European Journal of Therapeutics DOI: 10.5152/eurjther.2021.20108

Original Article

Bibliometric Analysis of Turkey's Research Activity in the *Anatomy and Morphology* Category from the Web of Science Database

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ABSTRACT

Objective: The measurement of international publication activities is one of the essential indicators used to evaluate the scientific development level of countries. Although many studies are using the bibliometric method in the literature, it is seen that there are very few bibliometric studies in the field of anatomy. This study aimed to analyze the articles bibliometrically which conducted by researchers at institutions from Turkey and indexed in Science Citation Index Expanded (SCI-E) of the Web of Science database in the category of *Anatomy and Morphology*.

Materials and Methods: According to 2019 data, journals in the *Anatomy and Morphology* category and indexed in the SCI-E were determined. Publications from Turkey that were published in these journals was determined. The full-texts of these articles were examined, and study types were defined. Also, VOSviewer software was used to create a collaboration and word co-occurrence network.

Results: It was determined that there were 48,002 publications in 21 journals. It was found that 1,461 publications (3.04%) have at least one author from Turkey. The total number of citations was 11,728 for these publications. The average number of citations was 8.02 ± 11.95. The radiological studies have increased statistically more than both experimental animal and cadaveric studies by years. In addition, it has been determined that the total number of articles, especially the radiological studies, has increased significantly over the years.

Conclusion: The increase in the number of scientific studies in the field of anatomy is important in terms of the contribution of Turkey to literature in this area.

Keywords: Anatomy, bibliometric analysis, Web of Science

INTRODUCTION

Anatomy, one of the oldest known medical sciences, is a discipline that forms the basis of medical education and is an integral part of the medical curriculum.[1] It is thought that the first studies in the field of anatomy date back to the 19th century B.C. These studies started with animal dissections.[2] Undoubtedly, cadavers have been the essential teaching method in anatomy education in this long process. As a matter of fact, many scientists who have made significant contributions to anatomy owe these contributions to cadaveric studies.[3] On the other hand, with the development of medical imaging methods over time, radiological and clinical studies also have been added to cadaver dissection studies, which are still valuable and relevant.[4]

Because countless scientists contributed to the development of anatomy over this long period, the highly detailed knowledge of anatomy in today's medical literature has emerged.[1,5] For this reason, every study in the field of anatomy is exceptionally essential in terms of its contribution to the field.

Bibliometry (*βιβλίο: Book, μέτρηση: Measurement*) is a Greek origin word.[6] It is a kind of research approach used to measure and analyze the productivity of the literature in a particular area or journal. Today, many disciplines use bibliometric analysis to examine the impact of their field.[7] The bibliometric analysis includes features such as the article type, content of article, number of citations to the article, number of authors, the affiliation of authors, index, and category of the journals.[7–9] Although many studies are using the bibliometric method in the literature, it is seen that there are very few bibliometric studies in the field of anatomy.[5,10,11]

The Web of Science (WoS) database is one of the widely used databases in bibliometric research. The most valid measure of the quality of scientific publications and the productivity of researchers at the international level are the number of articles

How to cite: Bahşi İ, Adanır SS, Kervancıoğlu P, Orhan M, Govsa F. Bibliometric Analysis of Turkey's Research Activity in the *Anatomy and Morphology* Category from the Web of Science Database. *Eur J Ther* 2021; 27(4): 268–280.

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Received: November 4, 2020 • **Accepted:** March 29, 2021

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Table 1. List of Journals in the *Anatomy and Morphology* Category of the WoS Database Indexed in SCI-E

Journal Name	Abbreviated Journal Name	ISSN	Publication Period in the WoS Database
Surgical and Radiologic Anatomy	Surg Radiol Anat	0930-1038	1986-present
International Journal of Morphology	Int J Morphol	0717-9502	2008-present
Clinical Anatomy	Clin Anat	0897-3806	1997-present
Folia Morphologica	Folia Morphol	0015-5659	2009-present
Microscopy Research and Technique	Microsc Res Tech	1059-910X	1992-present
Anatomia Histologia Embryologia	Anat Histol Embryol	0340-2096	1992-present
Annals of Anatomy-Anatomischer Anzeiger	Ann Anat	0940-9602	1992-present
Journal of Anatomy	J Anat	0021-8782	1980-present
Applied Immunohistochemistry and Molecular Morphology	Appl Immunohisto M M	1541-2016	1994-present
Anatomical Science International	Anat Sci Int	1447-6959	2006-present
Journal of The Anatomical Society of India	J Anat Soc India	0003-2778	2008-present
Tissue and Cell	Tissue Cell	0040-8166	1980-present
Anatomical Record-Advances in Integrative Anatomy and Evolutionary Biology	Anat Rec	1932-8486	2007-present
Acta Zoologica	Acta Zool	0001-7272	1980-present
Cells Tissues Organs	Cells Tissues Organs	1422-6405	1999-present
Journal of Morphology	J Morphol	0362-2525	1980-present
Brain Structure and Function	Brain Struct Funct	1863-2653	2007-present
Developmental Dynamics	Dev Dyn	1058-8388	1992-present
Zoomorphology	Zoomorphology	0720-213X	1980-present
Frontiers in Neuroanatomy	Front Neuroanat	1662-5129	2007-present
Advances in Anatomy Embryology and Cell Biology	Adv Anat Embryol Cell Biol	0301-5556	1982-present

published in journals in the WoS database and the number of citations of these articles. All these criteria can be interpreted as a quality indicator and used to evaluate institutions, academicians, and even countries.[12] On the other hand, the measurement of international publication activities is one of the essential indicators used to evaluate the scientific development level of countries. In the WoS database, there are articles indexed in the Science Citation Index Expanded (SCI-E) since 1980. In 2019, journals indexed in SCI-E were classified into 178 different categories. One of these categories is *Anatomy and Morphology*.[13] To the best of our knowledge, in the literature, there is no bibliometric study that evaluated the *Anatomy and Morphology* category. We think that this study is the first study to examine the *Anatomy and Morphology* category in the WoS database studies on a country basis bibliometric.

Main Points

- It has been found that the total number of articles in the field of *Anatomy and Morphology*, especially radiological studies, has increased significantly over the years.
- With this study to examine the articles originated from Turkey in the anatomy field and determination of research trends of authors is thought to be guiding the work to be done in this area.

This study aimed to assess the bibliometric characteristics of related articles in the *Anatomy and Morphology* category, which indexed in SCI-E of the WoS database by researchers from Turkish institutions.

METHODS

According to 2019 data, in the WoS database, journals in the *Anatomy and Morphology* category and indexed in the SCI-E

were determined using Clarivate Analytics' Journal Citation Reports database. The names, abbreviated names, publication periods, and ISSN numbers of these journals were recorded (Table 1). The WoS database was searched for each journal with ISSN numbers by using the advanced search. Also, it has been taken into consideration that there may be changes in ISSN over the years, so another search also was done with the journal names. Articles published from January 1, 2020, onwards, it was excluded as any capture from that period forward would include incomplete bibliometric data for that year. In the WoS options, all categories such as Conference Proceedings Citation Index-Science, Arts and Humanities Citation Index, Social Sciences Citation Index, and Book Citation Index-Science were excluded, except for SCI-E. Afterward, meeting abstract, proceedings paper, early access, reprint, book series titles, and conference titles were excluded. Finally, in the Countries/Regions option, Turkey was chosen, and articles were determined. For each publication, all information relevant to the analysis was exported to Microsoft Excel and a bibliography manager (EndNote Desktop). Concretely this was: Author(s), Title, Source, Addresses, Times Cited, and Keywords. Since the document type in WoS is not detailed enough to evaluate the output of different types of papers, each article was separately examined while evaluating the document types. Therefore, the full texts of the articles were examined, and study types were defined as per the National Library of Medicine's MeSH database[14] and the evaluated journals. Also, VOSviewer software (version 1.6.15) was used to create a collaboration and word co-occurrence network.[15]

Statistical Analysis

Descriptive statistics are given as mean ± standard deviation for numerical variables and number and percentage values for categorical variables. The relations between numeric variables were tested by using the Pearson correlation coefficient, and study designs were compared with years using Tamhane Post Hoc Tests. SPSS (IBM SPSS Corp.; Armonk, NY, USA) for Windows version 22.0 package software was used for statistical analysis, and $P < .05$ was considered statistically significant.

RESULTS

The journals listed in the *Anatomy and Morphology* category of the WoS database and all the publications, publications remaining after exclusion criteria, and publications from Turkey that were published in these journals, are shown in Table 2. It was determined that there were 48,002 publications in these 21 journals. It was found that 1,461 publications (3.04%) which have at least one author from Turkey and published in 20 different journals (Figure 1). In one of the journals (*Adv Anat Embryol Cell Biol*), there is no publication from Turkey. When examined with the VOSviewer software, it was determined that there was a total of 25,979 different words in the titles and abstracts of 1,461 publications (Figure 2). The colors used in Figure 2 indicate words within the same topic cluster and distinguishing three colored clusters. In spite of the WoS database started indexing SCI-E journals since 1980, it was seen that most of these journals started to be indexed in the following years. Although we examine the 40 years between 1980 and 2019, our results obtained belong to the articles published in 1983-2019. However, in the first year (1983), only one document was published, and this is the same for 1986, 1989, and 1990. Besides, it was determined that there was no publication in 1984, 1985, 1987, and 1988. The distribution of all publications by years is shown in Figure 3. The articles were found to be published most in 2019 (n = 138, 9.45%). Furthermore, it was determined that financial support was received from various institutions for 232 out of 1,461 publications (15.88%). These supports were mostly given by TUBITAK (in 25 publications).

Table 2. The Total Number of Articles in 21 Journals and the Number of Articles That Afliate to Turkey*

	Publication Numbers of the Journals	
Journal	**Total**	**From Turkey (%)**
Surg Radiol Anat	3,556	431 (12.12%)
Int J Morphol	2,714	181 (6.67%)
Clin Anat	3,099	160 (5.16%)
Anat Histol Embryol	2,160	148 (6.85%)
Folia Morphol	841	149 (17.72%)
Microsc Res Tech	4,589	102 (2.22%)
Ann Anat	2,125	71 (3.34%)
J Anat	4,943	34 (0.69%)
Appl Immunohisto M M	1,900	35 (1.84%)
Anat Sci Int	604	28 (4.64%)
J Anat Soc India	500	28 (5.60%)
Tissue Cell	2,677	27 (1.01%)
Anat Rec	2,526	25 (0.99%)
Acta Zool	1,296	12 (0.93%)
Cells Tissues Organs	1,224	11 (0.90%)
J Morphol	3,998	5 (0.13%)
Brain Struct Funct	1,838	5 (0.27%)
Dev Dyn	5,088	4 (0.08%)
Zoomorphology	1,152	4 (0.35%)
Front Neuroanat	1,067	1 (0.09%)
Adv Anat Embryol Cell Biol	105	0 (0.00%)
Total	**48,002**	**1,461 (3.04%)**

*The data belong to 21 journals in the Anatomy and Morphology category.

While the maximum number of publications (n = 431/1,461, 29.50%) from Turkey were published in *Surg Radiol Anat*, the journal with the highest rate of publications from Turkey was

Figure 1. Distribution of publications from Turkey by the journals.

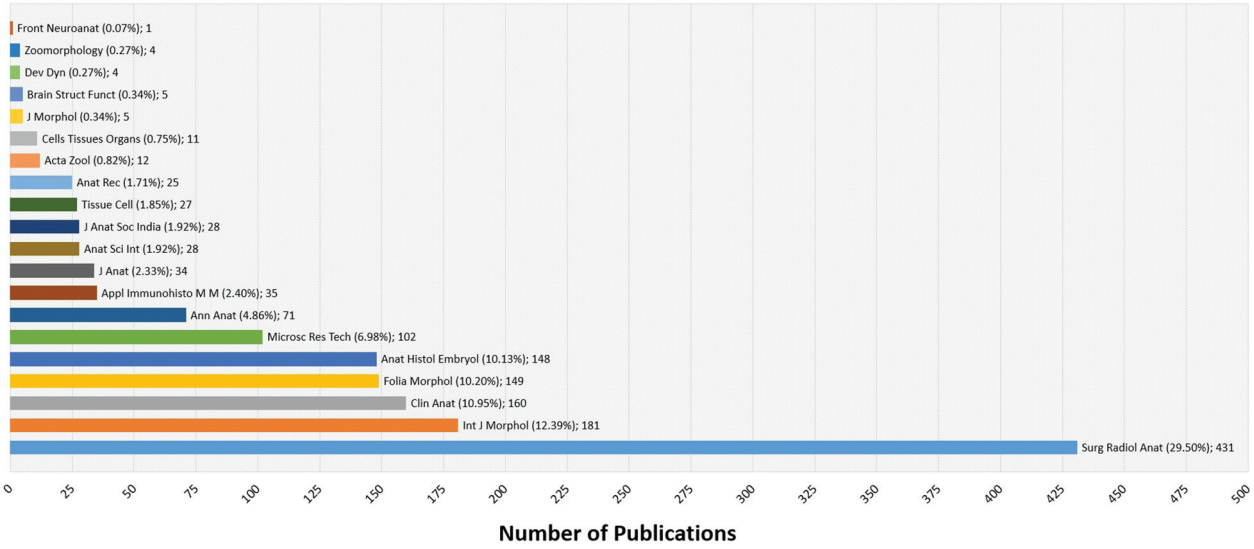


Figure 2. Word co-occurrence network built using words present in titles and abstracts of publications.

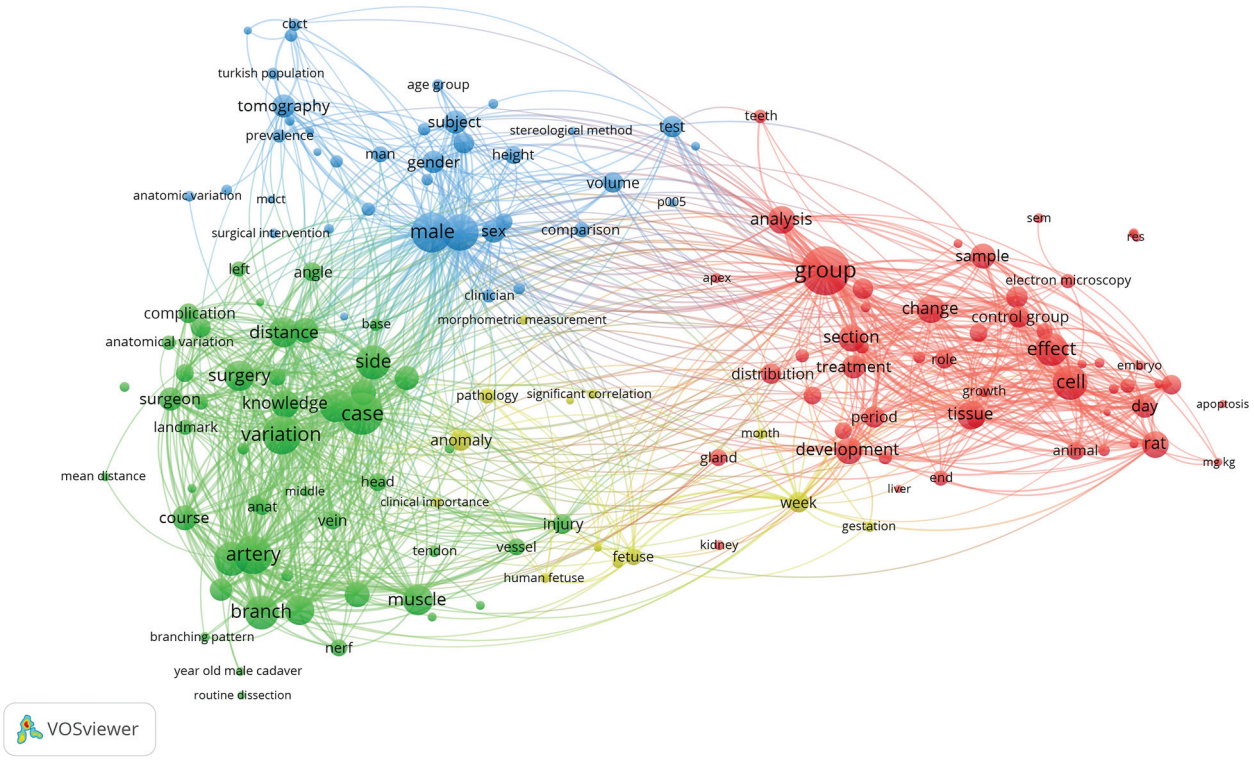
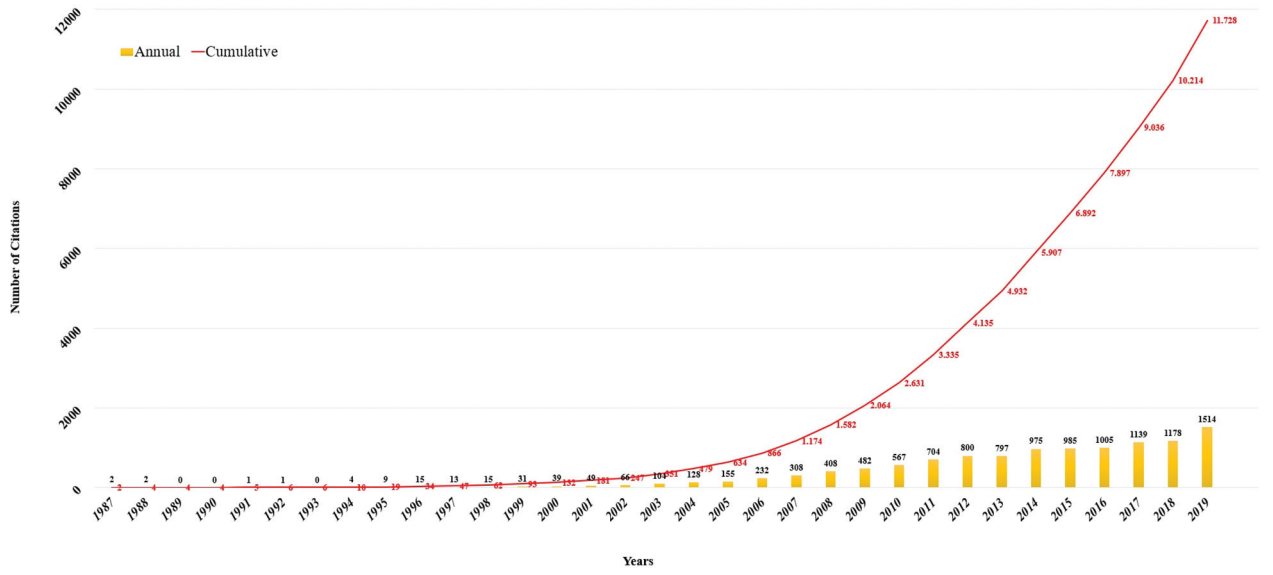


Figure 3. Distribution of published articles by the years.



Folia Morph (n = 149/841, 17.72%) when the journals were evaluated separately.

When the institutions according to the affiliations of authors were examined, it was determined that there are nearly 200 institutions. The 25 institutions with the highest number of publications are shown in Table 3. In addition, Figure 4 presents these publications' collaboration map of universities in Turkey.

While all author(s) were from Turkey in 1,275 out of 1,461 publications (87.27%), the authors from Turkey were collaborating with the researchers from 46 different countries in 186 out of 1,461 publications (12.73%). The USA was leading these countries with 69 publications. The collaboration map of the publications between Turkey and other countries is shown in Figure 5.

The total number of citations was 11,728 for all publications. The average number of citations was 8.02 ± 11.95 (min: 0, max: 127). At least one citation was made to 1,179 out of 1,461 publications (80.70%). When the number of citations was examined by years (Figure 6), it was seen that most citations were made in 2019. The H-index of 1,461 publications was 41. The 25 most cited publications are shown in Table 4.[16–40] It was seen that 11 of these 25 publications (44%); in other words, the vast majority of them were published in the *Surg Radiol Anat*.

The study types and the average number of citations according to the study types are given in Table 5. It was determined that 1,233 of them (84.39%) were original articles, and 184 of them (12.59%) were case reports. It was found that the most cited publications type was review. On the other hand, subtypes of the original articles and the case reports are detected and given in Table 6. In addition, the three study types with the highest number of publications were compared by years, a statistically significant difference was found (Table 7). Accordingly, the radiological studies have increased statistically more than both experimental animal and cadaveric studies by years (Tamhane post hoc test: $P = .001$ and $P = .001$). Furthermore, experimental animal studies have also increased statistically more than cadaveric studies by years (Tamhane post hoc test: $P = .001$). While cadaver studies have decreased in recent years, experimental animal studies and especially radiological studies have increased (Figure 7). It was determined that there was a very strong positive correlation between the number of publications and the years ($P = .001$, $r = .939$). Although it was found that there were very strong positive correlations between experimental animal studies and years ($P = .001$, $r = .838$) and radiological studies and years ($P = .001$, $r = .906$), there was no correlation between cadaveric studies and years ($P = .199$).

DISCUSSION

Bibliometric studies allow us to measure the productivity and effectiveness of a field in the literature.[7] The number of publications of any institutions or countries in the WoS database and the number of citations of these publications can be interpreted as a quality indicator.[12] Although there are numerous articles that evaluated the bibliometry for different specialties and subspecialties, we were unable to find a study about bibliometric analysis of the *Anatomy and Morphology* category in the WoS database in the literature.

On the other hand, Tellioglu et al.[41] reported that most of the publications of Turkish Anatomists were published in *Surg Radiol Anat* between 2000 and 2014, with a rate of 27%. Similarly, Gürses et al.[42] examined the publication rates of oral and poster presentations in 2007 and 2008 national anatomy congresses in Turkey and determined that the most preferred

Table 3. The 25 Institutions With the Highest Number of Publications

Institutions	N (%)
Ankara University	126 (8.62%)
Hacettepe University	107 (7.32%)
Dicle University	101 (6.91%)
Ege University	79 (5.41%)
Gülhane Military Medical Academy	73 (5%)
Ondokuz Mayıs University	63 (4.31%)
Istanbul University	60 (4.11%)
Gazi University	58 (3.97%)
Selcuk University	56 (3.83%)
Erciyes University	55 (3.76%)
Akdeniz University	46 (3.15%)
Suleyman Demirel University	43 (2.94%)
Mersin University	41 (2.81%)
Afyon Kocatepe University	40 (2.74%)
Adnan Menderes University	39 (2.67%)
Dokuz Eylul University	39 (2.67%)
Kirikkale University	39 (2.67%)
Cumhuriyet University	38 (2.6%)
Uludag University	36 (2.46%)
Atatürk University	32 (2.19%)
Cukurova University	30 (2.05%)
Gaziantep University	27 (1.85%)
Baskent University	25 (1.71%)
Marmara University	25 (1.71%)
Kafkas University	21 (1.44%)

journal is *Surg Radiol Anat*. In this study, it was seen that the most preferred journal was *Surg Radiol Anat*, similar to these two studies.[41,42]

In the study conducted by Petekkaya,[10] it was reported that the articles in the anatomy field showed a significant increase, especially between 1997 and 2010. In the present study, it was determined that there was a great positive relationship between the years and the number of publications annually. Many reasons, such as an increase in the number of academicians, the number of medical faculties, and changes in the academic promotion criteria in Turkey in the anatomy field, maybe the reasons for this situation.

Although it is considered as the most reliable database, it is known that document types are not sufficient in WoS database.[43] As a matter of fact, when the journals in the *Anatomy and Morphology* category are examined in the WoS database, it is determined that there is no study design as a case report. On the other hand, it is seen that some studies published as an original article in journals in the *Anatomy and Morphology* category, they are scanned as reviews in the WoS database.[44,45] The criteria of the WoS database in this regard are as follows; any article containing more than 100 references and articles whose titles contain the word "review" or "overview" are coded as a review.[46] For this reason, the full texts of 1,461 publications were examined in order to obtain the more precise information and to classify the publications in detail. These publications were classified according to both study types, which were defined by the National Library of Medicine's MeSH database[14] and categories in the journals evaluated.

It is known that the reviews had higher average numbers of citations than original articles,[46] as determined in this study. Notwithstanding, it is noteworthy that there are very few numbers of reviews in the field of anatomy (1.03%). Kramer et al.[47] reported this rate as 13.2% in the bibliometric analysis of traumatic dental injuries in the primary dentition. Hafeez et al.[48] stated this rate as 6.8% in the bibliometric analysis of six major psychiatry journals. On the other hand, the rate of the case reports was found as 33.6% in the study of Kramer et al.[47] and as 4.8% in the study of Hafez et al.[48] In this study, the rate of case reports was found to be 12.59%. Differences in these rates suggest that the distribution of study designs varies for different areas.

Petekkaya[10] reported that the majority of the top 100 most cited articles in the anatomy field consisted of experimental studies. In this study, contrary to Petekkaya,[10] it was found that most of the studies were radiological anatomy studies. Undoubtedly, there are many reasons for this situation. The probable reason for this situation is the increase in radiological anatomy studies, especially in recent years. In addition, in recent years, the importance and place of cadavers in the field of medicine have become a subject of discussion.[4] The number of cadaver studies has not increased, maybe due to the number of people donating their bodies being very low in many countries, including Turkey, while the development of technology has led to an increase in radiologic studies. Although cadaver studies are examined by years, it is observed that there is no correlation. However, it is seen that the highest number of studies was between 2004 and 2010 and gradually decreased in the following years. Despite the increase in radiologic and experimental animal studies, we think that this decline in cadaver studies is alarming.

On the other hand, in Turkey, the establishment of the universities that have the highest number of publications in *Anatomy and Morphology* category generally is known to be older than other universities. In addition, it has been observed that these universities have more publication requirements for academic assignment criteria.[49] The first two universities, Ankara University and Hacettepe University, with the highest number of publications of this field are the most prominent examples of this situation.

Figure 4. Collaboration map of universities in Turkey.

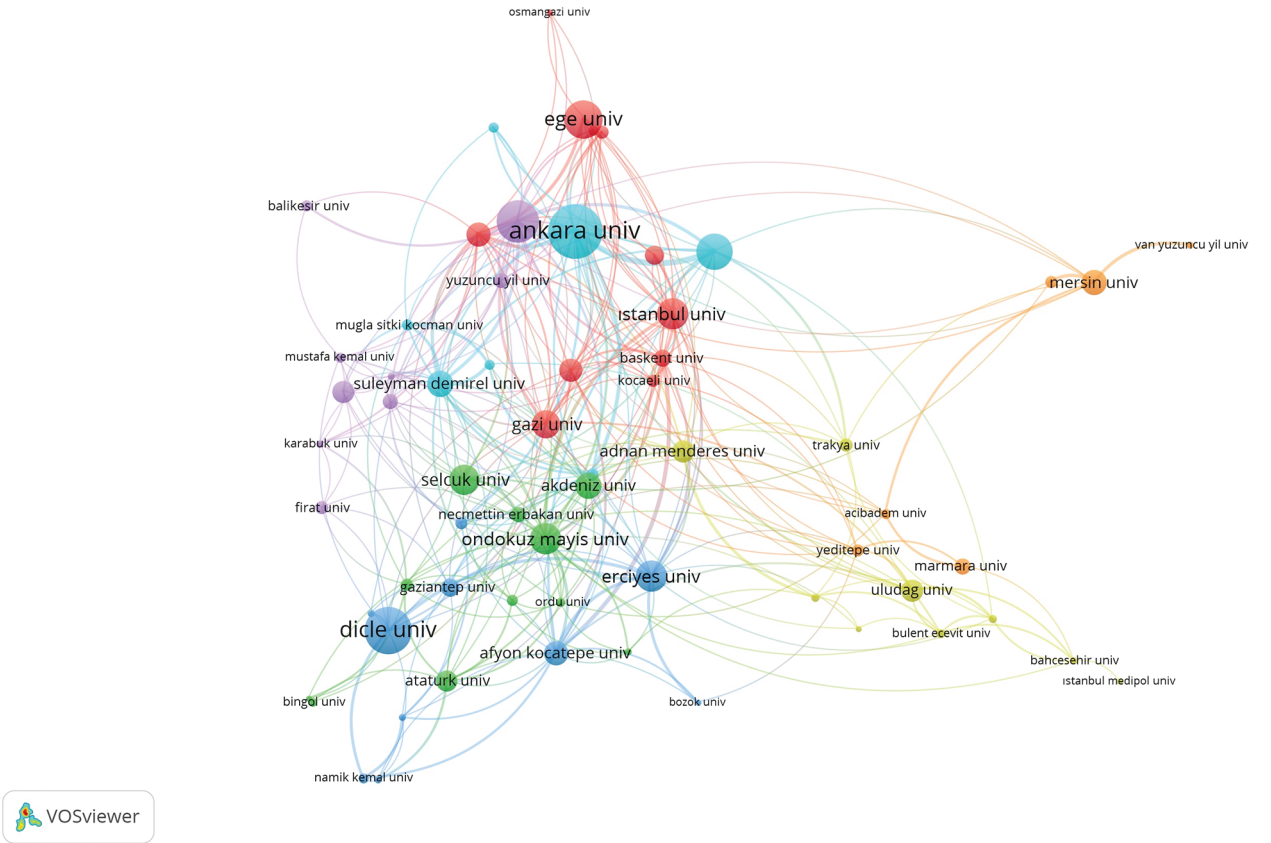


Figure 5. Collaboration map in the publications with Turkey and other countries.

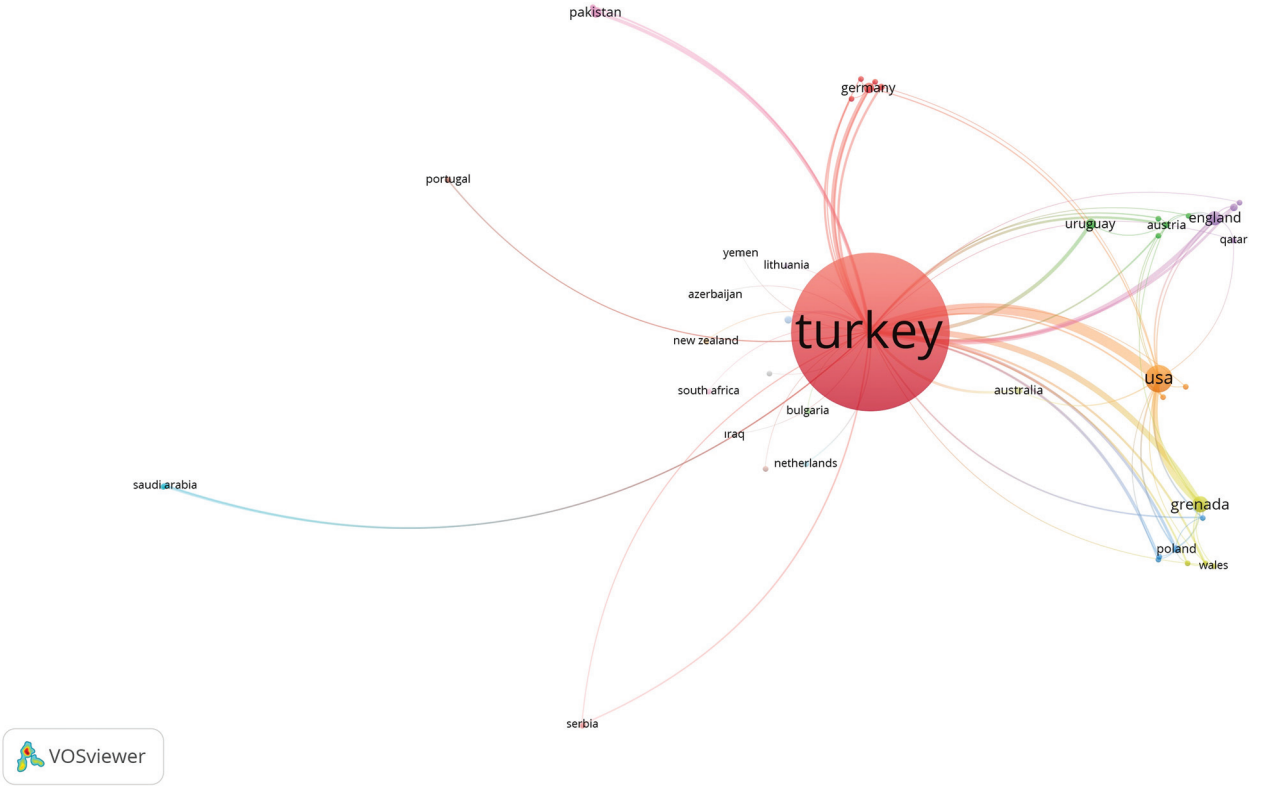


Figure 6. Distribution of citations by years.

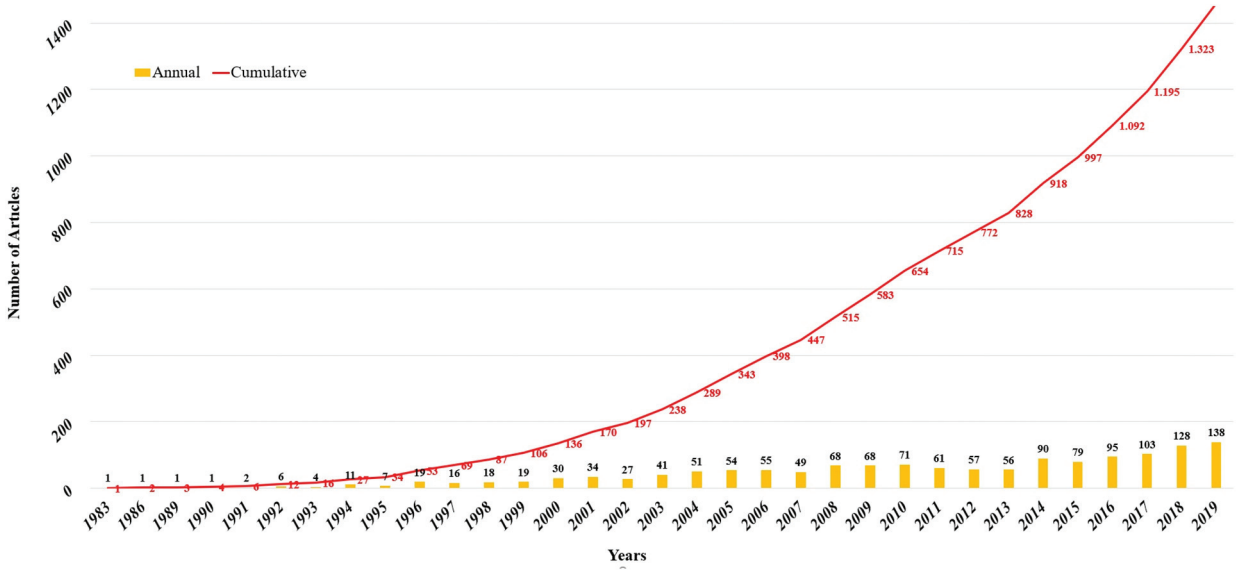


Table 4. Top 25 Cited Publications in the *Anatomy and Morphology* Category*

	Author(s)	Title	Journal	Year	NC	PY
1	Kargi et al.[25]	The diagnostic value of TTF-1, CK 5/6, and p63 immunostaining in classication of lung carcinomas	Appl Immuno-histo M M	2007	127	9.77
2	Pinar and Govsa[32]	Anatomy of the supercial temporal artery and its branches: Its importance for surgery	Surg Radiol Anat	2006	111	7.93
3	Vilhelmsen et al.[39]	Host location and oviposition in a basal group of parasitic wasps: The subgenual organ, ovipositor apparatus and associated structures in the Orussidae (Hymenoptera, Insecta)				
		Zoomorphology	2001	92		4.84
4	Unal et al.[38]	Risky anatomic variations of sphenoid sinus for surgery	Surg Radiol Anat	2006	87	6.21
5	Sanli et al.[34]	Stature estimation based on hand length and foot length	Clin Anat	2005	85	5.67
6	Ercan et al.[21]	Facial asymmetry in young healthy subjects evaluated by statistical shape analysis	J Anat	2008	78	6.50
7	Demir et al.[19]	Classication of human placental stem villi: Review of structural and functional aspects	Microsc Res Tech	1997	77	3.35
8	Pinar et al.[31]	Anatomic study of the blood supply of perioral region	Clin Anat	2005	70	4.67
9	Saylam et al.[35]	Reduced hippocampal volume in drug-free depressed patients	Surg Radiol Anat	2006	69	4.93
10	Durgun et al.[20]	Evaluation by angiography of the lateral dominance of the drainage of the dural venous sinuses	Surg Radiol Anat	1993	64	2.37

Table 4. Top 25 Cited Publications in the *Anatomy and Morphology* Category* (Continued)

	Author(s)	Title	Journal	Year	NC	PY
11	Tekdemir et al.[37]	A clinico-anatomic study of the auricular branch of the vagus nerve and Arnold's ear-cough reex	Surg Radiol Anat	1998	62	2.82
12	Karakas et al.[24]	Morphometric measurements from various reference points in the orbit of male Caucasians	Surg Radiol Anat	2003	62	3.65
13	Kalender et al.[23]	Evaluation of the mental foramen and accessory mental foramen in Turkish patients using cone-beam computed tomography images reconstructed from a volumetric rendering program)	Clin Anat	2012	61	7.63
14	Altunkaynak et al.[16]	The effects of high-fat diet on the renal structure and morphometric parametric of kidneys in rats	J Anat	2008	60	5.00
15	Coskun et al.[18]	Incidence of accessory ossicles and sesamoid bones in the feet: A radiographic study of the Turkish subjects	Surg Radiol Anat	2009	60	5.45
16	Huijing et al.[22]	Effects of knee joint angle on global and local strains within human triceps surae muscle: MRI analysis indicating in vivo myofascial force transmission between synergistic muscles	Surg Radiol Anat	2011	55	6.11
17	Kiray et al.[27]	Surgical anatomy of the cervical sympathetic trunk	Clin Anat	2005	55	3.67
18	Ozturk et al.[30]	Measurement of the distance and angle between the aorta and superior mesenteric artery: Normal values in different BMI categories	Surg Radiol Anat	2007	54	4.15
19	Orhan et al.[28]	Evaluation of bid mandibular canals with cone-beam computed tomography in a Turkish adult population: A retrospective study	Surg Radiol Anat	2011	52	5.78
20	Cavdar et al.[17]	The pathways connecting the hippocampal formation, the thalamic reuniens nucleus and the thalamic reticular nucleus in the rat	J Anat	2008	51	4.25
21	Kilic et al.[26]	The position of the mandibular canal and histologic feature of the inferior alveolar nerve	Clin Anat	2010	51	5.10
22	Zumre et al.[40]	Investigation of the bifurcation level of the common carotid artery and variations of the branches of the external carotid artery in human fetuses	Ann Anat	2005	50	3.33
23	Ozdogmus et al.[29]	Connections between the facial, vestibular and cochlear nerve bundles within the internal auditory canal	J Anat	2004	50	3.13
24	Taskaya-Yilmaz et al.[36]	A possible etiology of the internal derangement of the temporomandibular joint based on the MRI observations of the lateral pterygoid muscle	Surg Radiol Anat	2005	48	3.20
25	Safak et al.[33]	The thickness of the ligamentum avum in relation to age and gender	Clin Anat	2010	48	4.80

*Citations before January 1, 2020 were examined, NC, Number of Citations, PY, Average Citations Per Year.

Table 5. Study Types and Citation Averages by the Study Types

Study Type	n (%)	Average Number of Citations (Mean ± SD)
Original Article	1,233 (84.39%)	7.44 ± 11.38
Case Report(s)	184 (12.59%)	6.66 ± 7.09
Letter to the Editor	24 (1.64%)	0.67 ± 1.49
Review	15 (1.03%)	16 ± 20.91
Clinical Vignette	3 (0.21%)	15 ± 4.58
Viewpoint*	1 (0.07%)	38
Short Report*	1 (0.07%)	12
Total	1,461	8.02 ± 11.95

n, the total number of articles; SD, standard deviation.
*It was determined that there is only one article in viewpoint and short report article type.

Table 6. Distribution of Original Articles and Case Reports by Study Design

Study Design	Original Articles, n (%)	Case Reports, n (%)	Both of These Types, n (%)
Radiological Study	278 (22.55%)	58 (31.52%)	336 (23.71%)
Experimental Animal Study	316 (25.63%)	2 (1.09%)	318 (22.44%)
Cadaveric Study	173 (14.03%)	109 (59.24%)	282 (19.90%)
Histological Study	189 (15.33%)		189 (13.34%)
Experimental Study	81 (6.57%)		81 (5.72%)
Fetus Study	72 (5.84%)	2 (1.09%)	74 (5.22%)
Dry Bone Study	44 (3.57%)	2 (1.09%)	46 (3.25%)
Autopsy Study	6 (0.49%)	3 (1.63%)	9 (0.64%)
Clinical Study		8 (4.35%)	8 (0.56%)
Dry Bone and Cadaveric Study	7 (0.57%)		7 (0.49%)
History of Anatomy	6 (0.49%)		6 (0.42%)
Cadaveric and Radiologic Study	5 (0.41%)		5 (0.35%)
Teaching Anatomy	5 (0.41%)		5 (0.35%)
Dry Bone and Radiologic Study	4 (0.32%)		4 (0.28%)
Dry Bone and Radiologic and Cadaveric Study	2 (0.16%)		2 (0.14%)
Cadaver and in vivo	2 (0.16%)		2 (0.14%)
Fetus and Cadaveric	1 (0.08%)		1 (0.07%)
Fetus and Radiologic	1 (0.08%)		1 (0.07%)

Table 6. Distribution of Original Articles and Case Reports by Study Design (Continued)

Study Design	Original Articles, n (%)	Case Reports, n (%)	Both of These Types, n (%)
Other Studies*	41 (3.33%)		41 (2.89%)
Total	**1,233 (100%)**	**184 (100%)**	**1,417 (100%)**

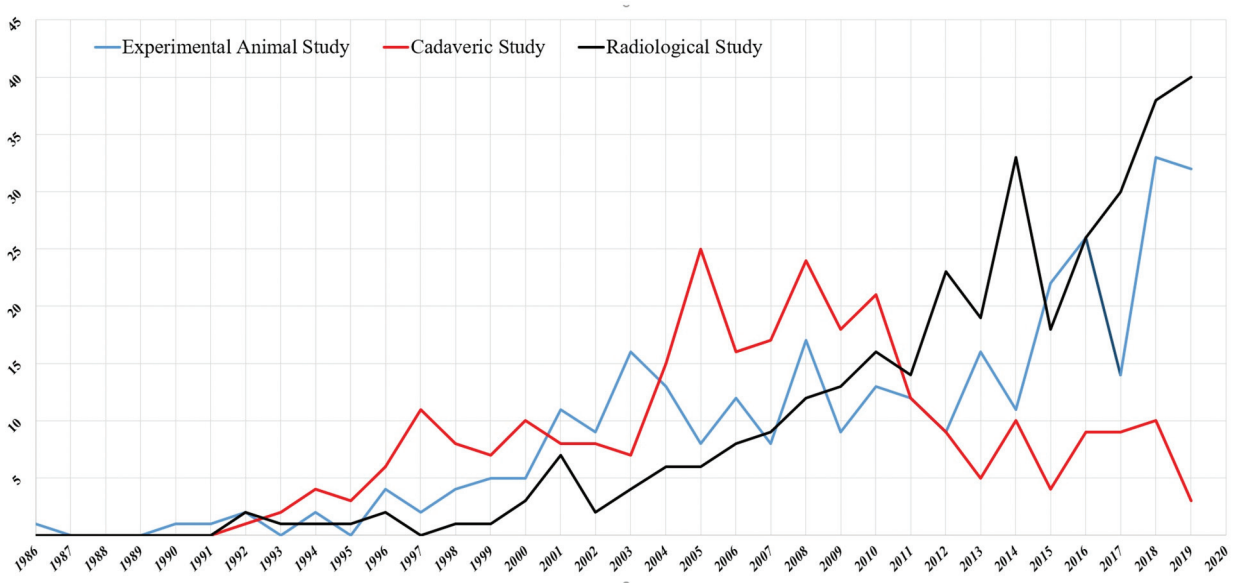
n, the total number of articles; SD, standard deviation.
*Other studies include studies in which new methods and approaches are introduced.

Table 7. Multiple Comparison of the Study Designs by Tamhane Post Hoc Tests

			95% Confidence Interval		
Study Design (I)	**Study Design (J)**	**Mean Difference (I-J)**	**Lower Bound**	**Upper Bound**	*P*
Experimental Animal Study	Cadaveric Study	3.73	2.43	5.02	.001*
	Radiological Study	−2.29	−3.49	−1.09	.001*
Cadaveric Study	Experimental Animal Study	−3.73	−5.02	−2.43	.001*
	Radiological Study	−6.02	−7.17	−4.87	.001*
Radiological Study	Experimental Animal Study	2.29	1.09	3.49	.001*
	Cadaveric Study	6.02	4.87	7.17	.001*

*Significant difference ($P < .05$).

Figure 7. Distribution of the radiological, experimental animal and cadaveric studies by years.



Limitations of This Study

Although the articles in the WoS database published before 2019 were scanned, the journals that were not active in 2019 could not be included in the study due to the inaccessibility of current data about these journals. Another limitation of this study is that the scanned 21 journals in the *Anatomy and Morphology* category in the Web of Science database published not only anatomical studies but also studies from the other fields. In fact, there were publications in the field of pathology and zoology in the first 25 articles with the most citations. The reason for this is that the types of articles accepted by some of these journals were from different scientific fields. Despite this limitation, we believe that the findings obtained in this study will be very useful in the field of anatomy.

CONCLUSIONS

A large amount of the articles conducted by researchers at institutions from Turkey and indexed in SCI-E of the WoS database in the category of *Anatomy and Morphology* were published in *Surg Radiol Anat*. In addition, it has been determined that the total number of articles, especially the radiological studies, has increased significantly over the years. The increase in the number of scientific studies in the field of anatomy is important in terms of the contribution of Turkey to literature in this area. With this study to examine the articles originated from Turkey in the anatomy field and determination of research trends of authors is thought to be guiding the work to be done in this area.

Ethics Committee Approval: Ethics committee approval is not required for this bibliometric study.

Informed Consent: N/A

Peer-review: Externally peer-reviewed.

Author Contributions: Concept - I.B., S.S.A., P.K, M.O., F.G.; Supervision - I.B., S.S.A., P.K, M.O., F.G.; Resource - I.B., S.S.A., P.K, M.O., F.G.; Materials - I.B., S.S.A., P.K, M.O., F.G.; Data Collection and/or Processing - I.B., S.S.A., P.K, M.O., F.G.; Analysis and/or Interpretation - I.B., S.S.A., P.K, M.O., F.G.; Literature Search - I.B., S.S.A., P.K, M.O., F.G.; Writing - I.B., S.S.A., P.K, M.O., F.G.; Critical Reviews - I.B., S.S.A., P.K, M.O., F.G.

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

Financial Disclosure: The authors declared that this study has received no financial support.

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