Publication Pattern of Turkish Medical Theses: Analysis of 22.625 Medical Theses Completed in Years 1980-2005

Türk Tıp Tezlerinin Yayınlanma Durumu: 1980-2005 Yılları Arasında Tamamlanan 22.625 Tıp Tezinin Analizi

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ABSTRACT Objective: The objective of this study was to determine the conversion rates of Turkish residency theses to scientific articles. **Material and Methods**: 22.625 residency theses written at 28 university hospitals, nine state hospitals and two military hospitals' residency programmes and recorded at the web of National Thesis Center were searched through Web of Science in order to evaluate their publication pattern in SCI-expanded journals in 1980-2005. **Results:** The number of published thesis at SCI expanded journals was found to be 1397 (6.2%) with the median number of citations received per paper ranging from 0.3 to 5.0. Publication percentage was highest for theses written at military hospitals and lowest for those written at state hospitals. **Conclusion:** Percentage of published thesis in Turkey is lower when compared to the remaining European Countries. Therefore, we need alternative practices to use our manpower, time and financial resources more effectively. The first alternative is to put an end to the obligation to write thesis in order to complete residency training in some types of hospitals or to convert this obligation to an option. Another alternative is to establish a National Thesis Advisory Center and make it essential to get approval from this center in order to conduct a thesis project.

Key Words: Academic dissertations; education, medical; publications; education, medical, graduate

ÖZET Amaç: Bu çalışma Türkiye'de yapılan tıpta uzmanlık tezlerinin bilimsel makalelere dönüşme oranlarını belirlemeyi amaçlamaktadır. **Gereç ve Yöntemler:** Ulusal Tez Merkezinde kayıtlı bulunan, 28 üniversite hastanesi, dokuz devlet hastanesi ve iki askeri hastanedeki asistanlık programlarında 1980-2005 yılları arasında tamamlanan 22.625 tıpta uzmanlık tezinin SCI-expanded kapsamındaki dergilerde yayınlanma durumlarını belirlemek amacıyla Web of Science'ta araştırıldı. **Bulgular:** SCI expanded dergilerinde yayınlanan tez sayısı 1397 (%6,2) olarak ve yazı başına alınan yıllık atıf ortancaları sayısı 0.3-5.0 aralığında bulundu. Yayınlanma yüzdesi askeri hastanelerde en yüksek iken devlet hastanelerinde en düşük bulundu. **Sonuç:** Türkiye'de yapılmış olan tıpta uzmanlık tezlerinin yayınlanma yüzdesi diğer Avrupa ülkeleri ile karşılaştırıldığında daha düşük bulunmaktadır. Bu durumun açıklayıcısı olacak çeşitli sebebpler ortaya konulabilir. Tıp eğitimindeki çeştli eksiklikler, tez yazımını ve yayınlanmasını teşvik edici desteklerin eksikliği gibi. Bu durumda işgücü, zaman ve parasal kaynaklarımızı daha etkin kullanabileceğimiz alternatif yollara gerekisinimimiz bulunmaktadır. Birinci seçenek tamamen veya bazı hastane tiplerinde asistanlık eğitimini tamamlamak için tez yazma zorunluluğunu kaldırmak ve seçmeli hale dönüştürmektir. Bir başka seçenek ise bir Ulusal Tez Danışma Merkezi kurarak bir tez projesinin yürütülebilmesi için bu merkezin onayının alınmasını esas kılmaktır.

Anahtar Kelimeler: Akademik tezler; eğitim,tıbbi; yayınlar; eğitim, tıp, yüksek lisans

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Writing a thesis is one of the essential requirements for getting a postgraduate medical degree in Turkey. Therefore, every year students invest money, time and human resources to prepare

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and conduct their theses. There are two goals in writing medical theses: one is to contribute to science and the other is learning scientific methods. In the long term, medical research improves the students' independent analytical problem-solving skills, and ability to critically interpret scientific literature.[1]

Therefore, we analised medical theses written in 1980-2005. This study shows that publication pattern percentage of our country's medical theses are very low. A study in France shows that 17% of theses presented between 1993 and 1998 has resulted in publication.[2] In Peru, 482 medical theses were registered between 2000 and 2003, and 85 (1.6%) were published in biomedical-indexed journals.[3] Nieminen et al. studied 256 consecutives theses presented between 2001 and 2003 at Oulu University in Finland. Sixty-one (23.8%) were published in indexed journals from several databases.[4] Despite the acknowledged advantages of publishing, getting students to publish the results of their theses seems to be a global problem.[2,4,5]

Writing a thesis is an essential step for a medical doctor who wants to be a specialist. It is also important that medical undergraduate curricula should include courses that teach scientific thinking and the principles of scientific research.

The academic staff at the department act as supervisor for a thesis. Such scientific writing includes a variety of problems in terms of scientific level. One indicator of the scientific value of a thesis and of the acceptability of its content to the international scientific community, is whether the work has been published in a peer-reviewed journal. These peer-reviewed articles are also indicators of integration of teaching and research within medical education. Therefore, the objective of this study was to evaluate the publication pattern of Turkish medical theses. However this study shows that, in our country percentages of published medical theses are very low.

The aim of this study was to determine the conversion rates of Turkish residency theses to scientific articles.

MATERIAL AND METHODS

In this study, we evaluated 25 368 theses, that were recorded at web of National Theses Center (http://tez2.yok.gov.tr), and were written between years 1980 and 2008. The evaluated records did not include every thesis written between 1980 and 2008. Those that were written after year of 2005 were not included in the evaluation because of the fact that geting any citation needs approximately two years after publication. Consequently, during the study period, 22 625 medical theses were evaluated written from 28 university, two military and nine state hospitals between the years 1980 and 2005. The name, author, supervisor, establishment, institution, date of thesis as well its department were recorded from the website of National Theses Center.

The data were transfered to Referance Manager Program. The name of the resident was then searched in order determine whether the thesis had resulted in a scientific publication indexed in the web of sciences with Referance Manager Program. We evaluated for all articles that included the name of the resident as an author and then browsed through these to find potential matches with the thesis. The journal impact factor as reported by the journal citation reports of the ISI web of knowledge for the publication year was obtained from the journal that published the article. For each thesis, we searched all references including the name of the student or that of the thesis supervisor. For recurring last or first names, we tried all combinations of names and initials. For each eligible publication, we recorded the journal name, the year of publication, the number of authors and their impact factor. We transfered all data to Excel program and analysed them using SPSS 15.0 program.

RESULTS

A total of 1397 (6.2%) theses resulted in publication. We found a significant difference in publication rates of institutions ($p< 0.05$). We determined that none of the theses written at one university and one state hospital resulted in a publication. Particularly in year, 2000 a total of 155 (14%) theses resulted in a publication. Unfortunately, none

of the theses written between years 1982-1984 resulted in publication. The publication rates increased as years got closer to 2000. The distribution of publication rates are shown in Figure 1.

Theses were more often cited in journals in years 2002-2004 when compared to other years. Theses were published in journals with higher impact factor in 2000s than the others years. Theses were not cited in journals between 1980-1984. However; theses were published in journals with similar impact factors. The median number of citations received per paper per year was ranging from 0.3 to 5. The theses published form two university and two state hospitals were not cited. The distribution of citations and their impact factors are shown in Table 1 and Figure 2.

The publication rates of theses were evaluated according to instutition. Proportion of theses that result in publication was highest in Hacettepe University when compared the other institutions; followed by Marmara University as second and Dokuz Eylül University as third rank (Table 2).

The publication pattern of theses were evaluated for type of hospitals. Therefore, theses of military hospitals resulted in publication the most frequently. A total of 91 (8.6%) theses of military hospitals were published. However, a total of 31 (1.3%) theses of state hospitals were published (Table 3 and Figure 3).

The publication pattern of theses were evaluated for each scientific region. The theses from İnternal medicine resulted in publication the most. A total of 67% theses from İnternal medicine region resulted in publication (Figure 4).

The publication pattern of theses are evaluated for each department. The theses from nuclear medicine resulted in publication the most. A total of 13 (13%) theses from nuclear medicine department resulted in publication (Table 4 and Figure 5).

The publication pattern of theses were evaluated for three biggest cities (İstanbul, Ankara, İzmir) and other cities. A total of 932 (6.3%) theses from three biggest cities resulted in publication. A total of 465 (5.9%) theses from other small cities resulted in publication (Table 5).The distribution of articles for three largest cities (İstanbul, Ankara, İzmir) and other cities are shown in Table 5.

DISCUSSION

The ultimate goal of education is the acquisition of knowledge and the ability to apply it in practice. With this purpose, beside traditional education system many alternative educational systems have been sugested in all over the world. For most physicians and dentists, the thesis included in their core curricula of medical or dental basic education; and this is the only contact they would have with the tools of scientific writing.[4]

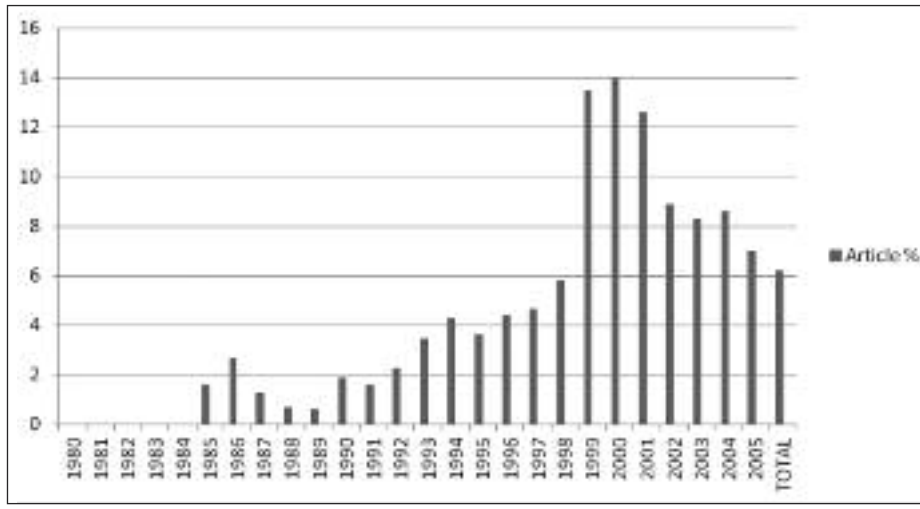

FIGURE 1: The distribution of publications pattern of theses.

TABLE 1: The distribution of citations and theirs impact factors.

	Citation/ Year		Impact Factors		Total publications	
Years	Median	Range*	Median	Range*		%
1980	-	-	1.05	(1.05-1.05)	1	100.0
1981	-	-	-	-	1	100.0
1982	-	-	-	-	0	100.0
1983	-	-	-	-	0	100.0
1984	-	-	-	-	0	100.0
1985	0.37	(0.15-1.17)	1.64	(1.02-2.06)	5	100.0
1986	0.44	(0.10-4.97)	0.84	(0.47-1.68)	10	100.0
1987	0.39	(0.15-1.60)	1.09	(0.69-1.51)	5	100.0
1988	0.30	(0.18-0.89)	0.64	(0.59-1.13)	3	100.0
1989	0.33	(0.11-0.80)	0.62	(0.26-2.47)	4	100.0
1990	0.50	(0.23-0.92)	0.75	(0.29-1.21)	15	100.0
1991	0.44	(0.44-0.71)	1.15	(0.72-2.52)	14	100.0
1992	0.33	(0.14-0.73)	0.72	(0.56-1.63)	19	100.0
1993	0.53	(0.25-1.34)	0.97	(0.51-1.37)	25	100.0
1994	0.85	(0.40-1.45)	0.99	(0.41-1.80)	41	100.0
1995	0.87	(0.50-1.12)	1.02	(0.54-2.00)	41	100.0
1996	1.00	(0.37-1.12)	1.05	(0.54-1.81)	62	100.0
1997	1.08	(0.50-2.03)	0.97	(0.50-1.38)	62	100.0
1998	1.33	(0.52-3.12)	1.03	(0.63-1.56)	81	100.0
1999	1.00	(0.50-1.80)	0.99	(0.65-1.45)	169	100.0
2000	1.25	(0.66-2.00)	1.19	(0.69-1.85)	155	100.0
2001	1.50	(1.00-3.00)	1.01	(0.64-1.60)	164	100.0
2002	2.00	(1.00-3.62)	1.28	(0.74-1.95)	122	100.0
2003	2.00	(1.00-4.00)	1.18	(0.69-2.13)	126	100.0
2004	2.00	(1.00-3.75)	1.42	(0.83-2.44)	152	100.0
2005	1.00	(1.00-2.00)	1.43	(0.76-2.93)	120	100.0
TOTAL	1.00	(0.60-2.25)	1.12	(0.69-1.86)	1397	100.0

*:Inter quartil range

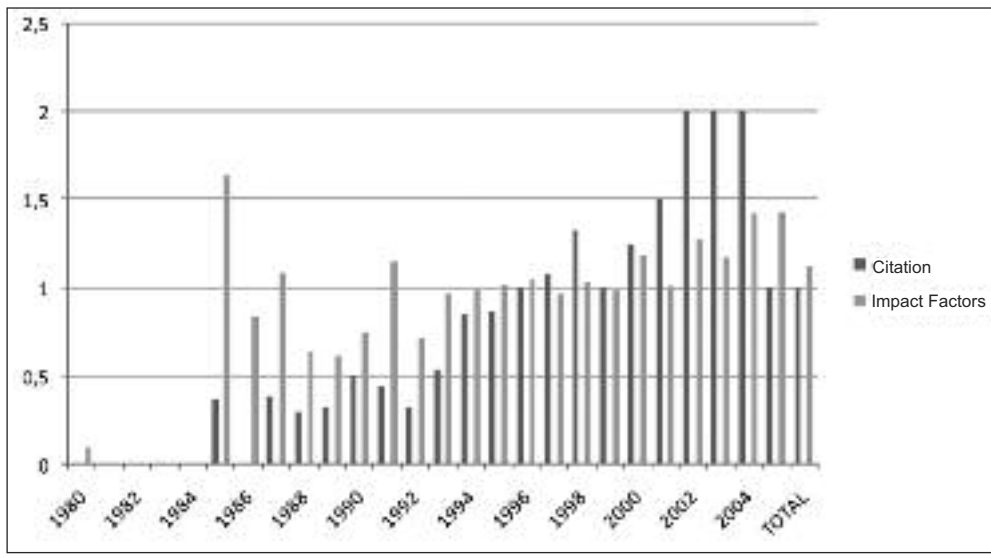

FIGURE 2: The distribution of citations and theirs impact factors.

TABLE 2: The distribution of publications according to instutitions.

	Publications Pattern				
	Article		Paper		Total
Institutions	Numbers	%**	Numbers	%**	Number
Hacettepe U Faculty of Medicine	53	14.1	8	2.1	375
Marmara U Faculty of Medicine	74	12.9	17	3.0	573
Gazi U Faculty of Medicine	106	10.6	12	1.2	1001
Dokuz U Eylül Faculty of Medicine	98	10.3	13	1.4	954
GATA Military Medical Academy	74	9.9	10	1.3	745
Pamukkale U Faculty of Medicine	16	9.7	5	3.0	165
Süleyman Demirel U Faculty of Medicine	20	9.5	2	0.9	210
Erciyes U Faculty of Medicine	65	9.4	9	1.3	690
SSK Ankara Children hospital	4	9.3	1	2.3	43
İnönü U Faculty of Medicine	30	8.6	1	0.3	347
Abant Izzet Baysal U Faculty of Medicine	3	8.6	0	0.0	35
Yüzüncü Yıl U Faculty of Medicine	15	8.5	0	0.0	177
PTT Erenköy Hospital	3	8.1	1	2.7	37
Çukurova U Faculty of Medicine	66	6.7	12	1.2	991
Osman Gazi U Faculty of Medicine	12	6.7	4	1.1	178
Fırat U Faculty of Medicine	28	6.6	5	1.2	427
Ondokuz Mayıs U Faculty of Medicine	39	6.0	7	1.1	648
Cerrahpaşa U Faculty of Medicine	106	5.9	17	0.9	1808
İstanbul U Faculty of Medicine	155	5.8	23	0.9	2665
Ege U Faculty of Medicine	106	5.8	18	1.0	1819
Cumhuriyet U Faculty of Medicine	31	5.6	3	0.5	558
Dicle U Faculty of Medicine	35	5.4	9	1.4	649
GATA Military Hospitals	17	5.4	3	0.9	313
Ankara U Faculty of Medicine	112	5.3	20	0.9	2109
Uludağ U Faculty of Medicine	23	4.7	7	1.4	493
Trakya U Faculty of Medicine	27	4.5	1	0.2	602
Selçuk U Faculty of Medicine	24	4.2	3	0.5	572
Atatürk U Faculty of Medicine	26	2.9	2	0.2	888
Ankara Education Hospital	14	2.9	2	0.4	478
SSK Education Hospital	1	2.9	0	0.0	34
Akdeniz U Faculty of Medicine	3	2.2	0	0.0	135
Kırıkkale U Faculty of Medicine	1	2.0	0	0.0	51
Ank. Atatürk Education Hospital	1	1.8	0	0.0	57
Harran U Faculty of Medicine	1	1.5	1	1.5	65
Göztepe Hospital	1	1.0	0	0.0	101
Şişli Etfal Hospital	5	0.5	1	0.1	932
Haydarpaşa Education Hospital	2	0.4	2	0.4	556
Gaziantep U Faculty of Medicine	0	0.0	0	0.0	33
Bakırköy Children Hospital	0	0.0	0	0.0	111
Total	1397	6.2	219	1.0	22625

(p< 0.05) **: Publications percentage of departments-Distribution among rows is shown. U: University

To our knowledge, this is the first study that reports the publication pattern of medical theses in our country. This study also reveals a domestic pattern of theses publication.

TABLE 3: The distribution of articles according to type of hospitals.

Institutions	Article	%***	Total
University Hospitals	1275	6.6	19218
Military Hospitals	91	8.6	1058
State Hospitals	31	1.3	2349
Total	1397	6.2	22625

*** : Distribution among rows is shown.

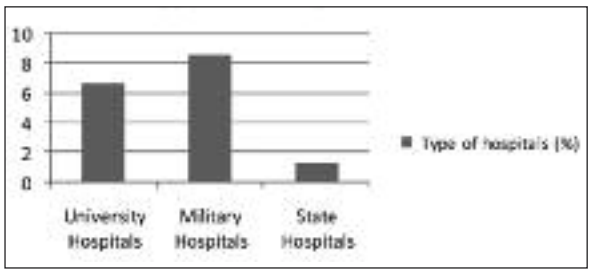

FIGURE 3: The distribution of article according to type of hospitals.

In this study, we found that only 6.2% of the theses were published in indexed journals, which is comparable to from developed countries such as Finland and France. A study in France showed that 17% of theses presented between 1993 and 1997 resulted in publication.[2] There is also reported data on master theses defended at two Croatian medical schools.[6] They found that 24% of those prepared by medical students in 1990-1999 had subsequently been published in scientific journals indexed in medline. AIn an other study, 482 medical theses were registered between 2000 and 2003; 85 (17.6%) were published in biomedical-indexed journals in Peru.[3] A study in India showed that 30% of theses-related research conducted in a university medical college was published in indexed journals.[1] In a study conducted in Finland, the percentage of diploma theses published is (23.8%).[4] Our percentage of published theses was very low when compared to other countries. It was engrossing. The science does not exist until it is published.[6] Low percentage of published theses raises the question of their scientific and educational value.[6-9] Low publication rate makes the quality of research suspect and compromises the quality of postgraduate medical education.[4,6] In addition, it represents a waste of manpower, money, and other resources. Universities should make efforts against this sort of publishing idleness and stimulate young researchers to publish the results of their theses. Conversely, low publication rates may be related to high workload of researchers with teaching and routine professional obligations, financial constraints, and lack of sophisticated equipment.[4,10]

This difference could be explained by the challenges that undergraduate students face when it comes to publishing. A barrier for students may be writing in English, which is considered a time-consuming and difficult enterprise for some. Another factor is the lack of incentives for publishing.

In Turkey, students and faculty do not usually receive funds for publishing. Numerous books, articles and Internet sites offer recommendations and instructions for the students on how to write and organize a research paper or thesis.[4] Medical and dental curricula often include introductions to the principles of scientific research.[11] There are many challenges and limitations for publication in undergraduate schools in Turkey. One strategy to tackle this issue could be organising courses and workshops on scientific publishing periodically that include ethical issues in publication. Ideally, those courses should be integrated into the medical curricula.

Despite the existence of courses in medical informatics, guides and thesis regulations, many students do not understand the process of scientific writing.[12] Some medical schools have developed student-oriented courses and programs to overcome the perceived difficulties and improve the quality of theses and promote their publication in Finland.[7,8,13]

A topic for future research is to determine the interests of students in conducting a thesis (e.g. purely academic or scientific) and the quality of the published articles coming from theses.

Researchers have suggested that the real value of scientific work lies in its publication in indexed literature. Publication makes research results visible and easily accessible to scientists anywhere in

TABLE 4: The distribution of publications according to departments.

	Publications Pattern					
Departments	**Article**	**%***	**Paper**	**%***	**Total theses**	**%**
Nuclear Medicine	13	13,04	1	1,0	100	100.0
Pharmacology	21	12,8	4	2.4	164	100.0
Rheumatology	6	12,0	1	2.0	50	100.0
Internal Medicine	260	10,3	59	2.3	2517	100.0
Pediatrics	235	9,3	32	1.3	2527	100.0
Pediatric Surgery	10	9,3	2	1.9	107	100.0
Medical Biology	4	9,1	0	0.0	44	100.0
Physiology	13	8,7	2	1.3	149	100.0
Plastic Surgery	27	8,6	0	0.0	313	100.0
Allergy and İmmunology	6	8,0	2	2.7	75	100.0
Physical medicine and Rehabilitation	54	7,5	13	1.8	717	100.0
Emergency Medicine	11	7,3	1	0.7	150	100.0
Biochemistry	42	7,2	7	1.2	583	100.0
Psychiatry	38	6,9	9	1.6	550	100.0
Neurosurgery	32	6,8	5	1.1	474	100.0
Cardiology	48	6,7	10	1.4	718	100.0
Child and adolescent Psychiatry	2	6,5	0	0.0	31	100.0
Radiology	28	6,3	3	0.7	441	100.0
Oncology	22	6,0	3	0.8	367	100.0
Neurology	38	5,9	10	1.5	647	100.0
Urology	39	5,7	4	0.6	684	100.0
Pathology	25	5,5	5	1.1	454	100.0
General Surgery	69	5,0	4	0.3	1372	100.0
Dermatology	31	5,0	5	0.8	617	100.0
Obstetric and Gynecology	67	4,8	6	0.4	1387	100.0
Morphology	9	4,5	0	0.0	200	100.0
Anesthesia and Reanimation	55	4,4	10	0.8	1260	100.0
Ear Nose Throat Disorders	32	4,2	0	0.0	762	100.0
Microbiology	22	4,2	3	0.6	521	100.0
Oftalmology	39	3,8	7	0.7	1031	100.0
İnfectious Diseases	15	3,5	0	0.0	426	100.0
Orthopedic and traumatologica	27	3,2	2	0.2	834	100.0
Thoracic medicine	16	3,0	3	0.6	535	100.0
Radiation Oncology	2	3,0	2	3.0	67	100.0
Forensic Medicine	3	2,6	1	0.9	114	100.0
Radiology and Nuclear Medicine	18	2,3	3	0.4	796	100.0
Cardiovascular Surgery	6	2,1	0	0.0	287	100.0
Public Health	4	1,5	0	0.0	269	100.0
Thoracic surgery	1	1,5	0	0.0	67	100.0
Family Medicine	1	0,9	0	0.0	110	100.0
TOTAL	1397	6.2	219	1.0	22625	100.0

**: Publications percentage of departments - Distribution among rows is shown.

the world.[14] In addition, it enhances the academic and professional credibility of the researchers, as well as that of the department and of the institution. The strengthening of scientific education is a key component in developing competent physicians who will not only ask the right questions but

also be able to apply current treatment methodologies.[15] The experience from medical schools that have had student research programs suggests that these can and do encourage medical students to take an interest in research and possibly an academic career.[16]

The supervisors and their departments and clinics should also be given proper acknowledgement for their work.[4] Publication success has been linked to supervisors' supportive role in scientific publishing activity.[10,17] Supervisors have a responsibility as mentors to encourage postgraduates to publish, and to facilitate professional progression.[18]

The necessity of redesigning medical education in accordance with changing conditions and requirements started to be discussed distinctively in the 1980s.[19] Medical education at the undergraduate, graduate and post-graduate levels are practiced in different ways. Paralel to this, residency thesis practices also vary between countries and regions as well. In the United States, practices of thesis are quite variable, even in some states that kind of practice does not exist.

It should be noted that there are significant differences between the institutions. This differences could be explained by infrastructure, intensity of work and vision of the institutions.This differences must be eliminated. First of all, the vision of institutions should be changed. There are important differences according to the types of hospitals. Especially in military hospitals, there is a significantly higher rate of publication. The reason for this may be more facilities present in military hospitals.In this respect, particularly state hospitals certainly should be encouraged for publication.

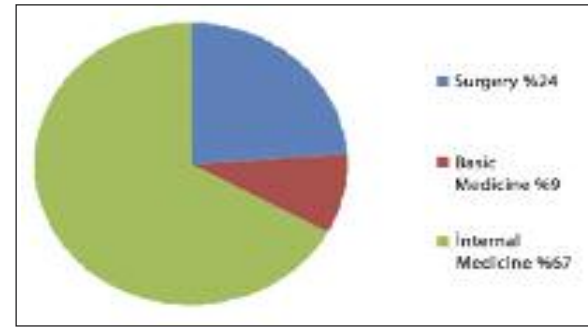

FIGURE 4: The distribution of publications according to scientific region.

There are significantly differences between the departments, too. There may be various reasons for these differences. First of all, the most important reason may be the time limitation. Becasue the rate of publication in surgical branches is significantly lower. The rate of publication should increase in surgical branches. Another important result is the significant differences between big ci-

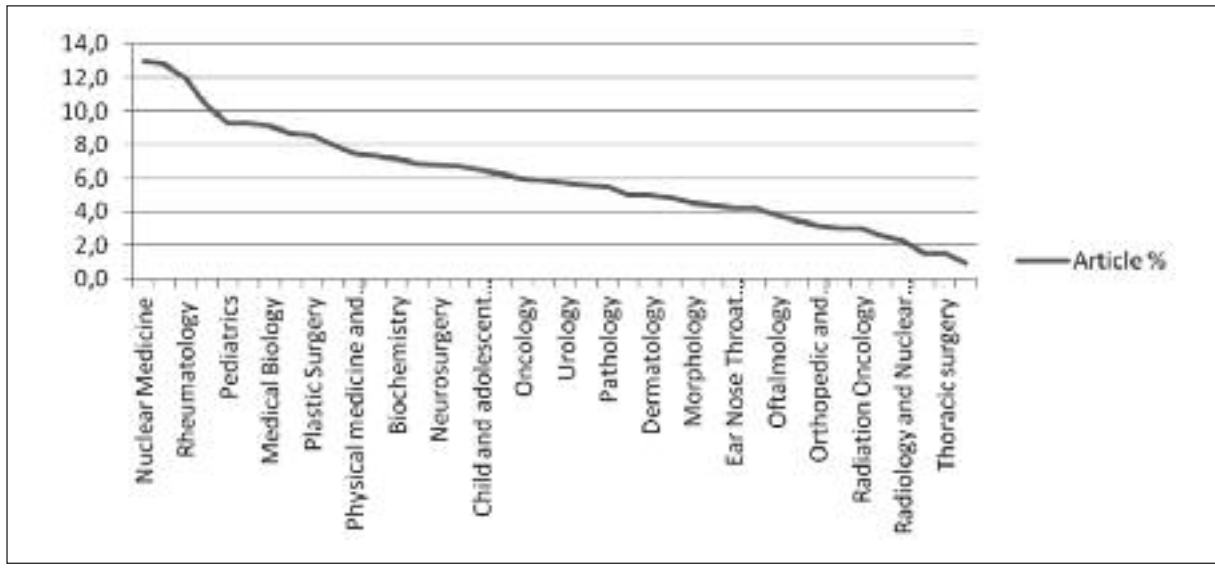

FIGURE 5: The distribution of publications according to departments.

TABLE 5: The distribution of articles according to three biggest cities and other cities.

Groups Of Cities	Article	%	Total	%
Three Biggest Cities***	932	6.3	14711	100.0
Other Cities	465	5.9	7914	100.0
Total	1397	6.2	22625	100.0

***: İstanbul, Ankara, İzmir.

ties and other cities. It is important to avoid this difference. This result may be related to the development of the country's egalitarian. Therefore, arrangements should be made on for the development of the country's egalitarian.

In this study, contribution of the thesis to scientific development has been evaluated for the first time, although writing thesis has been an obligation since residency education was first founded in our country. Our results are open to judgement because of the fact that our data is limited to National Theses Center and the records do not include all centers and all thesis from each center. The data about publication pattern of theses in other contries is limited.

Our study shows that 6.2% of theses resulted in publication between 1980-2005. It means that 93.8% of theses have no contribution to international science.

The most likely causes of low publication percentage of residency thesis in our country is as follows: heterogenous properties of hospitals which have residency programmes, lack of mechanisms checking the quality of thesis and inadequate (despite increasing) quantities of scientific articles written in our country when compared to other countries. Another factor may be the language of journal becuase the language of journals is not Turkish. It may be helpful to carry out researches on this subject. If proportion of manpower, time and financial recources are taken into account, it could be helpful to raise the quality of thesis by terminating obligation of writing thesis to finish residency education or at least making it optional. If current practice still persists, another alternative is to establish a National Thesis Advisory Center for approval of thesis at the pre-project phase.

One limitation of the study is that theses written after year of 2005 were not included in the evaluation because of the fact that the mentioned theses may be published and cited two years later. Therefore, our results available in 1980-2005.

CONCLUSION

Finally, more studies and discussions should be performed to understand the causes behind the lack of publication in undergraduates studies. We hope that our results help researchers, other health professionals and students to promote better research and improve the quality of publications.

REFERENCES

1. Dhaliwal U, Singh N, Bhatia A. Masters theses from a university medical college: publication in indexed scientific journals. Indian J Ophthalmol 2010;58(2):101-4.
2. Salmi LR, Gana S, Mouillet E. Publication pattern of medical these, France, 1993-98. Med Educ 2001;35(1):18-21.
3. Arriola-Quiroz I, Curioso WH, Cruz-Encarnacion M, Gayoso O. Characteristics and publication patterns of theses from a Peruvian Medical School. Health Info Libr J 2010; 27(2):148-54.
4. Nieminen P, Sipila K, Takkinen HM, Renko M, Risteli R. Medical these as part of the scientific training in basic medical and dental education: experiences from Finland. BMC Med Educ 2007;7:51.
5. Younes RN, Deheinzelin D, Birolini D. Graduate education at the Faculty of Medicine of the University of São Paulo: Quo vadis? Clinics 2005;60(1):6-8.
6. Frikovic V, Skender T, Dojcinovic B, Billc-Zulle L. Publishing scientific papers based on master's and PhD these from a small scientific community: case study of Croatian Medical Schools. CMJ 2003;44(1):107-11.
7. Guilford WH. Teaching peer review and the process of scientific writing. Adv Physiol Educ 2001;25(3):167-75.

8. Cunningham D, Viola D. Collaboration to teach graduate students how to write more effective theses. J Med Libr Assoc 2002;90(3): 331-4.

9. Lloyd T, Phillips BR, Aber RC. Factors that influence doctors'participation in clinical research. Med Educ 2004;38(8):848-51.

10 Polašek O, Kolčić I, Buneta Z, Čikeš N, Pećina M. Scientific production of research fellows at the Zagreb University School of Medicine, Croatia. Croat Med J 2006;47(5): 776-82.

11. Virtanen JI, Nieminen P. Information and communication technology among undergraduate dental students in Finland. Eur J Dent Educ 2002;6(4):147-52.

12. Cunningham SJ. How to write a thesis. J Orthod 2004;31(2):144-8.

13. Marusić A, Marusić M. Teaching students how to read and write science: a mandatory course on scientific research and communication in medicine. Acad Med 2003;78(12): 1235-9.

14. Dhaliwal U, Kumar R. An observational study of the proceedings of the All India Ophthalmological Conference, 2000 and subsequent publication in indexed journals. Indian J Ophthalmol 2008;56(3):188-94.

15. Ogunyemi D, Bazargan M, Norris K, Jones-Quaidoo S, Wolf K, Edelstein R, et al. The development of a mandatorymedical thesis in an urban medical school. Teach Learn Med 2005; 17(4):363-9.

16. Solomon SS, Tom SC, Pichert J, Wasserman D, Powers AC. Impact of medical student research in the development of physician scientists. J Investig Med 2003;51(3):149-56.

17. Cooper M, Turpin G. Clinical psychology trainees' research productivity and publications: an initial survey and contributing factors. Clin Psychol Psychother 2007;14(1): 54-62.

18. Singhi S. Rajagopal R, Ludhiana RM, Nirmalan P, Hyderi A, Ravikiran S. PG thesis: idealistic vs realistic. Indian J Pediatr 2007; 74(9):864-6.

19. Ozturk Turkmen H. [Medical ethics education and the Turkish experience: medical education]. Turkiye Klinikleri J Med Sci 2009;29(1): 246-53.