

RESEARCH COMMUNICATION

World Gynecologic Oncology Publications and the Turkish Contribution to the Literature between 2000 and 2007

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Abstract

Aim: To investigate the number of publications and the contribution from top-ranking countries, institutions, and authors in 3 gynecologic oncology journals (Gynecologic Oncology [GO], International Journal of Gynecological Cancer [IJGC], and European Journal of Gynaecological Oncology [EJGO]), as well as the degree of Turkish contribution between 2000 and 2007. **Method:** Articles published between 2000 and 2007 in 3 gynecologic oncology journals indexed by the Science Citation Index were accessed via the ISI-Thomson website. Additionally, PubMed, Scencedirect, and Blackwell-Synergy databases were used to identify the originating countries and institutions of the published articles. The types of articles, originating countries, and names of the institutions and authors were determined. Furthermore, the number of articles affiliated with Turkish institutions and the publication year were also determined. **Results:** We located 6,851 articles published in the 3 journals. During this period 36.1%, 7.7%, 7.2%, 5.8% and 4.8% of the papers originated from the USA, Japan, Italy, Turkey, and England, respectively. The 5 most productive institutions were the University of Texas, Memorial Sloan-Kettering Cancer Center, Roswell Park Cancer Institute, University of Alabama, and University of Athens. The 5 most productive authors were Markman (USA), Chi (USA), Ayhan (Turkey), Barakat (USA), and Vergote (Belgium), respectively. In all, 36.1% of the papers originated from the USA, while 44% originated from 17 European countries. The USA was the first-ranked country of origin in GO and IJGC, while Turkey was the first-ranked country of origin in EJGO. Overall, 399 (5.8%) papers originated from Turkish institutions. **Conclusion:** Most of the gynecologic oncology publications originated from the USA and Western European countries, where gynecologic oncology training is available and surgical and research traditions are well established. On the other hand, Turkish researchers made an important contribution to gynecologic oncology research during the selected period of time; publications originating from Turkey exceeded in number all European countries, except those originating from Italy.

Keywords: Gynecologic oncology - publication trends - research productivity - bibliometrics

Asian Pacific J Cancer Prev, 12, 861-864

Introduction

Publication of the results of research, especially in prestigious international journals, is one of the major aims of scientists and clinicians in order to disseminate knowledge throughout the scientific community. It is known that the great majority of scientific research is produced in developed countries. This is primarily related to economic conditions, and the level of research and development budgets in such countries.

Gynecologic oncology was defined as a subspecialty within the discipline of obstetrics and gynecology more than 30 years ago in the USA. The Society of Gynecologic Oncologist was founded in 1969 and Gynecologic Oncology Group (GOG) was founded in 1970. In 1972 the American Board of Obstetrics and Gynecology defined the qualifications and eligibility requirements necessary for certification of special competence in gynecologic

oncology, and the first certificates were awarded in 1974. The European Society of Gynecologic Oncology and International Gynecological Cancer Society were founded in 1983 and 1986, respectively. Furthermore, following the example of the USA, many other countries established national gynecologic oncology societies. The establishment of these international and national societies resulted in the development of collaborative research projects and educational activities (Averette et al., 2001; Bristow et al., 2009).

Although research on the productivity of different biomedical fields in different regions of the world has been conducted, assessment of the productivity of gynecologic oncology research is represented by only 1 report, which was limited to 2 gynecologic oncology journals, and this paper was mainly focused on correlating research productivity in countries differing in economic status and population (Klar et al., 2009; Dursun et al., 2009). The

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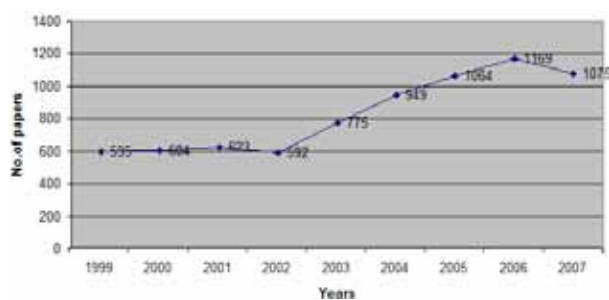


Figure 1. Publication Trends over Time for the Three Journals Combined

aim of the present study was to investigate the publication trends in 3 gynecologic oncology journals and the degree of the Turkish contribution between 2000 and 2007, as well as to quantify the contribution according to country of origin, affiliated institution, and author. 2005).

Materials and Methods

We retrospectively investigated the publication trends in 3 gynecologic oncology journals and the degree of Turkish contribution between 2000 and 2007. Three clinical journals related to gynecologic oncology (Gynecologic Oncology [GO], International Journal of Gynecological Cancer [IJGC], and European Journal of Gynaecological Oncology [EJGO]) were selected in order to determine the total number of the papers, types of papers, and their originating institutions and authors.

In order to locate articles published in the 3 gynecologic oncology journals, which are indexed in the Science Citation Index, the PubMed, ISI-Thomson, ScienDirect, and Blackwell-Synergy databases were searched. The number of articles affiliated with Turkish institutions and publication year were determined.

The number of papers published in the 3 journals, including research papers, reviews, letters, and editorials, were determined using ISI-Thomson. Then, the country of origin and authors were determined using the PubMed, ScienDirect, and Blackwell-Synergy databases.

Results

In total, 6,851 gynecologic oncology articles were published between 2000 and 2007. Among them, 59.6%, 22.8%, and 17.4% were published in GO, IJGC, and EJGO, respectively. More articles were published in GO than in the other journals combined. Distribution of the papers with respect to year of publication is shown in Figure 1.

In all, 77.6% of the papers were research articles, while 5.8%, 5.6%, and 4.8% were letters, proceedings papers, and review articles, respectively. The USA was the first-ranked country of origin in GO and IJGC, while Turkey was the first-ranked country of origin in EJGO. Table 1 shows the total number of papers in these journals and the top-ranking countries of origin in each journal between 2000 and 2007. During this period, 36.1%, 7.7%, 7.2%, 5.8%, and 4.8% of all papers published originated from the USA, Japan, Italy, Turkey, and England, respectively. The

Table 1. Top 10 Countries Publishing Research in the 3 Journals

GO		IJGC		EJGO	
Country	%	Country	%	Country	%
USA	58.6	USA	17.6	Turkey	15.8
Italy	7.0	Italy	11.6	Greece	14.2
Canada	6.0	England	9.2	Italy	10.8
Japan	4.8	Japan	8.0	Japan	7.0
China	4.2	China	7.4	Poland	6.2
Germany	3.4	South Korea	7.0	USA	3.8
England	3.2	Turkey	6.0	Brazil	3.4
South Korea	3.0	Netherlands	4.0	Germany	3.0
France	2.8	Germany	3.4	Serbia	3.0
Netherlands	2.8	Canada	3.2	Israel	2.6

5 most productive institutions were University of Texas, Memorial Sloan-Kettering Cancer Center (MSKCC), Roswell Park Cancer Institute, University of Alabama, and University of Athens. The 5 most productive authors were Markman (USA), Chi (USA), Ayhan (Turkey), Barakat (USA), and Vergote (Belgium), respectively.

The great majority of papers (36.1%) came from US institutions, followed by those that originated from institutions in 17 European countries. In all, 399 (5.8%) of the articles originated from Turkish institutions. Furthermore, 17.7% (213/1197) of the papers published in EJGO, 6.8% of those in IJGC (107/1564), and 1.9% of those in GO (79/4,090) originated from Turkish institutions. Among the papers of Turkish origin, nearly 80% were affiliated with universities, while 20% were affiliated with non-university institutions. Furthermore, approximately 60% of these publications were research articles, while the remaining 40% were reviews, short communications, case reports, and other types of publications. Hacettepe University, Ege University, and İstanbul University were the most productive Turkish government universities, while Başkent University was the most active private Turkish university. SSK Etilik Maternity Hospital and Zeynep Kamil Maternity Hospital were the most active non-university Turkish institutions (details are not given in the results).

Discussion

It is well known that the quantity of scientific research increases along with economic growth and development, and it appears to be gaining momentum in developing countries. Recent studies report that about two-thirds of all scientific papers published in the top 50 biomedical journals between 1995 and 2002 originated from the USA. Western Europe contributed approximately 25% of published papers, while the remaining articles came from the rest of the world during the same time period (Dursun et al., 2009). Furthermore, with regard to oncological research, it has been reported that 35.5% of papers originated from the EU, while 38.8% of papers originated from the USA. In Europe the leading countries were the UK (20.3%) and Italy (18.1%), followed by Germany (15.2%), France (12.7%), and The Netherlands (9.1%) (Soteriades et al., 2006).

Our analysis shows that institutions from the USA were the most active with respect to the number of published

gynecologic oncology research papers, as for other biomedical areas. Moreover, there were 7 USA researchers among the top 10 gynecologic oncology researchers, while the remaining 3 were from Belgium, Italy, and Turkey. Furthermore, all of the top 30 institutions were in the USA, except for 5. As the subspecialty of gynecologic oncology was created and developed in the USA, these results are not unexpected. Moreover, the economic status of the USA is also an important factor contributing to these findings. An abundance of research funds and trained researchers might also explain the continued dominance in research by the USA (Maeda et al., 2003).

Interestingly and unexpectedly, European countries with formal gynecologic oncology training programs or well-established surgical and gynecological traditions, such as the UK, Germany, France, Austria, etc., were not among those with the top 30 institutions or top 30 authors. France and Germany have strong traditions of publishing in their native languages, which needs further research and analysis (Ugolini and mela, 2003). On the other hand, Greece, Turkey, and Belgium, where formal training is not available, were placed among the top ranking institutions and authors. This could be due to highly motivated and dedicated researchers in these countries with large numbers of patients, such as Vergote from Belgium and our group from Turkey.

Recently, Gerald Gisch, the former President of the European Society of Gynecologic Oncology (ESGO), and his research group published a bibliographic article and analyzed the research status of different countries, with respect to gynecologic oncology publication, and reported that Israel, Austria, and Turkey were the most productive countries in Europe, and that Turkey, China, and South Korea had the most striking increases in the numbers of published papers. Gitsch et al. reported that the top 5 countries in Europe, in terms of total number of publications, were the UK, Italy, Germany, Turkey, and Austria. Furthermore, in terms of quality, the same 5 countries appeared on the top after adjusting for corresponding impact factors (Klar et al., 2009). The present study observed that the USA and European countries produced the vast majority of papers, as did Gistch et al. This could be due to the abundance of available research funds, the relatively high number of research institutions, and the abundance of trained researchers in these continents.

Gynecologic oncology began as a subspecialty in the USA in the 1960s and this subspecialty became the cornerstone for the management of women with pre-invasive and invasive genital tract malignancies. Furthermore, recent studies report that gynecologic oncologists are one of the most important independent prognostic factors in the management of patients with gynecologic cancers (Bristow et al., 2009). Nonetheless, only a few countries, including the USA, the UK, Canada, and Australia, recognize gynecologic oncology as an independent specialty and offer formal subspecialist training. As can be seen from Table 1, these countries published almost 50% of all gynecologic oncology research. These 4 countries with formal gynecologic oncology training produced significantly more papers

than all other countries; therefore, it can be concluded that formal gynecologic oncology training leads to an increase in a country's publication rate.

Although Turkey has no formal gynecologic oncology training programs, the country ranked 4th with respect to the number of publications, 2 Turkish surgeons ranked in the top 30 authors, and these surgeons' institutions ranked in the top 30 institutions. As reported by Klar et al. (2009) and the present study, there has been an exponential increase in the number of publications from Turkey, which warrants further analysis. During the investigated period 5.8% of all gynecologic oncology research publications originated from Turkish institutions and Turkey was ranked 4th among the top 30 countries. Additionally, 2 researches and 1 institution from Turkey ranked among the top lists. Among these Turkish publications, 80% originated from universities, while 20% originated from non-university instructions. Furthermore, approximately 60% of these publications were research articles, while the remaining 40% were reviews, short communications, case reports, and other types of publications.

Although the number of gynecologic oncology research reports from Turkey is increasing, it is unfortunate that the nearly 50% of the papers were published in journals that do not use a strict referral process. On the other hand, as can be seen in Table 1, Turkey ranked 7th in the number of publications in IJGC and 15th in GO. Turkey is classified as a middle-income country by the World Monetary Fund. There might be several explanations for the continuing increase in research publications from Turkey. First, scientific research in Turkey is primarily funded by the government. Increasing national income and research budgets, and the growing number of academic staff may be positively impacting research productivity in Turkey. Secondly, it has been reported by national and international authorities that there is an increase in the number of publications from all biomedical scientific disciplines in Turkey, and Turkey rose from 44th to 19th in the worldwide ranking of scientific publication between 1980 to 2003 (Anonymous, 2005; Glänzel, 2008).

Another important factor for the increase in the number of publications from Turkey might be that academic appointments are primarily based on the quantity and quality of internationally published research. We think that the Turkish Higher Educational Council's requirement of at least 2 internationally published research papers in order to be considered for academic positions at Turkish universities is also an important factor contributing to this trend. Prior to appointing associate professorships, the Turkish Higher Educational Council conducts a review of candidates in order to evaluate their academic publications (<http://www.yok.gov.tr>). Furthermore, the Scientific and Technological Research Council of Turkey (TUBİTAK) has increased its annual research budget and implemented an uncomplicated online application procedure for those seeking research funds, which has increased access to its funding.

We think that widespread acceptance of the Internet by the Turkish academic community and easy access to the full text of scientific journals also contributes significantly to the advancement of scientific research in

Turkey. Focusing on gynecologic oncology, in addition to the abovementioned factors, an increase in the number of gynecologic oncology articles might be related to an increase in the number of healthcare centers and university clinics in Turkey, and positive promotion of the Turkish Gynecologic Oncology Society (TRSGO), which was established as a scientific non-governmental organization nearly 3 decades ago. This society organizes a biannual international congress and at least 4 national educational meetings and workshops since its establishment. These meetings most likely help to increase awareness among gynecologists of gynecologic oncology.

The lack of detailed citation analysis of other non-gynecologic oncology journals that publish gynecologic cancer research, the lack of publication trend correlation with population and economical size, as highlighted by Gitsch et al., are limitations of the present study. On the other hand, the lack of analysis of high-impact papers is another major drawback of this study. However, it is well known that it is not easy to investigate the impact of the papers and therefore this paper was not intended to investigate the high-impact papers.

In conclusion, this study shows that US institutions have a significant impact on gynecologic oncology research, US and European institutions produced the vast majority of gynecologic oncology research, Countries with formal gynecologic oncology training programs produced a significant proportion of the published research, Japan, Italy, Turkey, Greece, and China were ranked among the top 10 countries, but do not have formal gynecologic oncology training programs and Turkish researchers produced a significant quantity of gynecologic cancer research during the selected period and the number of publications originating from Turkey exceeds that of all other European countries, except Italy.

Acknowledgements

The authors declare that there are no conflicts of interest.

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