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Turkish uveal melanoma research: A bibliometric analysis (1987–2024)

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Abstract

Purpose: The purpose of the study is to conduct a comprehensive bibliometric analysis of uveal melanoma (UM) research with a focus on Turkish contributions in both national and international literature.

Methods: A search, including Web of Science (WoS) Core Collection, Scopus, Turkish Database, and gray literature, including national thesis and TUBITAK project databases, was conducted without time limitation. Documents focused on UM research and had at least one author with a Turkish institution affiliation were included. Data were cleaned and analyzed using bibliometric tools, including Open Refine and VOSviewer. Bibliometric data such as the number of publications, journals, authors, h-index, collaboration patterns, co-occurrence of keywords, citations, and the growth trends of publications were analyzed.

Results: The oldest and newest documents found were between 1987 and 2024. A total of 113 international (97 publications from WoS and 16 from Scopus) and 26 national publications (Turkish index) were included. The most common document type was the original research article (n=89, 78.76%) in international literature. The most represented journal was the *Turkish Journal of Ophthalmology* with (n=12, 10.62%) publications. A total of 16 theses with a publication rate of 56.5% were noted. Hacettepe University, Ankara University, and Istanbul University were the leading affiliations in UM research. Keyword analysis showed that Turkish UM research is predominantly focused on treatment modalities, and the genetic aspect of research is less represented.

Conclusion: Our results highlight the dominance of a few academic centers and researchers on UM research, modest contribution to international literature, and potential research progression areas such as basic science and genetics research.

Keywords: Bibliometrics; Türkiye; uveal neoplasms.

The iris, ciliary body, and choroid are parts of the uveal tract. The most prevalent intraocular cancer in adults is melanoma of these structures.^[1] The most commonly available treatments are enucleation, local control with brachytherapy, and stereotactic radiosurgery.^[2,3] However, approximately 50% of uveal melanoma (UM) patients will develop metastases within 15 years of their initial diagnosis

despite a high success rate in controlling the local disease with surgery or radiation therapy.^[4] With metastatic UM, most patients do not live longer than 12 months.^[5] Recent studies have shown that due to its immune-evading mechanisms, UM is thought to be highly immunogenic when its cells are dispersed systemically, making it susceptible to immune checkpoint inhibition thus increasing the survival rate.^[6,7]



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Bibliometric analysis is an effective tool for assessing the scientific outputs of various research components within a field such as institutions, authors, keywords, journals, and nations.^[8] It is distinct from other types of research in multiple ways. By employing quantitative techniques to examine the relationships between various scientific elements at the intellectual, social, and conceptual levels, bibliometric studies synthesize the bibliometric capital of a field. This contrasts with meta-analysis, which synthesizes empirical data by analyzing the direction, strength, and relationships of effects.^[9,10] Nonetheless, bibliometric analysis should be viewed as a complement to conventional approaches such as meta-analyses or systematic literature reviews, filling in gaps when discussing advancements in a field.^[9] Through bibliometric analysis, researchers can uncover discontinuities, patterns, and trends in the literature, guiding future research directions and ultimately leading to better patient care.

The literature currently appears to have limited bibliometric analysis of Turkish ophthalmology research. We found only one study specifically focused on Turkish ophthalmology research, and there were few articles showcasing the contributions of Turkish ophthalmologists to global research.^[11-13] This highlights a potential flaw in using bibliometric analysis to understand the dynamics of national ophthalmology research. With insights into publication trends, top contributors, focus areas, patterns of collaboration, and chances for strategic expansion, these analyses could be extremely beneficial to Turkish institutions and researchers.

The purpose of this study is to conduct a comprehensive bibliometric analysis of UM research with a focus on Turkish contributions, in both national and international literature. Noting the absence of previous bibliometric assessments in this area, we have included a broad spectrum of sources, covering international, national, and gray literature across broad time frames.

Materials and Methods

International Database Search Strategy

The Web of Science (WoS) Core Collection and Scopus were thoroughly searched. These databases were selected due to their comprehensive coverage of the peer-reviewed literature in different fields as well as the comprehensive bibliographic information required for bibliometric analysis.

Following this formula, the search query was created:

TS=(UM), TS=(Choroidal melanoma), TS=(Iris melanoma), TS=(Ciliary body melanoma), and CU=(Türkiye). The “TS” field tag searches in the title, abstract, and keywords of articles, whereas the “CU” field tag limits the results to articles with at least one author affiliated with an institution in Türkiye. To guarantee a thorough coverage of pertinent literature, neither time nor language constraints were used. The search was conducted on April 3, 2024, and the results including full records and cited references were exported in a tab-delimited file.

Scopus Search

Using the same criteria as for WoS, we also conducted a Scopus database search.

Turkish Database Search

We conducted a search using the TR index through the website (<https://trdizin.gov.tr/>) and searched the keywords “uvea melanomu, uveal melanom, koroid melanomu, koroidal melanom, iris melanomu, siliyer cisim melanomu, uveal melanoma, choroidal melanoma, iris melanoma, and ciliary body melanoma.”

Inclusion and Exclusion Criteria

The search results were narrowed down to include documents focused largely on UM research and had at least one author connected to a Turkish institution. Documents that were not exclusively about UM research, those with no Turkish affiliations, and those with Turkish affiliations but with studies primarily conducted outside of Türkiye were excluded. Based on the inclusion and exclusion criteria, two researchers independently screened the search results for eligibility; differences were settled by consensus and discussion. Detailed procedures for the enrolment and screening are illustrated in Figure 1.

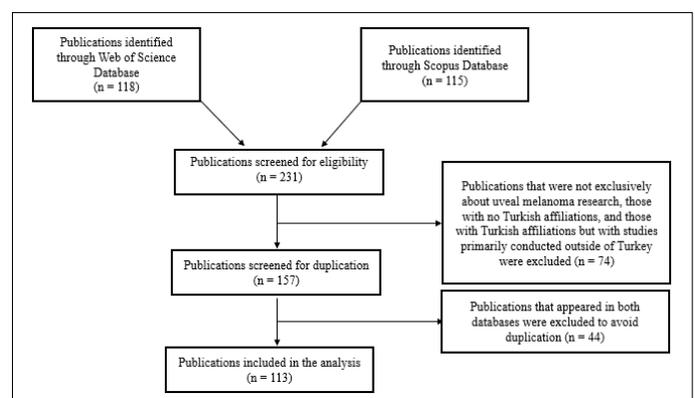


Fig. 1. Flow diagram of the inclusion process. The detailed process of searching and screening.

Data Merging, Cleaning, and Clustering

Open Refine (version 3.0.4) was used to merge and preprocess the WoS and Scopus-exported data and to guarantee the accuracy and consistency of data. The following procedures were conducted:

Harmonizing keywords: To facilitate accurate keyword analysis, various writing styles, abbreviations, and name changes over time were recognized and harmonized.

Author and affiliation clustering: To group together various name variations that belong to the same author and affiliation, Open Refine's clustering algorithms were utilized. By taking this step, author and affiliation name ambiguity was avoided and publications were appropriately attributed to authors and institutions.

Data Analysis

The WoS and Scopus analysis sections were used to record the names of journals, publication years, document types, authors, author affiliations, categories, and indexes. The full counting method was employed since most of the data could be categorized into multiple bins. Thus, the overall data percentage was higher than 100% in particular results. For citation analysis, since the citation sources of both WoS and Scopus were different, we preferred the WoS database which had more articles.

Growth Trends of Publications

To determine cumulative publications, we used the prediction model $f(x) = ax^3 + bx^2 + cx + d$ using Microsoft® Excel® for Microsoft 365. By doing so, we were able to forecast growth trends in publications in the field. The total number of publications per year is denoted by $f(x)$, where x stands for time (year).^[14]

Gray Literature

National Thesis Search

To identify theses related to UM and find the ones that have been published, we searched the Council of Higher Education Thesis Center's website (<https://tez.yok.gov.tr/>). We searched using the keywords "uveal melanomu, uveal melanom, koroid melanomu, koroidal melanom, iris melanomu, and siliyer cisim melanomu." The results were then cross-referenced with the TR index and other databases (PubMed, WoS, and Scopus) to determine which theses had been published as articles in peer-reviewed journals.

TUBITAK Project Search

We searched the TUBITAK project database using the keywords "uveal melanomu, uveal melanom, koroid

melanomu, koroidal melanom, iris melanomu, siliyer cisim melanomu, uveal melanoma, choroidal melanoma, iris melanoma, and ciliary body melanoma" to find relevant projects (<https://app.trdizin.gov.tr/search/projectSearch.xhtml>).

Visual Analysis

Maps on co-authorship, institutions, and keyword networks were created using VOSviewer (version 1.6.20). The author, institution, and keywords with the highest weights were recorded.

Results

WoS and Scopus Results

A total of 97 publications were retrieved from the WoS collection between 1992 and 2024. In addition, 16 publications were added from the Scopus search, which were not on the WoS list between 1987 and 2024. In a total of 113 documents, most of the publications were articles (n=89, 78.76%), followed by reviews (n=10, 8.85%), meeting abstracts (n=5, 4.42%), letters (n = 5, 4.42%), proceeding papers (n=3, 2.65%), book chapters (n=1, 0.88%), early access papers (n=1, 0.88%), and note (n=1, 0.88%).

In the dataset, there were 40 Turkish affiliations associated with the publications. The most prominent affiliations were Hacettepe University with 45 publications (39.82%), Ankara University with 27 publications (23.89%), Istanbul University with 11 publications (9.73%), and Istanbul University Cerrahpasa with 9 publications (7.96%).

The dataset included publications in four different languages: English, Turkish, French, and German. English was by far the most dominant language, with 99 publications, accounting for 87.61% of the total. Turkish followed with 11 publications, representing 9.73% of the dataset.

The top 10 most represented journals were the *Turkish Journal of Ophthalmology* with 12 publications (10.62%), *Eye* with 6 publications (5.31%), *Japanese Journal of Ophthalmology* with 6 publications (5.31%), *Journal of Retina Vitreus* with 4 publications (3.54%), *Melanoma Research* with 4 publications (3.54%), *International Journal of Radiation Oncology Biology Physic* with 3 publications (2.65%), *Middle East African Journal of Ophthalmology* with 3 publications (2.65%), *Ophthalmic Research* with 3 publications (2.65%), *Radiotherapy and Oncology* 3 publications (2.65%), *Retina The Journal of Retinal and Vitreous Disease* with 3 publications (2.65%), and *British Journal of Ophthalmology* with 2 publications (1.77%).

These top 10 journals collectively published 49 documents, accounting for almost half (41.57%) of the total publications. The top five most represented WoS categories were ophthalmology with 65 publications (68.42%), oncology with 18 publications (18.94%), radiology nuclear medicine medical imaging with 10 publications (10.52%), dermatology with 5 publications (5.26%), and medicine research experimental with 4 publications (4.21%).

The most represented index was the Science Citation Index Expanded, with 65 publications accounting for 68.42% of the total. This was followed by the Emerging Sources Citation Index with 28 publications (29.47%) and the Conference Proceedings Citation Index – Science with 6 publications (6.31%).

Result of Growth Trends of Publications

Based on the total number of publications over the previous two decades, publication trends for the next 5 years were estimated. It predicted accelerated growth in publication numbers. To match the predicted cumulative values from the model, an average of approximately 4.67 articles per year would be needed between 2024 and 2030 (Fig. 2).

Citation Report

The citation analysis of the 97 documents revealed a total of 636 citations, with an average of 6.69 citations per item. The h-index was 13. Three of the ten most cited articles came from international collaboration. Figure 3 shows publications and citations over time. Table 1 shows the top 10 most cited articles in WoS on UM research with our search criteria.

Turkish Database Result

The total publication number was 26 between 1995 and 2022. Total citation number was 7, with an average of 0.35 citations per item. The h-index was 1. The journal that published the most was MN Ophthalmology (n = 11, 42.3%), the author who contributed the most was Kaan Gündüz (Department of Ophthalmology, Ankara University) with five publications, and the most contributed affiliation with six documents was Ankara University.

Thesis Results

A total of 16 theses were evaluated between 2021 and 2024. Five of the theses (31.25%) were dated 2020 and later. The department with the highest number of theses was the Hacettepe University Ophthalmology Department, with 8 theses (50%). Ophthalmology departments collectively accounted for 10 theses (62.5%). There has been a total of 10 publications, 7 of 16 theses (43.75%) (two different publications from one thesis) in international databases and 2 (12.5%) of them in the TR index. Hayyam Kiratli (Ophthalmology Department, Hacettepe University) was the most productive thesis advisor, supervising 7 theses (43.75%).

TUBITAK Project Results

We could not find a related project founded by TUBITAK.

Result of Visual Analysis of the Collaborations between Institutions and Authors

We set a minimum number of one document and zero citations as the threshold for institution analysis. Of the 134 institutions, 26 Turkish institutions met the thresholds.

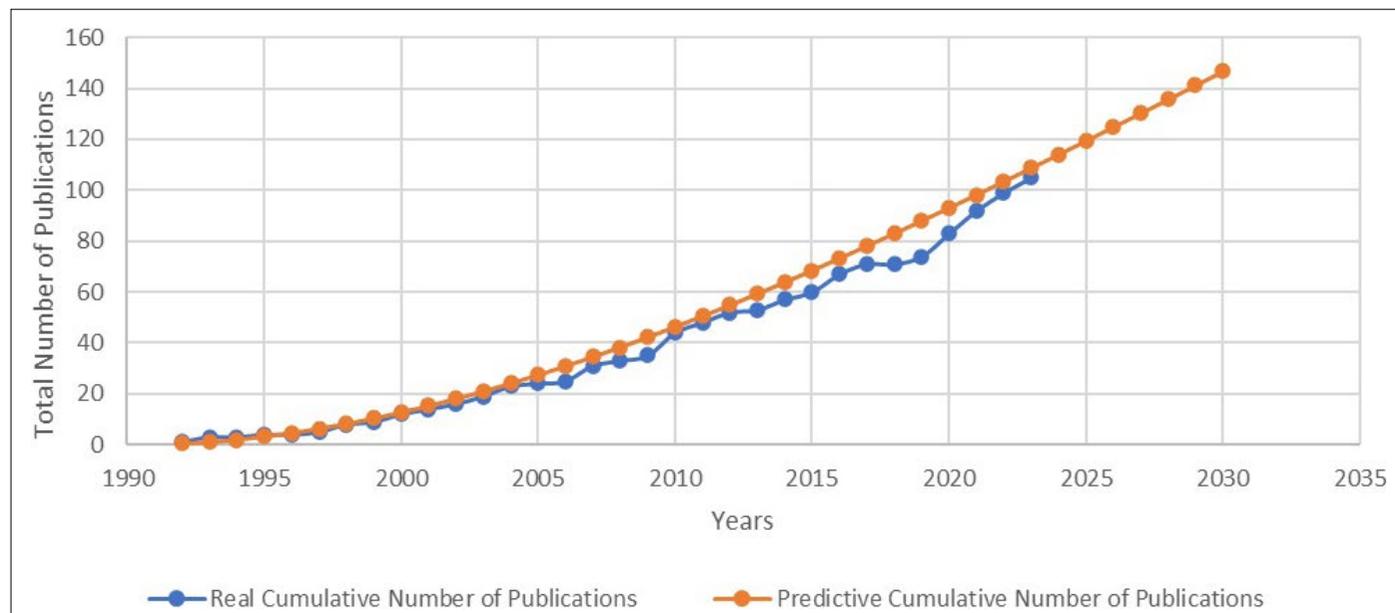


Fig. 2. Real and predicted cumulative number of publications in international databases.

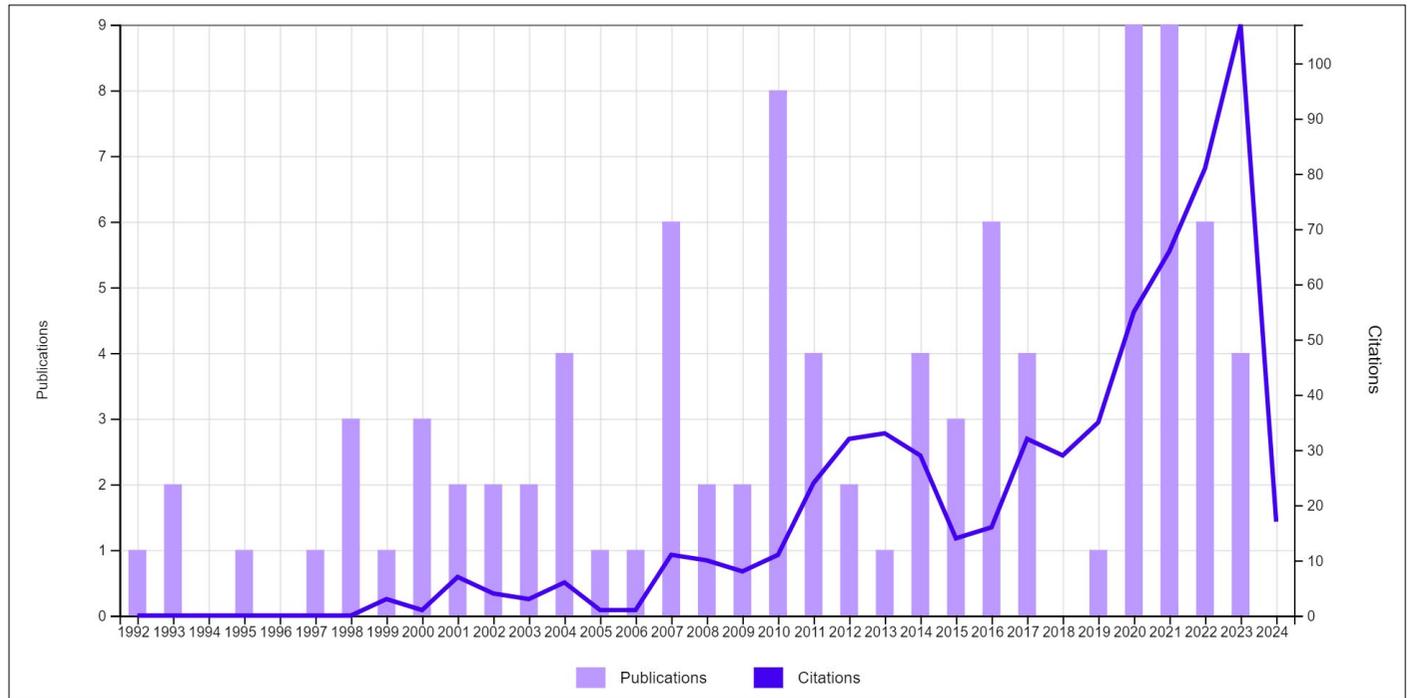


Fig. 3. Times cited and publications on UM research between 1992 and 2024 in WoS.

Table 1. The top 10 most cited articles in WoS

Title	CA	Journal	PY	Citations	
				Peer year	Total
Uveal Melanoma: Current Trends in Diagnosis and Management	Tarlan, B	Turkish Journal of Ophthalmology	2016	6.11	55
Correlation of clinicopathological parameters with HGF, c-Met, EGFR, and IGF-1R expression in uveal melanoma	Kiratli, H	Melanoma Research	2010	3.4	51
The Pediatric Choroidal and Ciliary Body Melanoma Study, A Survey by the European Ophthalmic Oncology Group	Kiratli, H*	Ophthalmology	2016	4.11	37
Initial results of fractionated CyberKnife radiosurgery for uveal melanoma	Selek, U	Journal of Neuro-Oncology	2009	2.31	37
Gamma-knife-based stereotactic radiosurgery for medium-and large-sized posterior uveal melanoma	Sarici, AM	Graefes Archive for Clinical and Experimental Ophthalmology	2013	2.58	31
Stereotactic Radiosurgery and Fractionated Stereotactic Radiation Therapy for the Treatment of Uveal Melanoma	Zorlu, F	International Journal of Radiation Oncology Biology Physics	2017	3.8	33
Review of fundus autofluorescence in choroidal melanocytic lesions	Gunduz, K.	Eye	2009	1.31	21
The use of ultrasound biomicroscopy in the evaluation of anterior segment tumors and simulating conditions	Gunduz, K.	Ophthalmologica	2007	1.17	21
Exoresection and Endoresection for Uveal Melanoma	Gunduz, K.	Middle East African Journal of Ophthalmology	2010	1.07	16
Gamma knife stereotactic radiosurgery yields good long-term outcomes for low-volume uveal melanomas without intraocular complications	Kilic, T	Journal of Clinical Neuroscience	2010	1	15

WoS: Web of Science; CA: Corresponding author; PY: Publication year; * Turkish representative of the study.

Hacettepe University had the highest weights in the document, citation, and link strength. Ege University and Akdeniz University had met the threshold; however, they were not linked with the other institutions (Fig. 4).

We set a minimum number of two documents and zero citations as the threshold for author analysis. Of the 374 authors, 53 met the thresholds. Hayyam Kiratli (Ophthalmology Department, Hacettepe University) had the highest weights in the document, citation, and total link strength (Fig. 5).

Keyword Analysis

Figure 6 shows keyword link strength and changes over time. "Choroidal melanoma," "ocular melanoma," "brachytherapy," and "transpupillary thermotherapy" had the highest occurrences and link strengths. "Ipilimumab" and "bap1" were recently added words.

Discussion

In a recent bibliometric study examining UM research around the world from 2001 to 2019 using the WoS database,

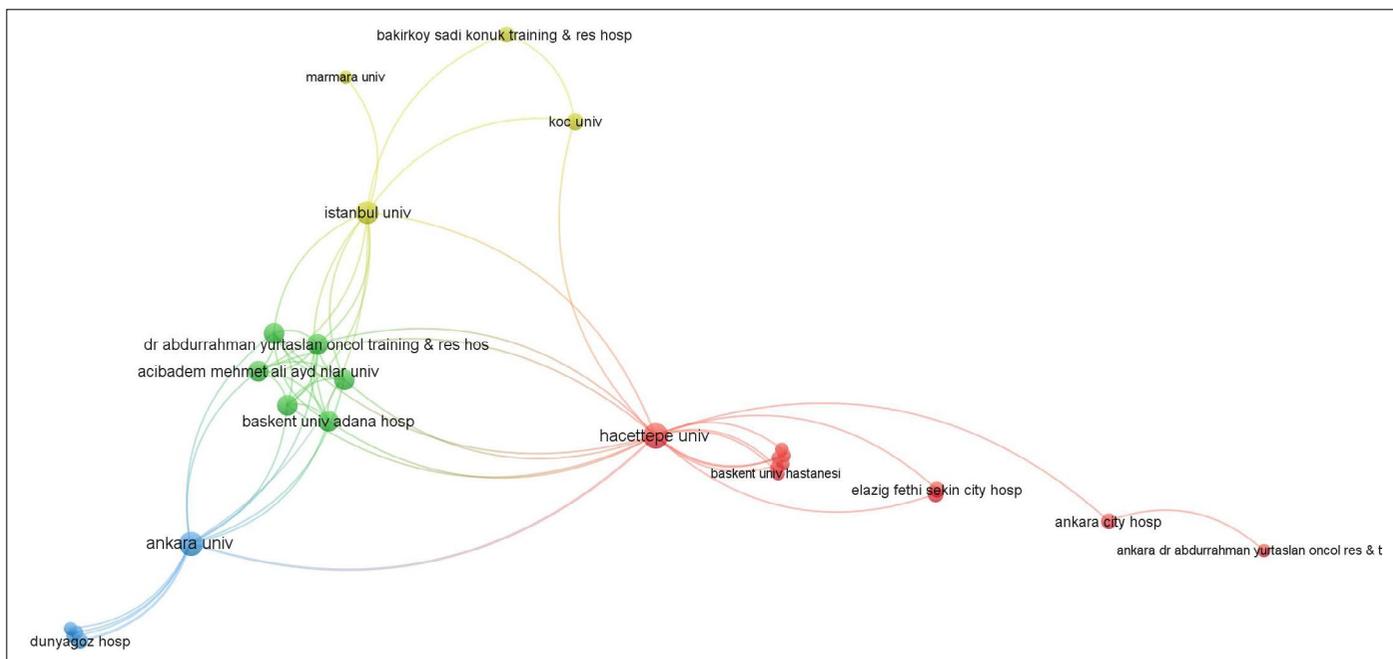


Fig. 4. Co-authorship networks in international databases, linked Turkish affiliations without international collaborations.

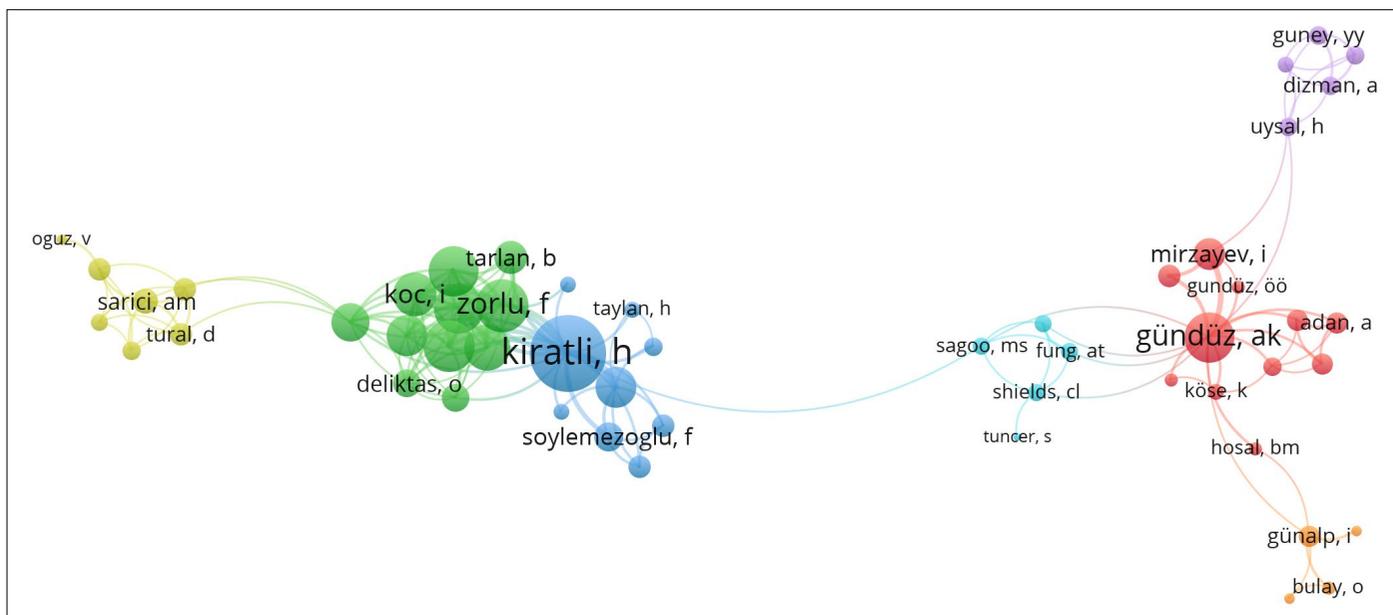


Fig. 5. Co-occurrence of keywords and changes over time in publications in International Databases.

that gathering sufficient data in ocular oncology frequently necessitates teamwork over several years and scholars are compelled to aim for the greatest possible impact and reach for their work, given the substantial effort that goes into these studies. Therefore, researchers are compelled to aim for the greatest possible impact and reach for their work. Global recognition and credibility for Turkish researchers are enhanced by their publication in international journals. Our second analysis with the Turkish database was about citations. In this analysis, we found only a total of seven citations. Given the low number of citations, questions arise about the impact and visibility of research that is published in national journals. Therefore, we think that further investigation into the citation practices of Turkish authors is needed.

Theses often serve as the foundation for scholarly contributions.^[21] A survey study conducted in Türkiye showed that half of the ophthalmology theses (n=154, 50%) were converted to journal articles.^[22] In our study, we found that 56.5% of theses on UM research resulted in publication. Furthermore, 43.75% of these were published in journals indexed in international databases. Considering that ocular oncology publications have one of the lowest representation rates among ophthalmology subspecialties, as shown by a recent study, we might say that theses conducted in Türkiye about UM are of high quality.^[23]

As a form of gray literature, we found no research project funded by TUBITAK. Since sufficient financial support is crucial for conducting high-quality research, more effective use of TUBITAK's resources might be another way to increase the volume of publications.

The publication growth trend showed that starting from just one publication in 1992, the cumulative number has increased steadily, only by moving slightly away from the cumulative number of publications estimated between 2015 and 2020, and then balancing this out and reaching to estimated number of publications again between 2020 and 2024. The predictive model also suggests that the curve becomes steeper in the later years, implying that the number of publications added each year is expected to rise parallel with the global trend.^[20]

Keyword detection is an effective bibliometric tool used to identify areas of significant research interest within a specific topic.^[9] The keyword visualization analysis revealed that Turkish UM research was mostly treatment focused. Compared to the global network genetic and molecular aspects of UM, such as "gnaq," "bap1," "biopsy,"

and "immunotherapy." Are less prominent or absent in the Turkish research image, suggesting potential areas for growth in Turkish UM research.^[15,24]

The analysis of the collaborative network of institutions and authors revealed that UM research in Türkiye is carried out in a limited number of centers and although there are not very strong connections, they are linked by national and international connections. Although we do not have data to prove that the institutions that conduct research and the facilities that provide treatment to patients in real life are the same, considering the rarity of melanoma, we can assume that the centers that contribute to research are also the treatment centers in real life. The negative impact of this situation is that the Turkish people, who are dispersed over a wide geography, may have difficulty accessing treatment in their location. The advantage in terms of research is that by strengthening existing connections, it is easy to access country-level big data regarding UM and the high-quality research opportunities associated with it.

Our study has some limitations. First, although we aimed to provide a comprehensive overview of UM research in Türkiye, our analysis mainly focused on quantitative aspects such as publication numbers, citation impact, and collaboration networks. We have not separately examined melanoma research arising from various anatomical structures of the uvea. Qualitative aspects such as the specific research questions, the methodological quality, and the clinical implications of individual studies were not examined in depth. The comparisons between Turkish and global UM research were also based on published literature that did not exactly overlap with our search period.

Conclusion

Bibliometric studies are effective instruments for evaluating a country's research performance in a particular field and offering insightful information about past successes and potential future paths. Our results highlight the dominance of a few academic centers on UM research, the necessity for national incidence data, and the potential research progression areas such as basic science and genetics research.

Ethics Committee Approval: In this study, there is no human or animal participants, therefore ethics committee approval is not applicable.

Peer-review: Externally peer-reviewed.

Authorship Contributions: Concept: A.A.; Design: A.A.; Supervision: A.A.; Resource: A.A.; Materials: A.A.; Data Collection and/or Processing: A.A., A.S.S.; Analysis and/or Interpretation: A.A., A.S.S.; Literature Search: A.A., A.S.S.; Writing: A.A.; Critical Reviews: A.A., A.S.S.

Conflict of Interest: None declared.

Use of AI for Writing Assistance: Not declared.

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References

- Kaliki S, Shields CL. Uveal melanoma: Relatively rare but deadly cancer. *Eye (Lond)* 2017;31:241–57. [\[CrossRef\]](#)
- Özcan G, Gündüz AK, Mirzayev İ, Oysul K, Uysal H. Early results of stereotactic radiosurgery in uveal melanoma and risk factors for radiation retinopathy. *Turk J Ophthalmol* 2020;50:156–62.
- Tarlan B, Kıratlı H. Uveal melanoma: Current trends in diagnosis and management. *Turk J Ophthalmol* 2016;46:123–37. [\[CrossRef\]](#)
- Buder K, Gesierich A, Gelbrich G, Goebeler M. Systemic treatment of metastatic uveal melanoma: Review of literature and future perspectives. *Cancer Med* 2013;2:674–86. [\[CrossRef\]](#)
- Dogrusöz M, Jager MJ, Damato B. Uveal melanoma treatment and prognostication. *Asia Pac J Ophthalmol (Phila)* 2017;6:186–96.
- Bronkhorst IH, Jager MJ. Uveal melanoma: The inflammatory microenvironment. *J Innate Immun* 2012;4:454–62. [\[CrossRef\]](#)
- Eteghadi A, Ebrahimi M, Keshel SH. New immunotherapy approaches as the most effective treatment for uveal melanoma. *Crit Rev Oncol Hematol* 2024;194:104260. [\[CrossRef\]](#)
- Kokol P, Vošner HB, Završnik J. Application of bibliometrics in medicine: A historical bibliometrics analysis. *Health Info Libr J* 2021;38:125–38. [\[CrossRef\]](#)
- Donthu N, Kumar S, Mukherjee D, Pandey N, Lim WM. How to conduct a bibliometric analysis: An overview and guidelines. *J Bus Res* 2021;133:285–96. [\[CrossRef\]](#)
- Aguinis H, Pierce CA, Bosco FA, Dalton DR, Dalton CM. Debunking myths and urban legends about meta-analysis. *Organ Res Methods* 2011;14:306–31. [\[CrossRef\]](#)
- Akmaz B, Kılıç D. Analysis of publications from Turkey in ophthalmology in science citation index journals: The effect of change in criteria for associate professorship. *Turk Klinikler J Med Sci* 2020;40:161–7. [\[CrossRef\]](#)
- Caglar C, Demir E, Kucukler FK, Durmus M. A bibliometric analysis of academic publication on diabetic retinopathy disease trends during 1980–2014: A global and medical view. *Int J Ophthalmol* 2016;9:1663–8.
- Pekel E, Pekel G. Publication trends in corneal transplantation: A bibliometric analysis. *BMC Ophthalmol* 2016;16:194. [\[CrossRef\]](#)
- Wang Y, Zhai X, Liu C, Wang N, Wang Y. Trends of triple negative breast cancer research (2007–2015): A bibliometric study. *Medicine (Baltimore)* 2016;95:e5427. [\[CrossRef\]](#)
- Elubous KA, Alebous AD, Abous HA, Elubous RA. The trends of uveal melanoma research in the past two decades and future perspectives. *SN Compr Clin Med* 2021;3:2593–602. [\[CrossRef\]](#)
- Kocuyigit BF, Akyol A. Bibliometric and altmetric analyses of publication activity in the field of Behcet's disease in 2010–2019. *J Korean Med Sci* 2021;36:e207. [\[CrossRef\]](#)
- Nayman T, Bostan C, Logan P, Burnier MN Jr. Uveal melanoma risk factors: A systematic review of meta-analyses. *Curr Eye Res* 2017;42:1085–93. [\[CrossRef\]](#)
- United Nations. Available from: <https://population.un.org/wpp> [Last accessed on 2024 Nov 04].
- Wu M, Yavuzyigitoglu S, Brosens E, Ramdas WD, Kiliç E. Worldwide incidence of ocular melanoma and correlation with pigmentation-related risk factors. *Invest Ophthalmol Vis Sci* 2023;64:45. [\[CrossRef\]](#)
- Gu X, Xie M, Jia R, Ge S. Publication trends of research on retinoblastoma during 2001–2021: A 20-year bibliometric analysis. *Front Med* 2021;8:675703. [\[CrossRef\]](#)
- Paez A. Gray literature: An important resource in systematic reviews. *J Evid Based Med* 2017;10:233–40. [\[CrossRef\]](#)
- Bayramlar H, Karadag, R., Kanra Gurturk AY, Ocal A, Dag Y, Sari U. Publication patterns of ophthalmology residency dissertations in Turkey. *Eur J Gen Med* 2015;12:213–6. [\[CrossRef\]](#)
- Zloto O, Souied E, Saeed P, Simon GB, Gildener-Leapman J, Vishnevskia-Dai V, et al. Publication trends in clinical ophthalmology journals in the last decade. *Eur J Ophthalmol* 2022;32:1406–10. [\[CrossRef\]](#)
- Tan Y, Lu Y, Chen S, Zou C, Qin B. Immunotherapy for ocular melanoma: A bibliometric and visualization analysis from 1991 to 2022. *Front Oncol* 2023;13:1161759. [\[CrossRef\]](#)