical Ecology and Hydroclimatology” were excluded. The characteristics including the author, year, title, supervisor, and institution were obtained for each thesis.

Publication status and journal characteristics

On August 18, 2018, multidisciplinary databases (i.e. Web of Science [<https://webofknowledge.com>], TR Dizin [<http://trdizin.gov.tr>], Dergi Park [<http://dergipark.gov.tr>], Atif Dizini [<http://www.atifdizini.com>]), medical database (i.e. Pubmed [<https://www.ncbi.nlm.nih.gov>]), academic search engine (i.e. Google Scholar [<https://scholar.google.com>]) and search engine (i.e. Google [<https://www.google.com/>]) were searched by the combinations of the author, title, keywords, or supervisor to identify the publications produced from the theses. A publication was considered as a pertinent if the publication content were retrieved from the thesis. The characteristics of the journals including Journal Citation Reports 2017 impact factor (<https://webofknowledge.com>) and the indexing status for Science Citation Index-Expanded (SCI-E) (<http://mjl.clarivate.com>), Medline (<https://www.ncbi.nlm.nih.gov>), and TR Dizin (<http://trdizin.gov.tr>) were obtained.

Analysis

Descriptive statistics are presented as frequency and percentage for categorical variables and as mean and standard deviation for continuous variables. The publication rate was calculated by dividing the number of the thesis published as an article by the total number of the thesis.

RESULTS

A total of 24 theses were identified and examined. The characteristics of these theses are detailed in Supplementary Table 1. The year of theses ranged from 1980 to 2017. There were no theses between the years 2003 to 2008. There was a mean of 0.65 ± 1.00 theses submitted per year between 1980 and 2002, and a mean of 1.00 ± 1.15 theses were submitted per year between 2009 and 2017. Among the theses, the great majority ($n=22$; 91.7%) were conducted in Istanbul Faculty of Medicine and the others ($n=2$; 8.3%) were conducted in Gulhane Military Medical Academy. Regarding the supervisors, the information was not available in 7 theses, and 6 supervisors directed the remaining 17 theses, with 5 theses Müfit Zeki Karagülle was the one who directed the most theses; Nurten Usman Özer supervised 4 theses; Nergis Yüzbaşıoğlu Erdoğan supervised 3 theses; Hatice Gürdal supervised 2 theses; Mine Karagülle supervised 2 theses; and Ersin Odabaşı supervised 1 thesis.

Supplementary Table 1 The characteristics of the 24 theses.

Author	Year	Title (Turkish/ English)	Supervisor	Institution
Sinan Kardeş	2017	Osteoartritli geriatric hastalarda balneolojik tedavilerin (hidroterapi ve peloidoterapi) etkinliği/ Effectiveness of balneological treatments (hydrotherapy and peloidoteraphy) in geriatric patients with osteoarthritis	Mine Karagülle	Istanbul Faculty of Medicine
Fatih Karaarslan	2015	Bolu Fizik Tedavi ve Rehabilitasyon Hastanesi'nde yatarak kaplıca kür tedavisi alan generalize osteoartritli hastaların plazma asimetrik di-metil arjinin (ADMA) düzeylerinde ve altı dakika yürüme testindeki değişimler ve klinik ölçeklerle korelasyonu: Non-randomize kontrollü bir çalışma/ Changes in plasma asyetric di-metil arginine (ADMA) levels and six minute walking test and correlation with clinical scale in patients with generalized osteoarthritis receiving Spa cure treatment in Bolu Physical Therapy and Rehabilitation Hospital: Non-randomized controlled study	Nergis Erdoğan	Istanbul Faculty of Medicine
Serap Seringeç Karabulut	2015	Fibromiyalji hastalarında balneolojik tedavinin uyku ve klinik semptomlar üzerine etkisinin kan leptin ve ghrelin düzeylerindeki değişim ile ilişkisinin incelenmesi/ The effect of balneological treatment on sleep and clinical symptoms in fibromyalgia patients and this effect's relation with the alterations of serum ghrelin and leptin levels	Hatice Gürdal	Istanbul Faculty of Medicine
Ali Onay	2015	Diz osteoartritli hastalarda termomineral su banyosu ile birlikte elektroterapi kullanımının ve peloidoterapinin etkinliğinin karşılaştırılması/ Comparison of the use of thermo-mineral water bath with electrotherapy and mud pack therapy in patients with knee osteoarthritis	Ersin Odabaşı	GATA, Faculty of Medicine
Fatma Begüm Berköz	2012	Generalize osteoartritte kaplıca tedavisi: Fransa, aix-les-bains ulusal kaplıca tesisinde 99 kişilik açık, gözlemsel çalışma/ Spa therapy in generalized osteoarthritis: an open observational study on 99 patients in Aix-les-bains national spa center-France	Nergis Erdoğan	Istanbul Faculty of Medicine
Fulya Demircioğlu	2012	Romatoid artritli hastalarda peloidoterapi uygulamasının ağrı, eklem fonksiyonları ve yaşam kalitesi üzerindeki etkileri; randomize kontrollü bir çalışma/ Short and middle term effects of peloidotherapy on pain, function and quality of life Assessments in patients with rheumatoid arthritis; a randomized controlled study	Mine Karagülle	Istanbul Faculty of Medicine
Mehmet Fırat Satak	2012	El osteoartriti hastalarında balneolojik yöntemlerden peloidoterapi ve termomineral suya immersiyonun ağrı ve fonksiyona etkilerinin karşılaştırılması/ Comparing the effects of two balneological methods ? immersion in thermal mineral water and local mud pack therapy ? on pain and function of patients with osteoarthritis	M. Zeki Karagülle	Istanbul Faculty of Medicine
Kağan Özkuk	2010	Diz osteoartritli hastalarda aynı balneoterapötik yöntemlerin farklı süreler içinde uygulanmasının etkinliğinin karşılaştırılması/ The comparison of effectiveness of same balneotherapeutic method application within different time periods in patients with knee osteoarthritis	Hatice Gürdal	Istanbul Faculty of Medicine
Yasemin Barut	2009	Diz osteoartritte balneoterapi ve peloidoterapi kombinasyonunun etkinliği/ NA	M. Zeki Karagülle	Istanbul Faculty of Medicine
Bilal Uysal	2002	Diz osteoartritte balneoterapinin etkinliği/ NA	NA	Istanbul Faculty of Medicine
Kerem Gün	2002	Türkiye'deki ruhsatlı şişelenmiş mineral suların balneolojik değerlendirilmesi/ NA	NA	Istanbul Faculty of Medicine

N. Haluk Aksoy	2002	Kaplıca tedavisinin primer osteoartritli hastalarda plazma malondialdehit ve total antioksidan aktivite seviyeleri üzerine etkisi/ NA	NA	Istanbul Faculty of Medicine
Kayhan Oğuz Karagülle	2001	Soğuk, CO ₂ 'li önkol su banyosunun cilt kan dolaşımı ve ağrı eşiklerine etkisi/ The effects of cold, CO ₂ containing forearm water bath on skin blood flow and pain thresholds	Müfit Zeki Karagülle	Istanbul Faculty of Medicine
Mine Karagülle	1999	Romatoid artrit, diz osteoarriti ve fibromiyaljili hastalarda hava duyarlılığı ve ağrı ilişkisi/ NA	NA	Istanbul Faculty of Medicine
Selahattin Sürgit	1998	Akratotermal su ile yapılan iki farklı kompleks balneoterapi uygulamasının hematolojik parametreler üzerine etkilerinin karşılaştırılması/ NA	NA	Istanbul Faculty of Medicine
Ayşe Eşref	1997	Akratotermal su ile banyo ve sodyum bikarbonatlı su ile içme kuru şeklinde bir balneoterapötik uygulamanın glukoz toleransı bozuk (IGT) ve tip 2 diyabetik hastalarda glukoz regülasyonu üzerine etkisi/ The Effect of balneotherapeutic application as bath with achrothermal water and sodium bicarbonate water drinking cure on glucose regulation on impaired glucose tolerance (IGT) and type 2 diabetic patients	M. Zeki Karagülle	Istanbul Faculty of Medicine
M. Kerem Öztürk	1997	İstanbul'da migrenli bir grup hastanın atakları ile mevsimler, meteorolojik koşullar, yersel ve yerötesi faktörlerin ilişkileri/ Relationship between seasons, meteorological conditions, terrestrial factors and migraine attacks recorded by a group of patients in Istanbul	Nurten Özer	Istanbul Faculty of Medicine
Hüsniye Alzafer (Balkan)	1997	Sivas Kangal Balıklı Kaplıca'nın geleneksel kullanımı ve balneolojik açıdan değerlendirilmesi/ Traditional use of Sivas-Kangal Balıklı Kaplıca (Spa) and its balneological evaluation	Nergis Yüzbaşıoğlu	Istanbul Faculty of Medicine
Ersin Odabaşı	1997	Afyon Sandıklı Kaplıcası'nda iki farklı geleneksel kür uygulamasının gonartrozda etkinliğinin karşılaştırılması / Effectivity of two different traditional cure on gonartrosis in Afyon Sandıklı Spa Center	Zeki Karagülle	GATA, Haydarpaşa Education Hospital
Arif Dönmez	1990	Romatoid artritli hastalarda lokal soğuk uyarana termoregülatuar yanıtın değerlendirilmesi/ NA	NA	Istanbul Faculty of Medicine
Ahmet Karaçallık	1986	İstanbul'daki peptik ülser kanamaları (hematemez-melena) ile meteorolojik elemanlar ve atmosferik olaylar arasındaki ilişkiler/ NA	NA	Istanbul Faculty of Medicine
Nergis Yüzbaşıoğlu	1985	İstanbulda adveksiyon ve basınç sistemleri ile akut serebrovasküler hastalıklar arasındaki ilişkiler/ NA	Nurten Özer	Istanbul Faculty of Medicine
Zeki Karagülle	1983	Akciğer tüberkülozunda hemoptizi oluşması ile meteorolojik elemanlar ve atmosferik olaylar arasındaki bağıntılar/ NA	Nurten Özer	Istanbul Faculty of Medicine
Gülşen Demirci	1980	Termomineral kürün (Bursa Asker Hastanesi) üropepsin atımı üzerine etkisi/ NA	Nurten Usman Özer	Istanbul Faculty of Medicine

NA not available, GATA Gulhane Military Medical Academy

The publication status of the theses and journal characteristics are detailed in Supplementary Table 2. Three theses (20.00%) among the 15 theses between 1980 and 2002, and 4 (44.44%) theses among the 9 theses between 2009 and 2017 resulted in publication. Hence, overall, 7 (29.17%) out of 24 theses resulted in publication as a full-text article in a peer-reviewed journal. Because two articles were derived from one of these 7 theses, a total of 8 publications were identified (18-25). Six of them (18, 20, 22-25) were written in English, and one thesis each was written in German (19) and Turkish (21). In all publications,

the thesis author was the first author. The articles were published in 6 different journals, the most popular of which were the International Journal of Biometeorology and Physikalische Medizin Rehabilitationsmedizin Kurortmedizin, with 2 articles for each. Six articles (18, 19, 22-25) were published in the journals indexed in SCI-E and 4 articles (22-25) were published in the journals indexed in the Medline. The mean time to online publication was 3.00 ± 1.83 years and the mean impact factor of publishing journals was 1.43 ± 0.91, in the articles published in SCI-E journals.

Supplementary Table 2 The publication status of the theses and journal characteristics.

Thesis author/ year	Journal article title/ Journal/ Online first year	Journal indexing [†]	Impact Factor [‡]
Sinan Kardeş/ 2017	Outpatient balneological treatment of osteoarthritis in older persons : A retrospective study/ Zeitschrift für Gerontologie und Geriatrie/ 2018 (25)	SCI-E, Medline	1.160
Fatih Karaarslan/ 2015	How does spa treatment affect cardiovascular function and vascular endothelium in patients with generalized osteoarthritis? A pilot study through plasma asymmetric di-methyl arginine (ADMA) and L-arginine/ ADMA ratio/ International Journal of Biometeorology/ 2017 (24)	SCI-E, Medline	2.577
Serap Seringeç Karabulut/ 2015	-		
Ali Onay/ 2015	-		
Fatma Begüm Berköz/ 2012	Spa therapy for generalized osteoarthritis: an open, observational, preliminary study/ Thérapie/ 2014 (23)	SCI-E, Medline	1.524
Fulya Demircioğlu/ 2012	-		
Mehmet Fırat Satak/ 2012	-		
Kağan Özkük/ 2010	Balneological outpatient treatment for patients with knee osteoarthritis; an effective non-drug therapy option in daily routine?/ International Journal of Biometeorology/ 2016 (22)	SCI-E, Medline	2.577
	An Alternative Approach To The Duration Of Balneological Treatment Of Knee Osteoarthritis Patients/ Aegean Journal of Medical Sciences/ 2018 (21)	-	-
Yasemin Barut/ 2009	-		
Bilal Uysal/ 2002	Effectiveness of balneotherapy in knee osteoarthritis/ Experimental Biomedical Research/ 2018 (20)	-	-
Kerem Gün/ 2002	-		
N. Haluk Aksoy/ 2002	-		
Kayhan Oğuz Karagülle/ 2001	The Acute Effects of Cold, CO ₂ Containing Forearm Water Bath on Skin Microcirculation and Pain Thresholds/ Physikalische Medizin Rehabilitationsmedizin Kurortmedizin/ 2003 (19)	SCI-E	0.358
Mine Karagülle/ 1999	-		
Selahattin Sürgit/ 1998	-		
Ayşe Eşref/ 1997	-		
M. Kerem Öztürk/ 1997	-		
Hüsniye Alzafer (Balkan)/ 1997	-		
Ersin Odabaşı/ 1997	Comparison of two traditional spa therapy regimens in patients with knee osteoarthritis/ Physikalische Medizin Rehabilitationsmedizin Kurortmedizin/ 2002 (18)	SCI-E	0.358
Arif Dönmez/ 1990	-		
Ahmet Karaçalılık/ 1986	-		
Nergis Yüzbaşıoğlu/ 1985	-		
Zeki Karagülle/ 1983	-		
Gülşen Demirci/ 1980	-		

[†]Indexing status for Science Citation Index-Expanded (SCI-E), Medline and TR Dizin. [‡]Journal Citation Reports 2017 impact factor.

DISCUSSION

This study was the first of its kind at determining the conversion rate of specialization in medicine theses into full-text journal articles in medical ecology and hydroclimatology. The number of theses increased after 2009 compared to the past. In addition, a quarter of the theses were published in SCI-E journals; however, the rate has nearly reached to half of the theses in the last decade. In these publications, the mean time to online publication was 3 years. Furthermore, the thesis author was the first author in all publications.

No medical ecology and hydroclimatology vacancy was opened in Medical Specialty Exam (TUS) during six years, which explains the absence of thesis record between the years 2003 to 2008. Then, however, the number of theses increased over time. Similarly, the previous studies observed the increase of the number of theses by time in the field of emergency medicine (7) and otorhinolaryngology (14) as a reflection of the increasing vacancies in medical specialty exam.

Theses were found to be conducted in Istanbul Faculty of Medicine and Gulhane Military Medical Academy. This can be expected, as only these two institutions were the educational institutions for the medical ecology and hydroclimatology specialty in the evaluated time frame.

During the past decades, several studies investigated the publication rate of specialization in medicine theses in SCI-E journals in a variety of departments (7-17). In emergency medicine 14.9% of the theses between 1998 and 2013 (7); 22% of the theses in general surgery between 2006-2008 (9); 19.9% of the theses in gynecology and obstetrics between 2007-2008 (10); 10.7% of the theses in medical microbiology between 1997 and 2007 (11); 10.2% of the theses in clinical microbiology and infectious diseases between 1997 and 2007 (11); 18% of the theses in neurosurgery between 2004 and 2013 (12); 20.4% of the theses in ophthalmology between 1986 and 2010 (13); 12.5% of the theses in orthopedics and traumatology between 1974 and 2014 (15); and 32.7% of the theses in urology between 2008-2011 (17) were published in SCI/SCI-E journals. It was found in the present study that 25.0% of the theses between 1980 and 2017 were published in SCI-E journals. However, the direct comparison of this study with earlier studies is limited by differences in study designs, article search methods, and evaluated time frame.

This study has some limitations. First, National Thesis Center provides only theses conducted in the universities. Therefore, the theses that were conducted in education and training hospitals could not be included; however, this is unlikely to influence the study results, as there was no specialty in medical ecology and hydroclimatology in any of the education and training hospital in Tur-

key. Additionally, the theses that were not either archived or correctly recorded in the National Thesis Center may have been missed. Second, although the study searched 7 databases, the articles that were not published in journals indexed in these databases might be missed. Hence, the study might underrate the publication rate of theses. Despite these limitations, the insights generated from this study provide important information on the conversion rate of medical ecology and hydroclimatology specialty theses into full-text journal articles.

In conclusion, a quarter of medical ecology and hydroclimatology specialty theses were published in SCI-E journals; however, the rate has nearly reached to half of the theses in the last decade. Further studies are needed to determine the barriers to the conversion of theses into full-text articles.

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