



ARAŞTIRMA MAKALESİ
RESEARCH ARTICLE
CBU-SBED, 2023, 10 (2): 83-89.

Ortopedi ve Travmatoloji Araştırmalarında En Çok Atıf Alan Yüz Türkçe Yayın

The Hundred Most Cited Turkish Publications in Orthopedics and Traumatology Research Articles

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Gönderim Tarihi / Received: 13.10.2022

Kabul Tarihi / Accepted: 31.05.2023

DOI: 10.34087/cbusbed.1188445

Öz

Giriş ve Amaç: Bu çalışma, Scopus ve Web of Science'da ortopedik cerrahi dergilerinde ilk yazarları Türk ve ilk yazarların kurumları Türkiye'de yayınlanan en çok atıf alan ilk 100 makalenin özelliklerini sınıflandırmayı ve analiz etmeyi amaçlamıştır.

Gereç ve Yöntemler: Scopus ve Web of Science veri tabanlarında 1983-2020 yılları arasında yayınlanmış en sık atıf yapılan 100 Türk ortopedi makalesi "Orthopaedics", "Orthopaedics and Traumatology" ve "Turkey" anahtar kelimeleri kullanılarak tarandı.

Bulgular: En çok atıf yapılan 100 makalenin tamamı İngilizce olarak ve Web of Science ve Scopus kullanılarak belirlenen 33 farklı dergide yayınlandı. En çok atıf alan makalelerin en eskisi 1992 yılında, en yenisi ise 2017 yılında yayınlanmıştır. İlk makaledeki atıf sayısı 271 ile 52 arasında değişmektedir. Makalelerin 84'ü üniversite hastanelerinde, 11'i eğitim ve araştırma hastanelerinden yayınlanmıştır. İstanbul, iller arasında ilk sırada yer alırken, onu Ankara ve İzmir izlemektedir.

Sonuç: Çalışmamızın sonuçlarına göre en çok atıf alan 100 Türkçe makale listesi Türk ortopedi camiasını ve genel ortopedi bilim camiasını ilgilendirmektedir. Klinisyenler, gelecekteki makalelerinin etkisini ve atıflarını iyileştirmek için bu çalışmayı kullanabilir.

Anahtar Kelimeler: Atıf, Bibliyometrik Analiz, Ortopedi

Abstract

Objective: This study aimed to classify and analyze the characteristics of the top 100 most cited articles published in journals of orthopedic surgery in Scopus and Web of Science which the first authors were Turkish and the institutions of the first authors were in Turkey.

Materials and Methods: Scopus and Web of Science databases were searched for the 100 most frequently cited Turkish orthopedics journal articles published between 1983 and 2020 using the keywords "Orthopaedics," "Orthopaedics and Traumatology," and "Turkey."

Results: The most 100 cited articles were all published in English and were published in 33 different journals identified using Web of Science and Scopus. The oldest of the most cited papers was published in 1992, and the

most recent was published in 2017. The number of citations ranged from 271 in the first article to 52. 84 of the articles were conducted in university hospitals, 11 in training and research hospitals, and 5 in state hospitals, according to the findings. Istanbul was ranked first among the provinces, followed by Ankara and İzmir.

Conclusions: According to the results of our study, the list of the most cited 100 Turkish articles is relevant for the Turkish orthopedic community and the general orthopedic scientific community according to our knowledge. Clinicians can use this study to improve the impact and citation of their future papers.

Keywords: Bibliometric Analysis, Citation, Orthopaedic

1. Introduction

Citations are the expression of a scientific study and the number of times an article has been mentioned is useful for determining its impact in the field. The larger the number of times an article is cited, the more effective and valid the piece and its authors are thought to be (1).

Bibliometric analysis has recently been used to evaluate the scientific production or levels of journals, authors, institutions, or countries at the national and international levels in various fields of medicine (2,3). Analyzing the most cited publications in a particular field is one of the most common research (4,5).

Bibliometric analysis for orthopedics and traumatology is gaining popularity; most studies show that more articles are being published in these fields (6), (7), (8), (9), (10), (11), (12). These studies are carried out to assess the quality and amount of a country's or region's scientific output. Several countries have utilized this strategy to improve their scientific status, however, most studies are limited to the field of orthopaedics and do not consider the contributions of orthopedic surgeons. The separation between orthopaedic sub-specialties has been more obvious in recent years, and the number of specialized journals accepting manuscripts only linked to a single subject of orthopedics has increased (13).

In the present study, we planned to classify and analyze the characteristics of the top 100 most cited articles published in journals of orthopedic surgery in Scopus and Web of Science which the first authors were Turkish and the institutions of the first authors were in Türkiye.

2. Material and Methods

The worldwide effective search engines Scopus and Web of Science databases were searched for articles published between 1983 and 2020 using the keywords "Orthopaedics," "Orthopaedics and Traumatology," and "Türkiye". The results of 11368 articles, reviews, and conference papers were arranged in order of most to least cited. In this analysis, the first 100 most cited papers were analyzed and included. Papers with non-Turkish first authors and institutions with non-Turkish first authors were excluded at this point.

Two independent investigators examined the abstracts of selected papers and analyzed them. The authors' country, the date of publication, the journal name, the institution, the first and senior authors, the

study design or document type (clinical experience, clinical review, meta-analysis, case report, original article), sub-branch, and the total number of citations and citations per year (citation density) were all gathered from the articles.

Statistical analysis

The SPSS for Windows version 22.0 program was used for statistical analysis (SPSS INC, Chicago, IL, USA). The mean, standard deviation (SD), median, or number, and frequency were used to show descriptive data. To compare categorical data, the Pearson chi-square test was used, whereas the Mann-Whitney U test was used to analyze continuous variables. The cutoff for significance was set at p 0.05.

3. Results and Discussion

3.1. Results

Given the system's regular updating of publications and citation numbers, the search was completed in a single day (January 4, 2021), and the parameters were then analyzed. The most 100 cited articles were ranked, with 271 citations at the top and 52 at the least (Table 1). The oldest of the most cited papers was published in 1992, and the most recent was published in 2017. The distribution of the studies by year is shown in Figure 1.

Table 1. First authors of the most cited articles and the number of citations

| Author | Citation Count |
|-----------------------|----------------|
| <u>Alanay, A.</u> | 271 |
| <u>Tandogan, R.N.</u> | 192 |
| <u>Ayhan, E.</u> | 187 |
| <u>Tezeren, G.</u> | 177 |
| <u>Ozkoc, G.</u> | 164 |
| <u>Görmeli, G.</u> | 162 |
| <u>Görmeli, G.</u> | 157 |
| Şahin, V | 150 |
| Yılmaz, C | 141 |
| Altay, M. | 122 |
| Özalay, M. | 119 |
| Sen, C. | 117 |
| Bilgen, Ö.F | 116 |
| Yazıcı, M. | 115 |
| <u>Duymus, T.M.</u> | 114 |

| | |
|----------------------------|-----|
| <u>Guven, O.</u> | 114 |
| <u>Kanatli, U.</u> | 107 |
| <u>Gunel, I.</u> | 106 |
| <u>Alemdarođlu, K.B.</u> | 100 |
| <u>Talu, U.</u> | 100 |
| <u>Demirhan, M.</u> | 98 |
| <u>Asik, M.</u> | 97 |
| <u>Kabak, S.</u> | 96 |
| <u>Baktir, A.</u> | 96 |
| <u>Akoahin, E.</u> | 95 |
| <u>Altay, T.</u> | 94 |
| <u>Enercan, M.</u> | 93 |
| <u>Aktas, S.</u> | 93 |
| <u>Kocaoglu, M.</u> | 93 |
| <u>Asik, M.</u> | 91 |
| <u>Rodop, O.</u> | 91 |
| <u>Ozdemir, H.M.</u> | 88 |
| <u>Kutlu, A.</u> | 86 |
| <u>Hamzaoglu, A.</u> | 85 |
| <u>Bozkurt, M.</u> | 85 |
| <u>Şener, N.</u> | 83 |
| <u>Şarлак, A.Y.</u> | 82 |
| <u>Kocaođlu, M.</u> | 82 |
| <u>Avcı, S.</u> | 82 |
| <u>Demirag, B.</u> | 79 |
| <u>Benli, I.T.</u> | 78 |
| <u>Mustafa Özdemir, H.</u> | 77 |
| <u>Göktürk, E.</u> | 77 |
| <u>Guney, A.</u> | 76 |
| <u>Kalaci, A.</u> | 76 |
| <u>Altay, M.</u> | 75 |
| <u>Togrul, E.</u> | 75 |
| <u>Aydin, N.</u> | 74 |
| <u>Akel, I.</u> | 74 |
| <u>Binnet, M.S.</u> | 74 |
| <u>Deniz, G.</u> | 72 |
| <u>Yercan, H.S.</u> | 72 |
| <u>Ömeroglu, H.</u> | 71 |
| <u>Aşık, M.</u> | 71 |
| <u>Dogrueel, H.</u> | 70 |
| <u>Yuceturk, A.</u> | 70 |
| <u>Aydogan, M.</u> | 69 |
| <u>Sar, C.</u> | 69 |

| | |
|-----------------------|----|
| <u>Bozkurt, M.</u> | 68 |
| <u>Heybeli, N.</u> | 67 |
| <u>Karapinar, L.</u> | 66 |
| <u>Kose, N.</u> | 65 |
| <u>Atik, O.S.</u> | 65 |
| <u>Sevki, K.</u> | 65 |
| <u>Kabak, S.</u> | 64 |
| <u>Öğüt, T.</u> | 64 |
| <u>Demirhan, M.</u> | 64 |
| <u>Ozturan, K.E.</u> | 63 |
| <u>Kesmezacar, H.</u> | 63 |
| <u>Göksan, S.B.</u> | 63 |
| <u>Erdemli, B.</u> | 63 |
| <u>Ürgüden, M.</u> | 63 |
| <u>Cetik, O.</u> | 62 |
| <u>Cetik, O.</u> | 62 |
| <u>Atay, Ö.A.</u> | 62 |
| <u>Esenyel, C.</u> | 61 |
| <u>Yildiz, Y.</u> | 61 |
| <u>Çınar, M.</u> | 60 |
| <u>Hamzaoglu, A.</u> | 60 |
| <u>Arazi, M.</u> | 60 |
| <u>Özkoc, G.</u> | 60 |
| <u>Us, A.K.</u> | 59 |
| <u>Karatoprak, O.</u> | 58 |
| <u>Karaoglu, S.</u> | 57 |
| <u>Aktas, S.</u> | 57 |
| <u>Asik, M.</u> | 57 |
| <u>Ofluoglu, O.</u> | 57 |
| <u>Özdemir, H.M.</u> | 56 |
| <u>Demirkan, F.</u> | 56 |
| <u>Tatari, H.</u> | 56 |
| <u>Berk, R.H.</u> | 56 |
| <u>Başarir, K.</u> | 55 |
| <u>Oztürk, A.</u> | 55 |
| <u>Avcı, S.</u> | 55 |
| <u>Eren, O.T.</u> | 54 |
| <u>Şarлак, A.Y.</u> | 53 |
| <u>Orhan, Z.</u> | 53 |
| <u>Alanay, A.</u> | 52 |



Figure 1. Distribution of the most cited papers

The publications were published in 33 different journals identified using Web of Science and Scopus. Knee Surgery Sports Traumatology Arthroscopy, Spine, Archives of Orthopaedic and Trauma Surgery, Arthroscopy Journal of Arthroscopic and Related Surgery, and European Spine Journal were evaluated as the top five journals publishing the most cited articles (Table 2).

Table 2. Journals that published the most cited articles

| Name of Journal | Number of Publications |
|---|------------------------|
| Knee Surgery Sports Traumatology Arthroscopy | 10 |
| Spine | 10 |
| Archives of Orthopaedic and Trauma Surgery | 9 |
| Arthroscopy Journal of Arthroscopic and Related Surgery | 7 |
| European Spine Journal | 7 |
| Journal of Bone and Joint Surgery Series A | 6 |
| Clinical Orthopaedics and Related Research | 5 |
| International Orthopaedics | 5 |
| Journal of Spinal Disorders and Techniques | 5 |
| Journal of Pediatric Orthopaedics | 5 |
| Journal of Hand Surgery | 3 |
| Journal of Orthopaedic Trauma | 3 |
| Foot and Ankle International | 2 |
| Injury | 2 |
| Journal of Arthroplasty | 2 |
| Journal of Foot and Ankle Surgery | 2 |
| Journal of Shoulder and Elbow Surgery | 2 |
| Acta Orthopaedica | 1 |
| Acta Orthopaedica Belgica | 1 |
| BMC Musculoskeletal Disorders | 1 |
| Journal of Hand Surgery British and European Volume | 1 |
| Journal of Hand Surgery European Volume | 1 |
| Journal of International Medical Research | 1 |
| Journal of Orthopaedic Science | 1 |
| Journal of Pediatric Orthopaedics Part B | 1 |
| Journal of The American Podiatric Medical Association | 1 |
| Journal of Trauma | 1 |
| Journal of Trauma Injury Infection and Critical Care | 1 |
| Knee | 1 |
| Orthopedic Clinics of North America | 1 |
| Orthopedics | 1 |
| Skeletal Radiology | 1 |
| World Journal of Orthopaedics | 1 |

The top 100 most cited articles were divided into 3 different categories according to the publication type. These were in the form of articles, reviews, and

conference papers. Of the 100 studies, 92 were articles, 5 were reviews, and 3 were conference papers. This distribution is shown in Figure 2.

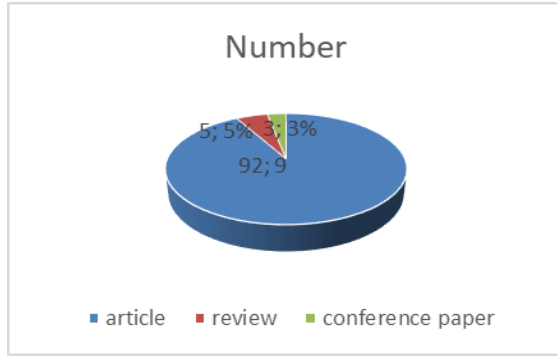


Figure 2. Publication type of the articles.

84 of the articles were conducted in university hospitals, 11 in training and research hospitals, and 5 in state hospitals, according to the findings. Istanbul was ranked first among the provinces, followed by Ankara and Izmir. The Orthopaedic and Traumatology clinics at Istanbul University Faculty of Medicine, Istanbul University Cerrahpasa Medical Faculty, and Hacettepe University Faculty of Medicine were listed among the top three in terms of institutions (Table 3).

Table 3. Institutions where research for the most cited articles was carried out.

| Institution | Papers |
|---|--------|
| Istanbul Üniversitesi | 18 |
| Istanbul Üniversitesi Tıp Fakültesi(Cerrahpaşa) | 15 |
| Hacettepe Üniversitesi | 10 |
| Florence Nightingale Hospital | 8 |
| Ankara Üniversitesi | 8 |
| Erciyes Üniversitesi | 7 |
| Dokuz Eylül Üniversitesi | 6 |
| Ibn-i Sina Hospital | 5 |
| Selçuk Üniversitesi | 5 |
| Ankara University, Faculty of Medicine | 5 |
| Baskent Üniversitesi | 5 |
| Ankara Numune Education and Research Hospital | 4 |
| Acibadem Kadıköy Hospital | 4 |
| Istanbul Bilim University | 4 |
| Abant İzzet Baysal Üniversitesi | 3 |
| Mustafa Kemal Üniversitesi | 3 |
| Social Security Hospital | 3 |
| Gaziosmanpaşa Üniversitesi | 3 |
| Eskişehir Osmangazi Üniversitesi | 3 |
| Baskent University Faculty of Medicine | 3 |
| Gazi University, Faculty of Medicine | 3 |
| Emergency Care and Traumatology Hospital | 2 |
| Süleyman Demirel Üniversitesi | 2 |
| Bursa Uludağ Üniversitesi | 2 |
| VKV Amerikan Hastanesi | 2 |
| Fatih Üniversitesi Tıp Fakültesi va Hastanesi | 2 |
| Celal Bayar Üniversitesi | 2 |
| Ege Üniversitesi | 2 |
| Ankara Numune Hospital | 2 |
| Kirikkale Üniversitesi | 2 |
| Kocaeli Üniversitesi | 2 |
| Fatih Üniversitesi | 2 |
| Çukurova Üniversitesi | 2 |

3.2. Discussion

The number of citations received by an article determines its prominence and influence in the medical literature. The number of citations represents how many times the article has been read and cited in other works. The number of citations is determined not only by the type of article topic but also by the impact the article has on the authors who read it and cite it in future publications. This is the first national analysis of the most cited articles in the fields of orthopedics and traumatology. Recent publications, authors, and institutions that have made significant contributions to the international Orthopaedic literature are featured in this bibliometric analysis. Furthermore, the number of citations received by each work allowed for the identification of key study areas and topics (14).

When the publication dates of the research were examined, it was discovered that the articles with the greatest citations were published between 2002 and 2009. It's possible that this happened since peak citations take more time for articles. An article's citations generally peak after seven years, therefore publications from more recent years will take longer to reach their citation top. We believe that advances in implant technology, positive surgical treatment outcomes, and an increase in the number of cases have an impact on this situation (15,16).

The abstracts were used to determine the topics of each article, which were then grouped by subject field. With 25 and 20, respectively, spine surgery, sports injuries, and arthroscopy topped the list.

Trauma came in third place with 15 articles. Adult reconstruction and arthroplasty, as well as hand surgery, were ranked fourth and fifth, respectively, with ten articles each. Shoulder and elbow surgery, pediatric orthopedic surgery, bone, and soft tissue tumors, and foot and ankle surgery were ranked 6, 7, 8, and 9 in that order. When we looked at the studies, we found that the most discussed topic was spinal deformity and surgical techniques. These findings indicate that the surgical method remains intriguing. Our research has a few limitations. Book citations, presentations, and citations that could be used in other sections of the literature were not examined. The snowball effect, which has been documented in earlier investigations, is another restriction (17,18). According to this theory, the citation rates of previously cited publications will rise in future research. Another problem is that as time passes after an article is published, the number of citations grows. It should be noted that, regardless of the quality of the article, this situation may have an impact on the results.

4. Conclusion

Finally, this study investigates the most referenced 100 publications on orthopedic and traumatology in which the first authors were Turkish and the first authors' institutions were in Turkey and presents an

analysis of orthopedic studies published in the last 30 years. Changes and advancements in orthopedic surgery continue to pique interest. Unknown or unmeasurable factors like internet search algorithms, social media, and alt-metrics may have influenced the current citation rank and may continue to do so in the future. Because of the unique results or conclusion of that particular study, the most referenced publications may have prompted future research on that issue. It will be fascinating to see which pieces survive in the following ten years.

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