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Bibliometric Approach to Total Hip Arthroplasty Literature Originating from Turkey

Türkiye Kaynaklı Total Kalça Artroplasti Literatürüne Bibliyometrik Yaklaşım

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Abstract

Aim: The aim of this study is to analyze research productivity in Turkey using published articles on total hip arthroplasty.

Material and Method: All scientific articles published in English in the Science Citation Index Expanded and the Emerging Sources Citation Index between 1970 and 2023 were analyzed using "Web of Science". The number of articles, authors, institutions, and the 30 most frequently cited articles were analyzed. In addition, the Scopus database was also analyzed with the same method for making comparisons. Visualization was also done with Vosviewer tool.

Results: As a result of the study, we found 190 articles in the WOS database and 485 articles in the Scopus database, until the end of March 2023. according to the WOS database (journals published in ESCI and SCIE indexes), Turkey ranked 15th among 108 countries. According to the Scopus database, Turkey ranked 22nd.

Conclusion: Scholars can help clarify the history of Turkish literature on THA by using the study's data summary. We discovered 190 articles in the WOS database and 485 articles in the Scopus database as a consequence of the research up until the end of March 2023. In comparison to other countries, the quantity of articles was remarkably low.

Keywords: Bibliometric analysis, publications, total hip arthroplasty

Öz

Amaç: Bu çalışmanın amacı, total kalça artroplastisi üzerine yayınlanmış makaleleri kullanarak Türkiye'deki araştırma verimliliğini analiz etmektir.

Gereç ve Yöntem: 1970-2023 yılları arasında Science Citation Index Expanded ve Emerging Sources Citation Index'te İngilizce olarak yayınlanan tüm bilimsel makaleler "Web of Science" kullanılarak analiz edildi. Makale sayıları, yazarları, kurumları ve en sık atıf alan 30 makalesi analiz edildi. Ayrıca karşılaştırma yapabilmek için Scopus veri tabanı da aynı yöntemle analiz edilmiştir. Görselleştirme de Vosviewer aracı ile yapılmıştır.

Bulgular: Çalışma sonucunda Mart 2023 sonuna kadar WOS veri tabanında 190, Scopus veri tabanında 485 makale bulduk. WOS veri tabanına (ESCI ve SCIE dizinlerinde yayınlanan dergiler) göre Türkiye 15. sırada yer aldı. 108 ülke arasında Scopus veri tabanına göre Türkiye 22. sırada yer aldı.

Sonuç: Bilim adamları, çalışmanın veri özetini kullanarak TKA ile ilgili Türk edebiyatının tarihini netleştirmeye yardımcı olabilir. Mart 2023 sonuna kadar yaptığımız araştırma sonucunda WOS veritabanında 190, Scopus veritabanında 485 makale tespit ettik. Diğer ülkelere kıyasla makale sayısı oldukça düşüktü.

Anahtar Kelimeler: Bibliyometrik analiz, total kalça, yayın

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INTRODUCTION

Total hip arthroplasty (THA) is the treatment procedure for hip arthritis in adults and has been described as one of orthopedic surgery's most effective and affordable treatments.[1] In this procedure, biocompatible materials are used to replace sections of the upper femur and acetabulum components. The major objectives of this operation are to retain hip stability while removing all discomfort and restoring complete range of motion to the joint.[2] The THA as it is known today was first developed in the 1930s utilizing metallic implants to replace bones and joints.[3] Although Wiles developed the first THA in 1938, it wasn't until Sir John Charnley from Wrightington Hospital introduced the "low-friction arthroplasty" in 1962.[4,5] The THA was considered a revolutionary surgical technique in the 1960s in the treatment of elderly arthritis patients with positive long-term results.[5] The initial success of the first implants used by Moore, Thomson, McKee-Farrar and it was short-lived, mostly due to heavy pressure from the acetabular component. With the introduction of Charnley's hip, this problem was largely resolved in the 1970s. By the 1970s, one design he produced as a result of his work on tribology almost completely replaced the others.[6] The first application of hip prosthesis in Turkey was performed by Prof. Dr. Akif Şakir Şakar in 1948. hip surgery, hip arthroscopy and hip arthroscopy in Turkey in parallel with the developments in the world preventive surgery, continues its development.[7] There are numerous surgical techniques for the THA, each with particular benefits and drawbacks. Direct posterior, direct lateral, and direct anterior routes are the most often performed techniques. When employing either procedure, a variety of technical advancements enable secure and effective femoral and acetabular reconstruction.[8] The three main treatment objectives of a THA pain relief, improved quality of life, and function restoration are the key factors that determine whether the procedure is successful.[5] THA concerns include hip dislocation, abductor dysfunction, fractures, and nerve damage, albeit the relative risks of each procedure differ. Many clinical studies show that patient-reported outcomes, complication rates, and return to function vary amongst surgical methods.[6,9]

Globally, the number of total hip replacements performed has grown exponentially over the past decade, with a sharp rise in the proportion of young patients looking to improve quality of life and return to vigorous physical activity.[1] Nowadays, life expectancy is increasing and with musculoskeletal problems (osteoarthritis, rheumatoid arthritis, traumas, etc.), the number of THA surgeries is also increasing. According to 2015 OECD Health Statistics, the highest number of THA operations were performed in Switzerland (292/100,000), Germany (283/100,000), and Austria (276/100,000 in 2013. In Turkey, this rate is 44/100,000.[10]

Bibliometric analysis is the most powerful tool available today for monitoring long-term research trends on a given topic. This approach facilitates research on online bibliometric databases that have been widely used in recent years. Through this method, the research contributions of different countries, institutions, journals and authors in the scientific field can be presented objectively, and research trends or hotspots can be identified. It can also serve as a guide for future research.[11-13] Bibliometric methods are also popular in orthopedics and have been used in previous studies.[14-21] However, no comparable studies of THA literature from Turkey were found in the existing literature.

MATERIAL AND METHOD

Although there are numerous databases that can be used for bibliometric analysis, in this study we chosed The Web of Science (WoS) Core Collection Science Citation Index Expanded (SCI-EXPANDED) and Emerging Sources Citation Index (ESCI) Indexes due to their high scientific quality. 'Article' selected as document type in search engine. To find the articles about THA between 1970 and March 2023 that originating from Turkey, the WoS database was accessed on April 1, 2023.

Search terms selected from the MESH library were as below. "arthroplasty, replacement, hip" [MeSH Terms] OR ("arthroplasty" [All Fields] AND "replacement" [All Fields] AND "hip" [All Fields]) OR "hip replacement arthroplasty" [All Fields] OR ("total" [All Fields] AND "hip" [All Fields] AND "arthroplasty" [All Fields] OR "total hip arthroplasty" [All Fields].

The literature accessed as a result of the restrictions made within the study plan was then downloaded to the computer in plain text and Excel file format.

Data extracted from these articles included bibliometric parameters such as, manuscript title, first author, total citation count, year of publication, avarage citation number since the date of publication, journal name, affiliation of origin, etc.

Graphs and tables were created using Excel files. Percentage and frequency values were used in the tables. In addition, Scopus and Wosdatabase's own graphics were also used for visualizations. The VOSviewer tool was used to generate and visualize bibliometric networks (Leiden, Leiden University, The Netherlands).[22]

In addition we selected Scopus database to search THA articles from Turkey to make comparisions with WOS database. We used same time period and same keywords.

RESULTS

13956 total global documents from 108 different countries and 11417 articles SCIE and ECSI indexed in the WOS database. There was 24 countries with more than 100 published articles on THA as shown in **Table 1**. The United States of America (USA) published most of the articles (5040 articles) on THA. China (1085 articles), Japan (1064 articles), England (926 articles) and Germany (885 articles) were the mostly publishing countries on THA.

Table 1. Mostly publishing countries on total hip arthroplasty globally according to the WOS database results

Ranking	Countries/Regions	Number of articles	% of 13.956
1	The USA	5040	36.113
2	CHINA	1085	7.774
3	JAPAN	1064	7.624
4	ENGLAND	926	6.635
5	GERMANY	885	6.341
6	CANADA	704	5.044
7	FRANCE	571	4.091
8	NETHERLANDS	399	2.859
9	SWITZERLAND	397	2.845
10	SOUTH KOREA	389	2.787
11	ITALY	385	2.759
12	SWEDEN	360	2.580
13	AUSTRALIA	349	2.501
14	DENMARK	290	2.078
15	TURKEY	190	1.361
16	AUSTRIA	183	1.311
17	SPAIN	173	1.240
18	INDIA	160	1.146
19	FINLAND	158	1.132
20	NORWAY	136	0.974
21	SCOTLAND	129	0.924
22	GREECE	127	0.910
23	TAIWAN	111	0.795
24	BELGIUM	108	0.774

Turkey ranks 15th in the number of articles published on THA. 190 articles from Turkey on THA. These articles were cited 1291 times (mean citations 6.79) with an H-index of 18. Among them, 85.789% of the articles were published in SCI-EXPANDED, and 14.211% of the articles were published in ESCI indexed journals. In terms of language of publication, these articles were published in English (94.211%), Turkish (5.263%) and Portuguese (0.526%) languages. Turkey's first article on THA was published in 1999, and 2021 is the year with the most articles published, with a total of 37 articles. The number of publications did not fall below 10 articles per year between 2014 and 2022 (**Figure 1**).

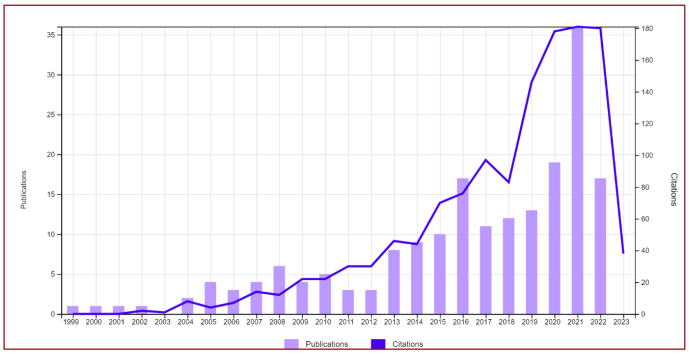
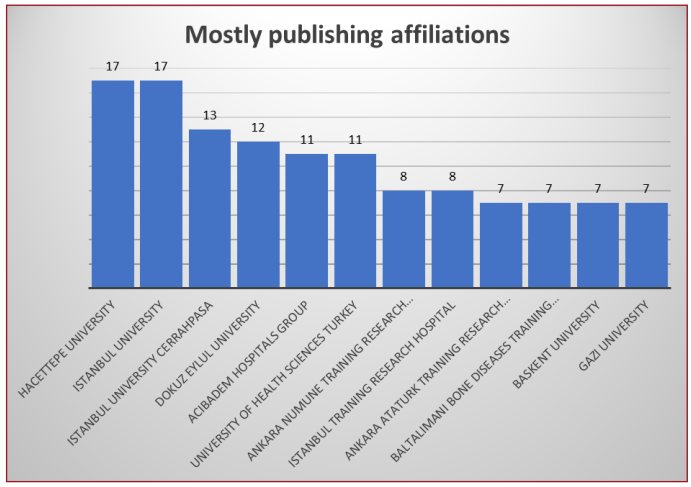


Figure 1. Citations and publications by years (WOS results)

The authors from 203 different affiliations contributed to THA literature from Turkey.

Hacettepe University (17 articles), Istanbul University (17 articles), Istanbul University / Cerrahpasa (13 articles) were the top affiliations contributed to THA literature from Turkey. The mostly publishing affiliations are listed in **Graphic 1.**



Graphic 1. Mostly publishing affiliations on total hip arthroplasty globally according to the WOS database results

The articles on THA from Turkey indexed in the WOS database were mostly published in Hip International (20 articles), Acta Orthopaedica et Traumatologica Turcica (18 articles), the Journal of Arthroplasty (17 articles) and Archives of Orthopaedic and Trauma Surgery (10 articles). **Table 2** summarizes the mostly publishing journals on THA from Turkey.

Table 2. The mostly publishing journals on total hip arthroplasty from Turkey according to the WOS database results

Publication Titles	n	% of 190
HIP International	20	10.526
Acta Orthopaedica et Traumatologica Turcica	18	9.474
The Journal of Arthroplasty	17	8.947
Archives of Orthopaedic and Trauma Surgery	11	5.789
Joint Diseases and Related Surgery	8	4.211
Eklem Hastalıkları ve Cerrahisi Dergisi (Joint diseases and related surgery)	7	3.684
Acta Orthopaedica Belgica	6	3.158
International Orthopaedics	6	3.158
Journal of Orthopaedic Surgery	5	2.632
The Indian Journal of Orthopaedics	4	2.105

*Shows10 out of 81 entries

The highly cited article on THA from Turkey according to the WOS database results published by Bilgen, et al in 2001.[23] This article was cited 107 times totally and 4.65 per year since it's publication year. **Table 3** summarizes the top 30 most cited articles on THA published in Turkey according to WOS database results.

Table 3. The top 30 most cited articles on THA published in Turkey according to WOS database results

Title	Authors	Source title	Publication year	DOI	Total citations	Average per year
C-reactive protein values and erythrocyte sedimentation rates after total hip and total knee arthroplasty	Bilgen, et al	Journal of international medical research	2001	10.1177/147323000102900102	107	4.65
Ultrasound guided Erector Spinae Plane block at L-4 transverse process level provides effective postoperative analgesia for total hip arthroplasty	Tulgar, S and Senturk, O	Journal of clinical anesthesia	2018	10.1016/j.jclinane.2017.11.006	80	13.33
Total hip arthroplasty in developmental high dislocation of the hip	Erdemli,et al	Journal of arthroplasty	2005	10.1016/j.arth.2005.02.003	64	3.37
Cementless Total Hip Arthroplasty With Modified Oblique Femoral Shortening Osteotomy in Crowe Type IV Congenital Hip Dislocation	Kilicoglu, et al	Journal of arthroplasty	2013	10.1016/j.arth.2012.06.014	51	4.64
The effect of exercise on hip muscle strength, gait speed and cadence in patients with total hip arthroplasty: a randomized controlled study	Unlu, et al	Clinical rehabilitation	2007	10.1177/0269215507077302	48	2.82
Subtrochanteric Shortening in Total Hip Arthroplasty: Biomechanical Comparison of Four Techniques	Muratli, et al	Journal of arthroplasty	2014	10.1016/j.arth.2013.09.004	43	4.3
The reliability of hip scoring systems for total hip arthroplasty candidates: assessment by physical therapists	Kirmit, et al	Clinical rehabilitation	2005	10.1191/0269215505cr869oa	35	1.84
The Effect of Relaxation Techniques and Back Massage on Pain and Anxiety in Turkish Total Hip or Knee Arthroplasty Patients	Buyukyilmaz, F and Asti, T	Pain management nursing	2013	10.1016/j.pmn.2010.11.001	32	2.91
Reliability of the six-minute walk test after total hip arthroplasty	Unver, et al	Hip international	2013	10.5301/hipint.5000073	31	2.82
Transverse Subtrochanteric Shortening Osteotomy During Cementless Total Hip Arthroplasty in Crowe Type-III or IV Developmental Dysplasia	Sofu, et al	Journal of arthroplasty	2015	10.1016/j.arth.2015.01.045	29	3.22
Late fatigue fracture of a modern cemented forged cobalt chrome stem for total hip arthroplasty - A report of 10 cases	Della et al	Journal of arthroplasty	2005	10.1016/j.arth.2005.03.038	24	1.26
Intraoperative estimation of femoral anteversion in cementless total hip arthroplasty using the lesser trochanter	Unlu, et al	Archives of orthopaedic and trauma surgery	2011	10.1007/s00402-011-1282-9	23	1.77
Cementless total hip arthroplasty with subtrochanteric transverse shortening osteotomy for severely dysplastic or dislocated hips	Yalcin, et al	Hip international	2010	10.1177/112070001002000113	22	1.57
A meta-analysis comparing the direct anterior with other approaches in primary total hip arthroplasty	Kucukdurmaz,et al	Surgeon-journal of the royal colleges of surgeons of edinburgh and ireland	2019	10.1016/j.surge.2018.09.001	21	4.2
Effects of total hip arthroplasty on spinal sagittal alignment and static balance: a prospective study on 28 patients	Eyvazov, et al	European spine journal	2016	10.1007/s00586-016-4696-9	21	2.63
Cementless total hip arthroplasty in patients with Crowe type-4 developmental dysplasia	Sofu, et al	Hip international	2013	10.5301/hipint.5000047	20	1.82
Assessment of hip abductors by MRI after total hip arthroplasty and effect of fatty atrophy on functional outcome	Kovalak, Emrah; Ozdemir, Hanife; Ermutlu, Cenk; Obut, Abdullah	Acta orthopaedica et traumatologica turcica	2018	10.1016/j.aott.2017.10.005	19	3.17
Test-retest reliability of the 50-foot timed walk and 30-second chair stand test in patients with total hip arthroplasty	Unver, et al	Acta orthopaedica belgica	2015		19	2.11

Table 3. The top 30 most cited articles on THA published in Turkey according to WOS database results

Title	Authors	Source title	Publication year	DOI	Total citations	Average per year
Total hip arthroplasty in patients with ankylosing spondylitis: Midterm radiologic and functional results	Saglam, et al	Acta orthopaedica et traumatologica turcica	2016	10.1016/j.aott.2016.06.010	18	2.25
Scintigraphic evaluation of impaction grafting for total hip arthroplasty revision	Tokgozoglu, et al	Archives of orthopaedic and trauma surgery	2000	10.1007/PL00013773	18	0.75
Two-Stage Cementless Revision Total Hip Arthroplasty for Infected Primary Hip Arthroplasties	Camurcu, Yalkin; Sofu, Hakan; Buyuk, Abdul Fettah; Gursu, Sarper; Kaygusuz, Mehmet Akif; Sahin, Vedat	Journal of arthroplasty	2015	10.1016/j.arth.2015.03.040	16	1.78
Cementless total hip arthroplasty for the management of tuberculosis coxitis	Ozturkmen, Yusuf; Karamehmetoglu, Mahmut; Leblebici, Cem; Gokce, Alper; Caniklioglu, Mustafa	Archives of orthopaedic and trauma surgery	2010	10.1007/s00402-009-0967-9	16	1.14
Long-term results of total hip arthroplasty in patients with juvenile rheumatoid arthritis	Bilsel, Nafiz; Gokce, Alper; Kesmezacar, Hayrettin; Mumcuoglu, Erhan; Ozdogan, Huri	Acta orthopaedica et traumatologica turcica	2008		16	1
Extravascular compression of the femoral vein due to wear debris-induced iliopsoas bursitis - A rare cause of leg swelling after total hip arthroplasty	Beksac, Burak; Toezuen, Remzi; Baktiroglu, Selcuk; Sener, Nadir; Della Valle, Alejandro Gonzalez	Journal of arthroplasty	2007	10.1016/j.arth.2006.04.002	15	0.88
Total hip arthroplasty in the developmental dysplasia of the hip using transverse subtrochanteric osteotomy	Ozan, Firat; Uzun, Erdal; Gurbuz, Kaan; Koyuncu, Semmi; Altay, Taskin; Kayali, Cemil	Journal of orthopaedics	2016	10.1016/j.jor.2016.06.010	14	1.75
Comparison of hemiarthroplasty and total hip arthroplasty in elderly patients with displaced femoral neck fractures	Barishan, Fatih Cansah; Akesen, Burak; Atici, Teoman; Durak, Kemal; Bilgen, Muhammed Sadik	Journal of international medical research	2018	10.1177/0300060518770354	13	2.17
RETRACTED: Femoral shortening osteotomy in total hip arthroplasty for severe dysplasia: a comparison of two fixation techniques (Retracted article. See FEB, 2023)	Catma, Mehmet Faruk; Unlu, Serhan; Ozturk, Alper; Aksekili, Atif M.; Ersan, Onder; Ates, Yalim	International orthopaedics	2016	10.1007/s00264-016-3144-0	13	1.63
Patients' Discharge Information Needs After Total Hip and Knee Arthroplasty: A Quasi-Qualitative Pilot Study	Sendir, Merdiye; Buyukyilmaz, Funda; Musovi, Duygu	Rehabilitation nursing	2013	10.1002/rnj.103	13	1.18
Gait analysis in adults with severe hip dysplasia before and after total hip arthroplasty	Marangoz, Salih; Atilla, Bulent; Gok, Haydar; Yavuzer, Gunes; Ergin, Sureyya; Tokgozoglu, A. Mazhar; Alpaslan, Mumtaz	Hip international	2010	10.1177/112070001002000409	13	0.93
Intermediate-term results after uncemented total hip arthroplasty for the treatment of developmental dysplasia of the hip	Ermis, et al	Eklem hastaliklari ve cerrahisi-joint diseases and related surgery	2010		13	0.93

Analysis Results of the WOS Database Data with VosViewer

Keyword analysis: The VOSviewer was used to find and analyze keywords that occurred more than once in a text. We classified 387 keywords into 41 study clusters, as shown in **Figure 2** using various colors. There was total 387 different keywords with minimum 1 occurrence. The lines connecting nodes depict the co-occurrence relationship, while the size of the nodes indicates frequency. The keywords with maximum occurrences were total hip arthroplasty (63 occurrences), arthroplasty (28 occurences) and hip (28 occurences) (**Table 4**).

Co Authorship Analysis

As shown in **Figure 3**, 14 countries with at least one articles were identified. The top regions and countries with the highest total link strength (TLS) were Germany (TLS=8) and the USA (TLS=7) (**Table 5**).

Table 4. The mostly occured keywords on THA published in Turkey according to WOS database results

Keyword	Occurrences	Total link strength
Arthroplasty	28	109
Cementless	10	39
Developmental dysplasia	7	24
Developmental dysplasia of the hip	10	43
Developmental hip dysplasia	5	17
Dislocation	7	24
Hip	28	110
Hip arthroplasty	11	43
Hip dysplasia	7	32
Osteotomy	8	33
Replacement	6	28
Total hip arthroplasty	63	221
Total hip replacement	10	30

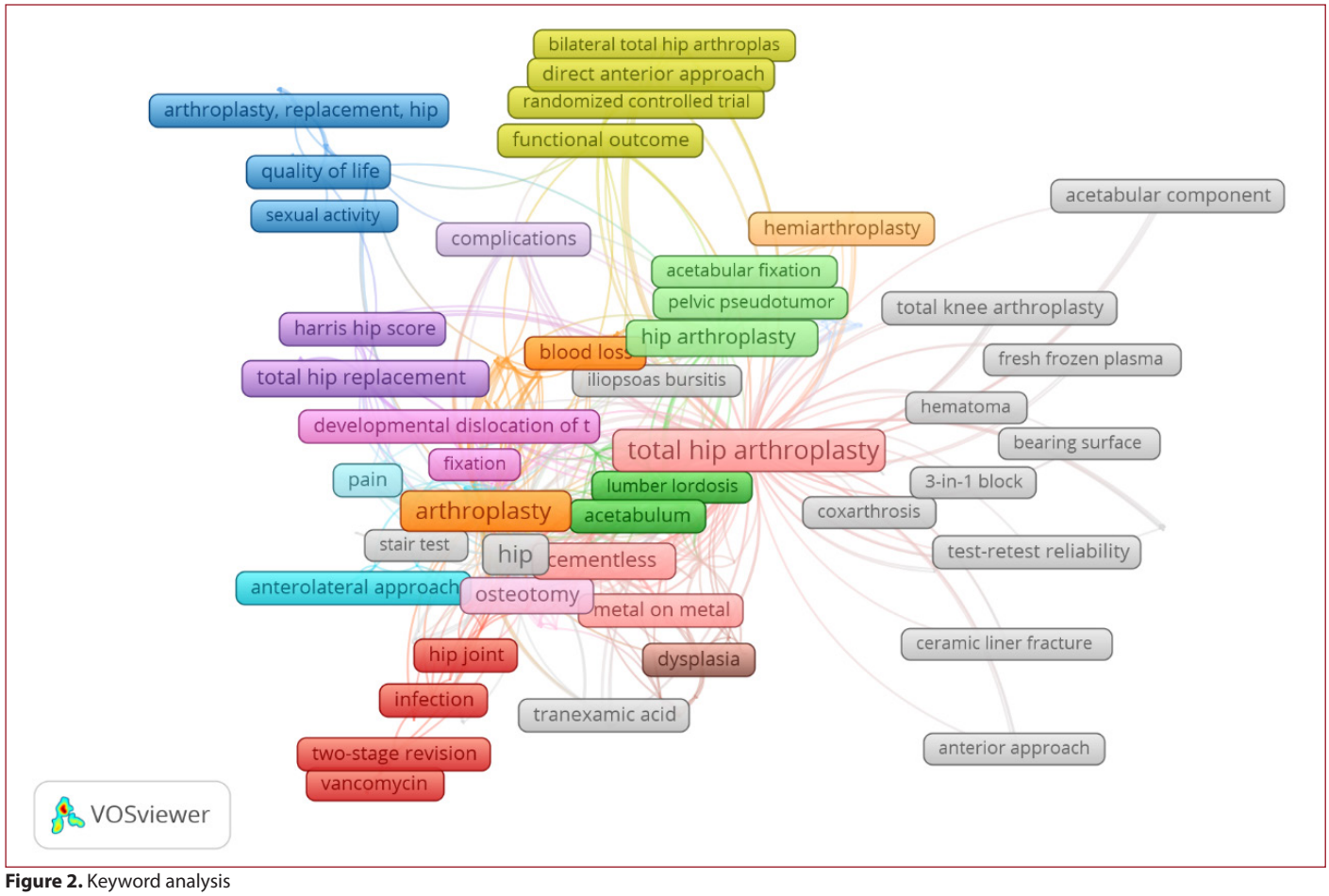


Figure 2. Keyword analysis

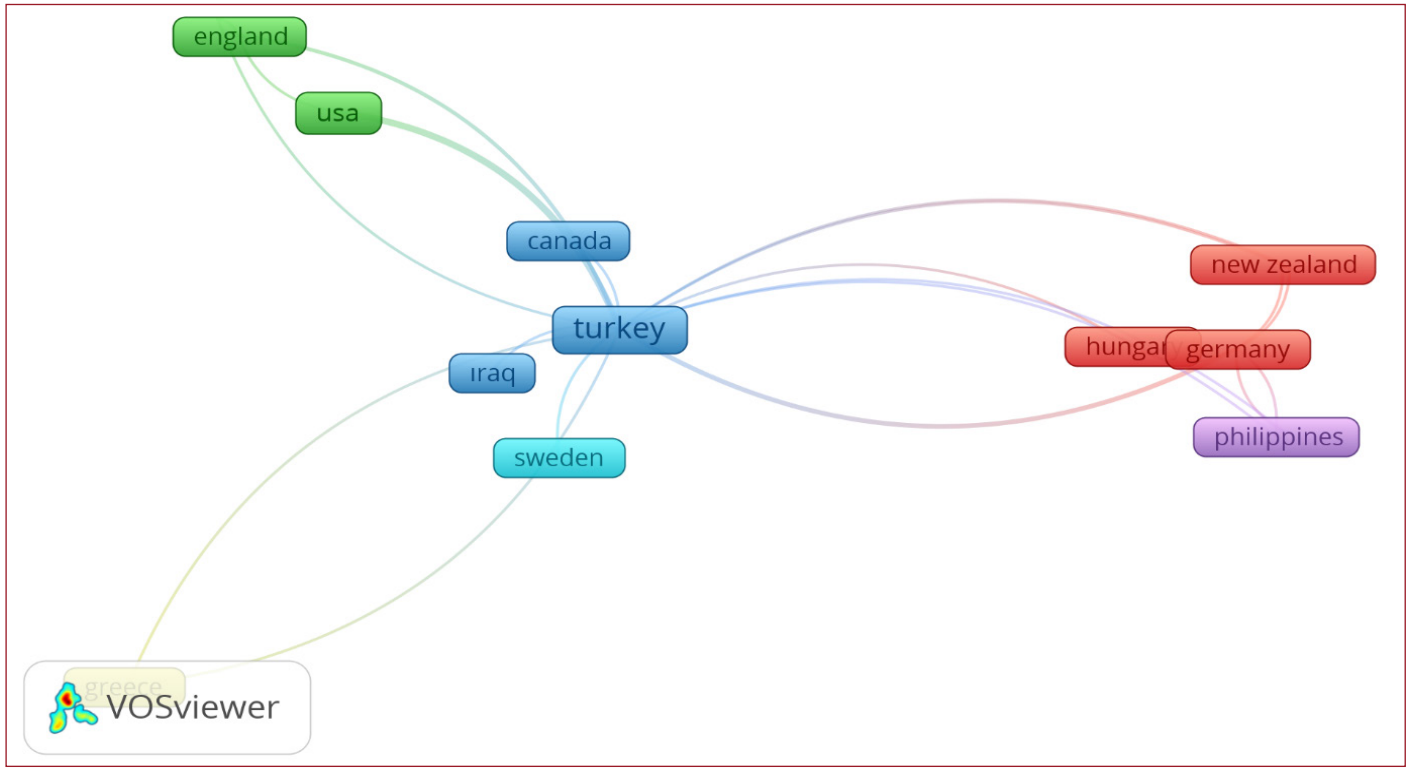


Figure 3. Co authorship analysis

Table 5. Summary of co-authorship analysis

Country	Documents	Citations	Total link strength
Azerbaijan	1	21	2
Canada	1	5	1
England	2	42	4
Germany	3	1	8
Greece	1	0	2
Hungary	1	1	2
New Zealand	1	0	3
Philippines	1	0	3
Sweden	1	2	1
Switzerland	1	0	2
Thailand	1	0	3
The USA	6	71	7
Iraq	1	0	1
Italy	1	0	3

Scopus Database Results

According to Scopus database results there was 38,366 articles, most of these articles were orginating from the USA (12,296 articles), United Kingdom (3,782 articles), Germany (3,033 articles), China (3,872 articles) and Japan (2,326 articles). Turkey ranked 22nd with 485 articles. The first article was published by Prof. Dr. Güngör Sami Çakırgil in 1972.[24]

Since the 2000s, there has been an increasing trend in the number of articles published per year, but it decreased in 2022 and 2021 was the mostly publishing year (**Figure 4**). It is seen that the number of articles on total hip arthroplasty has increased as we approach today.

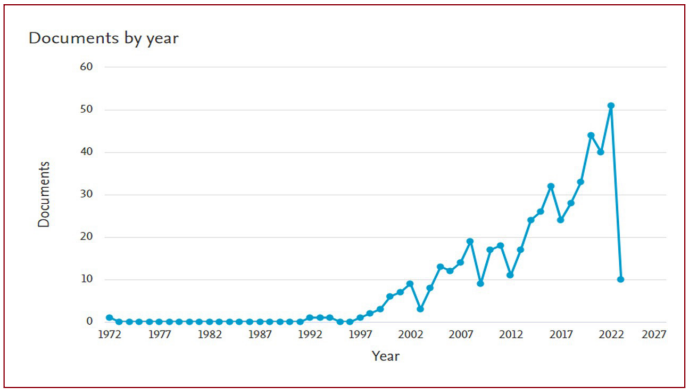
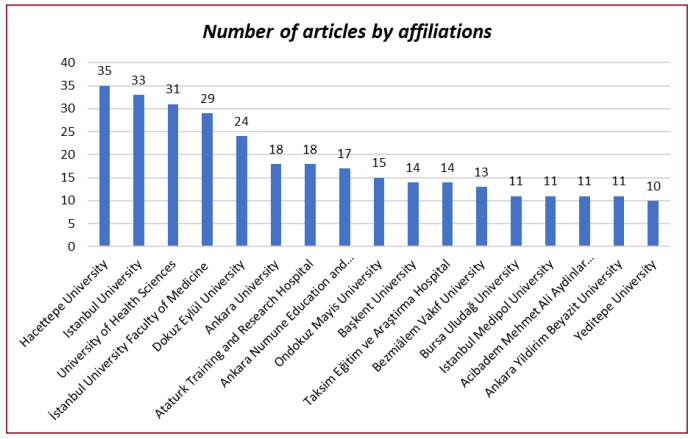


Figure 4. Documents by year. The year with the most publications is 2021

Hacettepe University (35 articles), Istanbul University (33 articles), University of Health Sciences (33 articles), Istanbul University / Cerrahpasa (29 articles) were the top affiliations contributed to THA literature from Turkey. The mostly publishing affiliations are listed in **Graphic 2**. It is seen that the number of articles on THA has increased as we approach today.



Graphic 2. Number of publications according to affiliation

The articles on THA from Turkey indexed in the Scopus database were mostly published in Acta Orthopaedica et Traumatologica Turcica (35 articles) journal. **Figure 5** summarizes the mostly publishing journals on THA from Turkey.

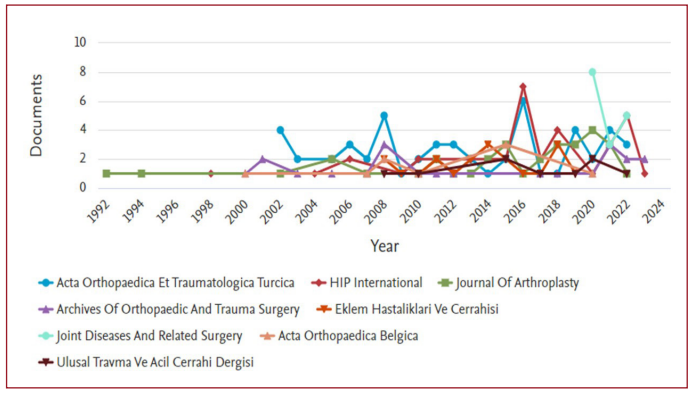


Figure 5. documents per year by source

DISCUSSION

Different databases can be selected with the bibliometric analysis method and it is possible to examine different types of publications.[16,25] Bibliometric studies examining theses and congress presentations in the field of orthopedics from our country are available in the literature.[26-28] The decision of the relevant researchers themselves is important in the selection of the reviewed literature. The WOS database, the Scopus database, PubMed, Google Scholar, ResearchGate, etc. , are usually the databases of choice. In this study, we examined the research articles published by Turkish authors on THA using the public electronic databases WOS and Elsevier's Scopus database.

With the help of bibliometric analysis, the number and quality of publications from a given country can be roughly estimated. In this study, we aimed to analyze publications on THA from Turkey using two different databases. Our study is the first bibliometric study on THA publications orginating from Turkey. In general, according to the WOS database

(journals published in ESCI and SCIE indexes), Turkey ranks 15th among 108 countries. According to the Scopus database, Turkey ranks 22nd. According to the WOS database, the first articles on THA from Turkey were published in 1999, while the first article in the Scopus database was published in 1972. 2021 was the year with the highest number of articles published in both databases. According to WOS results, the number of publications did not fall below 10 articles per year between 2014 and 2022. Since 2023 has not yet been completed, although no publications appear in 2023, it may be misleading as they may be added later.

According to WOS database results, there were 190 articles on THA from Turkey. 85.789% of these articles were published in SCI-EXPANDED and 14.211% in ESCI-indexed journals. According to the results of the Scopus database, there were 485 articles on THA from Turkey. The different results obtained in two databases may be due to the difference in the number of journals included in Scopus and ECSI/SCIE indexes. Scopus database contains more journals than WOS database.

A bibliometric analysis allowed us to provide information on the institutions that published publications, thereby identifying ancestral institutions in the field.[14-21] According to the results of our WOS database, although authors from 203 different institutions contributed to the Turkish THA literature, the institutions that contributed the most to the Turkish THA literature were Hacettepe University (17 articles), Istanbul University (17 articles) and Istanbul/Cerrahpaşa University (13 articles). In other words, the largest contributors are established universities from Turkey's two major cities (Ankara and Istanbul). According to our Scopus results, training and research hospitals under the Turkish Ministry of Health also contributed significantly to these publications, although they were also published by institutions in major cities.

Citation counts can indicate the quality of a country's publications. Until the end of 2022, the number of citations had increased especially in the last 10 years. Since 2023 has not yet been completed, the number of citations in this study should not be taken into account.

Bibliometric analyses can help us understand the journals that publish the highest proportion of publications on a topic so that researchers in this field/subject can have an idea about future journal choices.[16,18] The articles on THA from Turkey indexed in the WOS database were mostly published in Hip International (20 articles), Acta Orthopaedica et Traumatologica Turcica (18 articles), the Journal of Arthroplasty (17 articles) and Archives of Orthopaedic and Trauma Surgery (10 articles). Also the articles on THA from Turkey indexed in the Scopus database were mostly published in Acta Orthopaedica et Traumatologica Turcica (35articles) journal. The difference between the two databases may be due to the fact that these journals were indexed in different indexes in different time periods.

We also summarized the 30 most cited articles. According to our WOS database results, these articles were cited 1291 times (average number of citations 6.79) and had an H-index of 18. These numbers were also found to be low compared to previous bibliometric studies. As a result of our examination of cooperation between countries with Vosviewer, we had the most cooperation with the USA and Germany. However, both the number of collaborating countries and the level of collaborating level (TSL levels), were quite low.

Limitations

There are several limitations on this study. First of all, because the study is descriptive in nature, it can only provide a broad overview of the current level of research in the subject area and does not allow for in-depth examination of individual documents. As a result, it is impossible to understand in detail how certain papers are linked. Also, because of the search strategy's restrictions, some documents might be overlooked. Due to the existing use of keywords and subject phrases, which is highly ambiguous in our study, this also introduces additional needs for the documenting of records. There may be multiple ways to convey the same concept, which leads to inconsistent use of subject phrases and keywords and presents difficulties for thorough bibliometric analyses. Notwithstanding these drawbacks, we think our research could contribute to the THA publications originating in Turkey and offer fresh perspectives on cutting-edge developments in the field.

CONCLUSION

The data summarized in this study can help researchers understand the history of Turkish literature on THA that has been reviewed. As a result of the study, we found 190 articles in the WOS database and 485 articles in the Scopus database, published and added to the database until the end of March 2023. The number of articles was quite low compared to other countries. The publications were published by authors from big cities and centers. Since THA is an important topic in the current practice of orthopedics and the number of patients undergoing THA is expected to increase, research on THA published in our country should be supported. Also as international cooperation is limited, it should also be increased.

ETHICAL DECLARATIONS

Ethics Committee Approval: As it is not a human or animal study there is no need for ethical approval.

Referee Evaluation Process: Externally peer-reviewed.

Conflict of Interest Statement: The authors have no conflicts of interest to declare.

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