



**PUBLICATION OF HISTOLOGY AND EMBRYOLOGY DISSERTATIONS IN
SCIENTIFIC JOURNALS**

Ashl Yaylı MD*

Department of Histology and Embryology and IVF Center, Kahramanmaraş Sütçü İmam University, School of Medicine, Kahramanmaraş, Turkey.

Corresponding Author: Dr. Ashl Yaylı MD

Department of Histology and Embryology and IVF Center, Kahramanmaraş Sütçü İmam University, School of Medicine, Kahramanmaraş, Turkey.

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ABSTRACT

Aim: Producing scientific articles from specialty theses is one of the main indicators of the scientific efficiency of the country. To the best of our knowledge the publication status of histology and embryology specialization theses has not been previously reported. The aim of this study was to evaluate the publication rate of articles in scientific journals produced from the dissertations of specialist physicians who completed their education in Histology and Embryology Departments of Medical Faculties in Turkey. **Methods:** The study included 124 Histology and Embryology dissertations which were published between 1991-2015 from Histology and Embryology departments of all medical faculties in Turkey. These articles were identified in May 2020 from the database of the National Thesis Center of the Council of Higher Education (<https://tez.yok.gov.tr/UlusalTezMerkezi/>). These dissertations were examined in terms of the following criteria: the year in which they were written, the institution in which the authors were working, the level at which the authors were working in the same department, the number of pages, whether a clinical or experimental study, author gender, the academic title of the thesis advisor, the publication status, publication features and other features of the thesis authors. **Results:** Of the total 124 Histology and Embryology dissertations written between 1991-2015, 65 (52.4%) were published. Of these 65 studies, 4 were published in SCI (3.2%), 43 in SCI-E (34.7%), 6 in other international indexes, 10 in Ulakbim TR index (8.1%) and 2 in national peer-reviewed journals (1.69%). The thesis writers comprised 46 (56.1%) females and 36 (43.9%) males. The authors of the 65 published theses comprised 42 (64.6%) females and 23 (35.4%) males. The rate of publication of theses written by females was higher than that of males ($p=0.018$). **Conclusion:** The rate of publication of dissertations written at the end of Histology and Embryology specialty education was seen to be higher than that of most other medical specialties, and the majority of these published theses had been written by females.

KEYWORDS: Histology and Embryology; Dissertation; Thesis.

INTRODUCTION

Histology is a discipline which examines the details of normal tissues. Embryology examines the development of the embryo from the fertilized egg cell, its change in the womb and reveals all these stages together with developmental anomalies. Histology and embryology is a multidisciplinary field, which collaborates with many clinical branches and the specialist training period for this field in Turkey is 3 years according to the Medical Specialization Regulation.^[1] During this period, the specialty student participates in the educational activities predetermined by the department. The aim of this education process is to enable the student to learn the basic subjects of Histology and Embryology, to gain the basic knowledge and skills required to conduct experimental research, and to apply and evaluate student practical applications. It is also intended to train specialist physicians who will undertake important roles and responsibilities in the Andrology and Assisted

Reproductive Techniques (AART) laboratories, cord blood and cellular treatment laboratories, bone marrow transplantation units and tissue typing laboratories, regenerative medicine practices and microscopy services, which have supported diagnosis in the clinic for the last 15-20 years.

The writing of a dissertation is a mandatory stage at the end of the specialty education. The medical faculties in Turkey aim to provide students with the skills to prepare a thesis, design a study, collect the study data, analyse the data, interpret the results and produce a scientific text to create and prove a hypothesis. The publication of the thesis provides important contributions to personal academic progress and to the scientific field. Publication of theses is often a difficult process and publication rates of dissertations in medicine have been found to be low compared to the number of studies conducted.^[2,3] To the best of our knowledge, there has been no previous study

in literature that has evaluated the publication status of dissertations on Histology and Embryology. Therefore, the aim of this study was to evaluate the publication rate of articles in scientific journals produced from dissertations of specialist physicians who completed their education in Histology and Embryology Departments of Medical Faculties in Turkey between 1991-2015.

MATERIALS AND METHODS

Approval for the study was granted by the Clinical Research Ethics Committee of Kahramanmaraş Sütçü İmam University (decision no: 11, session: 2020/10). The study was conducted in accordance with the principles of Helsinki Declaration. In this observational, analytical, retrospective study, a scanning model was used. A total of 155 Histology and Embryology dissertations were identified for the period 1991 – 2020, when the criterion of specialty in medicine was selected in the National Thesis Center database. A total of 31 dissertations published between 2016-2020 were excluded from the study, considering the publication period of the theses. A total of 124 Histology and Embryology dissertations published between 1991-2015 were included in the study. All the dissertations were found on the database of the National Thesis Center of the Council of Higher Education (<https://tez.yok.gov.tr/UlusalTezMerkezi/>) in May 2020. The dissertations published on the database of the National Thesis Center of the Council of Higher Education between 2016-2020 were not included in the study taking the publication time into consideration.^[4] Whether there was any publication from the theses or not was investigated in Google Scholar (<https://scholar.google.com.tr/>) and PubMed Central (PMC) (<https://www.ncbi.nlm.nih.gov/pubmed>) databases. The determination of any publication from the thesis was made by comparing the name and surname of the thesis writer and advisor, the title, subject and summary of the thesis both in English and Turkish in these databases. The articles, which were published on the database of the National Thesis Center of the Council of Higher Education (<https://tez.yok.gov.tr/UlusalTezMerkezi/>) as full text or abstract text from the thesis, were taken into consideration. Databases of the journals in which these articles were published were identified by examining the websites of these databases and journals (Science Citation Index (SCI), Science Citation Index-Expanded (SCI-E), Emerging Sources Citation Index (ESCI) other international fields (PubMed, Medline, Scopus, Index Copernicus etc.). An Internet search was made to determine whether the authors of the theses were working as Histology and Embryology specialists or in another field and the institutions where they were currently working. The following criteria were evaluated: the author gender, whether the thesis was a clinical or experimental study, the academic title of the thesis advisor at the time the thesis was registered in the system, number of pages of the thesis, the medical faculty where the thesis was written, the institution

where the author was currently working, whether the author had continued with a career in a Histology and Embryology Department, order of thesis author names, the national or international index where the article was published and the time taken for the article to be published.

STATISTICAL ANALYSIS

Data obtained in the study were analysed statistically using IBM SPSS for Windows vn. 22.0 software (IBM Corporation, Armonk, NY, USA). Results were stated as mean±standard deviation (SD) values. In the variance analysis for repeated measures, the Repeated Measures ANOVA with Bonferroni correction test was applied. In the comparison of paired groups, the Tukey HSD was used. A value of $p < 0.05$ was accepted as statistically significant.

RESULTS

A total of 155 Histology and Embryology dissertations were identified, starting from 1991 and were published up until 2020, when the criterion of specialty in medicine was selected in the National Thesis Center database. A total of 31 dissertations recorded in the database of the National Thesis Center of the Council of Higher Education between 2016-2020 were excluded from the study, considering the publication period of the theses. A total of 124 Histology and Embryology dissertations published between 1991-2015 were included in the study. The dissertations consisted of an average of 111.61 ± 80.76 (35-566) pages. The thesis authors comprised 46 males (37.1%) and 78 females (62.9%). There was no difference in the gender distribution of the thesis authors by year ($p = 0.359$). The academic degree of the dissertation advisors are shown in Table 1. It was determined that 65 (52.4%) of 124 dissertations in Histology and Embryology departments were published in a scientific journal and 59 of them (47.6%) were not published. Of these 65 studies, 4 (3.2%) were published in an SCI journal, 43 (34.7%) in SCI-E, 6 in other international indexes, 10 (8.1%) in Ulakbim TR index, and 2 (1.69%) in national peer-reviewed journals. The publication status of the theses and the indexes of the journals in which they were published are presented in Table 2 and Figure 1.

Of all the dissertations, 85 (68.5%) were experimental animal studies, 27 (21.8%) were clinical studies, 7 (5.6%) were cell culture studies and 5 (4%) were stem cell studies. It was determined that 47 (55.3%) of the animal testing studies, 11 (40.7%) of the clinical studies, 5 (71.4%) of the cell culture studies and 2 (40%) of the stem cell studies were published. The types of studies in the published dissertations are given in Table 3. The average time to publication of the dissertations was found to be 3.80 (min 1-max 12) years. The times to publication of the dissertations as a manuscript in a scientific journal are shown in Table 4. The number of authors of the publications produced from the dissertations are shown in Table 5. The average number

of authors of the publications was 4.57 ± 1.75 (2-9). While the thesis author was the first name in 55 (84.6%) of the publications, it was the second in 5 (7.7%), and the third in 2 (3.1%). In 2 published articles, the thesis author was not named. Of all the writers of the published dissertations, 42 (64.6%) were female and 23 (35.4%) were male. The rate of publication of the theses of female authors was higher than that of male authors ($p=0.018$). When the distribution of theses according to the years in which they were written was evaluated, it was found that no other thesis was published for 4 years after the publication of the first dissertation. In respect of subsequent years, the highest number of dissertation theses on histology and embryology was 14 (11.3%) in 2013, 12 (9.7%) in 2009, 11 (8.9%) in 2010, and 10 (8.1%) in 2007, 2011 and 2012. There was no statistically significant difference in terms of the publication status of theses and the journals in which they were published according to the years ($p=0.768$, $p=0.203$, respectively).

When the distribution of theses according to the university in which they were written was evaluated, the following results were obtained: Ankara University (AU) (12 theses, 9.7%), Marmara University (MaU) (9 theses, 7.3%), Gazi University (GU) (7 theses, 5.6%), and Mersin University (MeU) (6 theses, 4.8%). There was no statistically significant difference in terms of the publication status of theses and the journals in which they were published according to the universities ($p=0.480$, 0.155 , respectively). When the institutions that the thesis authors were currently working in were examined, it was found that 13 (10.5%) were not working, 67 (54%) were faculty members of the Medical Faculty of various universities, 39 (31.5%) were working as specialist doctors in public hospitals and 5 (4%) were working in private institutions. Of the 67 working as faculty members in Histology and Embryology departments of medical faculties, 46 (68.7%) were female and 21 (31.3%) were male. Of the articles written by the 67 faculty members in Histology and Embryology departments of medical faculties, 45 were published in a scientific journal (33 in SCI-E, 2 in SCI, 4 in other international indexes, 5 in Ulakbim TR index, 1 in national indexes) and 22 (32.8%) were not published. Of the articles written by the 39 people specialist doctors in public hospitals, 12 were published in a scientific journal (8 in SCI-E, 2 in SCI, 1 in in other international indexes and 1 in Ulakbim TR) and 27 (69.3%) were not published.

Tables and figures:

Table 1: Academic degree of the dissertation advisors.

| | n | % |
|---------------------|----|-------|
| Professor | 77 | 62.1* |
| Associate professor | 38 | 30.6 |
| Assistant professor | 9 | 7.3 |

*Significantly higher than others ($p<0.001$)

Table 2: Publication status of dissertations and the indexes of the journals in which they were published.

| | n | % |
|--|-----|------|
| Total Number of Dissertations | 124 | 100 |
| <i>Published Dissertations</i> | 65 | 52.4 |
| <i>Non-Published Dissertations</i> | 59 | 47.6 |
| Indexes of the Journals in which Dissertations were Published | | |
| SCI | 4 | 3.2 |
| SCI-E | 43 | 34.7 |
| Other International Indexes | 6 | 4.8 |
| Ulakbim | 10 | 8.1 |
| National Peer-reviewed Journals | 2 | 1.6 |

Table 3: Types of studies in published dissertations.

| | n | % |
|-----------------------------|----|-------|
| Experimental animal studies | 47 | 72.3* |
| Clinical studies | 11 | 16.9 |
| Cell culture studies | 5 | 7.7 |
| Stem cell studies | 2 | 3.1 |

*Significantly higher than others ($p<0.001$)

Table 4: The time to publication of dissertations as a manuscript in a scientific journal.

| | n | % |
|--------------------------|----|------|
| In one year | 9 | 13.8 |
| In two years | 13 | 20 |
| In three years | 17 | 26.2 |
| In four years | 10 | 15.3 |
| In five years | 5 | 7.7 |
| In six years | 3 | 4.6 |
| In more than seven years | 8 | 12.3 |

Table 5: Number of authors of the publications produced from the dissertations.

| | n | % |
|---------------|----|------|
| Two authors | 9 | 13.8 |
| Three authors | 10 | 15.3 |
| Four authors | 17 | 26.1 |
| Five authors | 14 | 21.5 |
| Six authors | 9 | 13.8 |
| Seven authors | 5 | 7.6 |
| Nine authors | 1 | 4.3 |

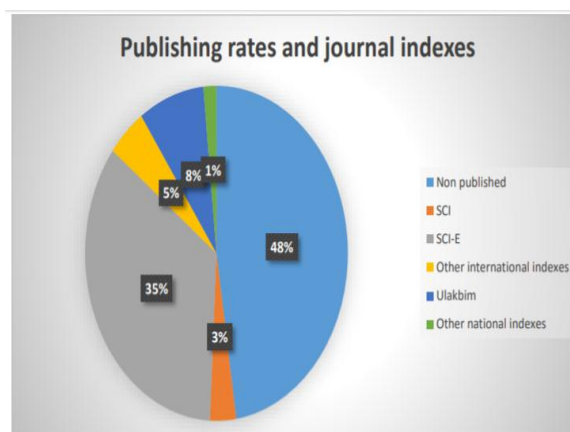


Figure 1: Publishing rates and journal indexes.

DISCUSSION

Converting a study to a scientific publication is one of the most important elements showing academic success and evaluation.^[5] To the best of our knowledge, no previous study in the literature has evaluated the publication status of Histology and Embryology dissertations in scientific journals. In this study, the publication rate of all Histology and Embryology dissertations written between 1991-2014 and installed in the thesis scanning system of the Higher Education Institution was found to be 52.4%. It was seen that these were mostly published in SCI and SCI-E indexed journals. There is a limited number of studies in the literature regarding the publication status of dissertations, and different publication rates in different study areas have been reported. In a recent study in which the publication rates of dissertations in the field of physiology were evaluated, 39% of the articles produced from Physiology dissertations were seen to have been published in SCI and SCI-E indexed journals.^[6] A similar rate was determined for the Histology and Embryology dissertations examined in this study (SCI 3.2%, SCI-E 34.7%, total 39.9%). In a study by Yüksel et al., in which the publication rate of Urology dissertations written between 2008-2011 in scientific journals was evaluated, it was determined to be 49.7% and of all those articles, 32.7% were published in SCI-E, 10.4% in international, 6.5% in other international and 6.5% in national indexed journals.^[7] Çetin et al. evaluated the publication rate of Ear Nose and Throat (ENT) dissertations written between 2007-2012, and reported a 35.6% publication rate of ENT dissertations in scientific journals. Of those articles, 14.1% were published in national journals, 27.1% (157/579) in international journals, 14.9% in SCI/SCI-E indexed journals and 12.2% (71/579) in journals not indexed in SCI/SCI-E.^[8] Çevik et al.^[9] reported a 27.1% publication rate of dissertations written between 1998-2013 in the area of Emergency Medicine. In the field of neurosurgery, Öğrenci et al.^[10] stated that the publication rate of dissertations written between 2004-2013 was 18.0% in SCI/SCI-E indexed journals. The total publication rates of dissertations in the areas of Public Health, Family Practice and Microbiology and Clinical Microbiology have been reported to be 29.9%^[11], 11.5%^[12] and 10.7%^[13], respectively. It was observed that these rates were significantly lower than for the areas of Physiology and Histology and Embryology. When the publication status of dissertations written between 1980-2005 in Turkey regardless of the field of study was evaluated and analyzed according to the years, it was seen that while the publication rate of dissertations in SCI and SCI-E indexes was 13.04% at most, this ratio was found to be 6.2% overall.^[3] It is noteworthy that these rates were significantly low compared to the rates for Physiology, Histology and Embryology dissertations. The main reason for this difference could be that Physiology, Histology and Embryology specialists are more likely to continue their professional life as faculty members at universities after specialism, and therefore

make a greater effort and give priority to scientific publications. The main goal of the current study was to evaluate the process of Histology and Embryology Specialism in Medicine from the beginning to the present day and to reveal publication status of the dissertations. In a meta-analysis by Scherer et al.^[4], it was reported that 5 years were required for a study to be published. Therefore, 31 Histology and Embryology dissertations published between 2015-2020 were excluded from this study. Çetin et al. found the average publication time for ENT dissertations to be 3.15 years in a study in which they evaluated the publication rate of ENT dissertations written in 2007-2012 in scientific journals.^[8] Similarly, in the current study, the average time for a dissertation to be published was found to be 3.80 ± 2.53 (1-12) years. Whether the gender of the thesis writer affects the publication rate of the thesis has not been investigated in previous studies. In the current study, of all the individuals who wrote dissertations on Histology and Embryology, 37.1% were male and 62.9% were female. Of the 65 published thesis authors, 42 (64.6%) were female and 23 (35.4%) were male. The rate of publication of theses written by females was higher than that of males. Irrespective of the fact that more women work in the field of Histology and Embryology, it was remarkable that the publication rate for female authors was found to be higher than that of males. This could be attributed to more females than males preferring to work in academic environments such as universities after specialization. In the current study, it was determined that dissertations in the field of Histology and Embryology mostly originated from well-established universities in the major cities of Turkey. The reason for this can be considered to be that these institutions have been providing expertise in this field for a long time and have more faculty members in these fields. However, there was not a sufficient number of different institutions or a sufficient number of dissertations from these institutions to analyse which university or institution had higher publication rates. When the order of names on the publications was investigated, it was found that of all the articles in the area of Physiology, the thesis writer was the first name on 85.1%, and the second name on 12.8%.^[6] Of the articles in the area of Public Health, the thesis writer was the first name on 85.5% of articles published in national journals and the first name on 70% of the articles published in international journals.^[11] In the current study, while the thesis author was the first name on 84.6% of the publications and the second name on 7.7%, on two published articles the thesis author was not named.

There were some limitations to this study, primarily that in the past there may have been journals that were print only, with no website, and articles published in that way were not evaluated in this study. Another limitation of the study was that the publication rate of theses was not investigated according to whether the educational institution where the thesis was written was a university or a teaching hospital. However, such an analysis was

not possible as Histology and Embryology is still a field of education only found in the medical faculties of universities. In addition to postgraduate medical education in the field of Histology and Embryology, there are also academicians who have graduated from university departments not in the medical faculty and have written a thesis after having completed master's and doctorate education. The exclusion of these doctoral theses from the study can be considered a limitation of the study.

Another limitation could be said to be that the citations that articles received after publication were not evaluated, which is a different measure of scientific quality. Nevertheless, the findings of this study can be considered of value as this is the first study to have examined both the publication status of dissertations on Histology and Embryology and to have analyzed all the dissertations in this field in Turkey.

CONCLUSION

In conclusion, the results of this study demonstrated that the publication rate of dissertations written at the end of Histology and Embryology specialty training was higher than in other fields. The field of Histology and Embryology is more likely to produce scientific publications in higher quality journals than other fields.

REFERENCES

1. www.ttb.org.tr/images/stories/haberler/file/4_kasim_uzmanlik_doktora_udek_uyek.pdf.
2. Torun P. Bir uzmanlık tezinin yayına uygunluk açısından değerlendirilmesi: Türkiye'de ve İngiltere'de hekimlerin iş doyumu karşılaştırması. *K Int J Health Sci.*, 2018; 1: 14-22.
3. Özgen Ü, Eğri M, Aktaş M, Sandıkkaya 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: 1122-31. doi:10.5336/medsci.2010-20737
4. Scherer RW, Meerpohl JJ, Pfeifer N, Schmucker C, Schwarzer G, Von Elm E. Full publication of results initially presented in abstracts. *Cochrane Database Syst Rev.*, 2018; 2018: MR000005. <https://doi.org/10.1002/14651858.MR000005.pub4>
5. Kayhan Z. Biyomedikal Yayın Yapmanın Güçlükleri. *Anestezi Dergisi*, 2007; 15: 141-8.
6. Akkeçeci NS. Publication of physiology theses in scientific journals: Analysis of the status from Turkey. *J Surg Med.*, 2019; 3: 235-38. DOI: 10.28982/josam.536365
7. Yüksel M, İpekçi T, Tunçkiran 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: 341-5. doi: 10.5152/tud.2017.32042
8. Çetin A, Boran C, Erdağ TK. Do the otorhinolaryngology specialization thesis turn into publications? [Article in Turkish] *Kulak Burun Bogaz İhtis Derg.*, 2017; 27: 185-93. doi: 10.5606/kbbihtisas.2017.71429
9. 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: 28-32. <https://doi.org/10.5505/1304.7361.2014.37074>
10. Öğrenci A, Eksi MS, Ozcan-Eksi EE, Koban O. From idea to publication: Publication rates of theses in neurosurgery from Turkey. *Neurol Neurochir Pol.*, 2016; 50: 45-7. <https://doi.org/10.1016/j.pjnns.2015.11.007>
11. 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: 31-5.
12. 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: 22-5.
13. 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. *Mikrobiyol Bul.*, 2014; 48: 341-5. doi:10.5578/mb.7003