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Artificial Intelligence in Health Tourism: A Bibliometric Analysis

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A B S T R A C T

This study aims to examine academic research conducted in the field of AI-supported health tourism using the bibliometric analysis method. By scanning the relevant literature indexed in the Web of Science (WoS) database, the distribution of publications over the years, active researchers, collaborations, prominent topics, and trends are analyzed. Academic publications on AI-supported health tourism have been indexed in the Web of Science database since 1990 and have shown a rapid increase, especially after 2019. The year 2024 is the year with the highest number of publications, reaching a peak with 50 studies. 207 studies were published in 177 different sources, and the annual average growth rate of the publications was determined to be 5.72%. A total of 1037 authors contributed to the studies, with an average co-author count of 5.22. The most prolific source is the Sensors journal, and among the most cited sources, Artificial Intelligence in Medicine stands out. The researchers with the most publications by country are from the USA, followed by China and Italy. According to the keyword analysis, the most frequently used words in the studies were artificial intelligence, system, model, internet, diagnosis, and wellness. The increase in studies related to artificial intelligence in the post-2019 period indicates that this technology has become a more prominent research topic in the field of health tourism and will receive more academic interest in the future.

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Sağlık Turizminde Yapay Zekâ: Bibliyometrik Bir Analiz

M A K A L E B İ L G İ S İ

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Ö Z

Bu çalışma, yapay zekâ destekli sağlık turizmi alanında yürütülen akademik araştırmaları bibliyometrik analiz yöntemiyle incelemeyi amaçlamaktadır. Web of Science (WoS) veri tabanında dizinlenen ilgili literatür taranarak, yayınların yıllara göre dağılımı, aktif araştırmacılar, işbirlikleri, öne çıkan konular ve eğilimler analiz edilmiştir. Yapay zekâ destekli sağlık turizmine ilişkin akademik yayınlar WoS veri tabanında ilk kez 1990 yılında yer almış ve özellikle 2019 sonrasında hızlı bir artış göstermiştir. 2024 yılı, 50 çalışmayla en yüksek yayın sayısına ulaşılan yıl olmuştur. Toplamda 177 farklı kaynakta yayımlanan 207 çalışma incelenmiş ve yayınların yıllık ortalama büyüme oranı %5,72 olarak belirlenmiştir. Çalışmalara toplam 1037 araştırmacı katkı sağlamış olup, yayın başına ortalama ortak yazar sayısı 5,22'dir. En üretken kaynak Sensors dergisi olurken, en çok atıf alan kaynaklar arasında Artificial Intelligence in Medicine öne çıkmaktadır. Ülkelere göre en fazla yayın yapan araştırmacıların Amerika Birleşik Devletleri'nden, ardından Çin ve İtalya'dan olduğu görülmektedir. Anahtar kelime analizine göre çalışmalarda en sık kullanılan kelimeler yapay zekâ, sistem, model, internet, tanı ve wellness olmuştur. 2019 sonrası yapay zekâ ile ilgili çalışmaların artması, bu teknolojinin sağlık turizmi alanında giderek daha belirgin bir araştırma konusu hâline geldiğini ve gelecekte daha fazla akademik ilgi göreceğini göstermektedir.

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Introduction

The market size of artificial intelligence in healthcare is expected to reach $20.9 billion in 2024, and is projected to reach $148.6 billion by 2029 (Vention 2025). In the healthcare services market, global Metaverse applications are estimated to generate 9.5 billion dollars in revenue in 2023. [A1]This value is expected to reach 79.6 billion dollars in five years (MarketsandMarkets, 2024). The Metaverse offers innovative solutions for overcoming barriers to accessing healthcare services due to geographical distance and physical obstacles (Li et al. 2024: 1). In this way, the concept of the Metaverse will also be frequently heard in health tourism, which is expected to have a market worth 200 billion dollars in 2027. In health tourism, it is expected that Metaverse applications will address negative aspects such as inadequate communication, stress, insecurity, and lack of information before travel through an "experience before service" approach. (Nair, 2024).

Artificial Intelligence (AI) is significantly transforming the health tourism experience by providing personalized medical services that address individuals' needs and preferences. AI-based applications such as precision diagnosis, customized treatment plans, and virtual health platforms are both optimizing clinical processes and enabling medical tourists to participate more effectively in their care (Barua & Datta, 2024). Furthermore, innovative AI frameworks integrated with wearable technologies enable real-time mental health monitoring, enabling early detection of factors such as psychological stress, anxiety, and uncertainty experienced by medical tourists throughout their travels. This holistic, data-driven approach supports the psychological well-being of medical tourists, increases treatment compliance, and enhances the overall patient experience, adding significant value to health tourism services (Agaoğlu et al., 2022; Komalasari, 2024; Sahar & Dar, 2024).

Artificial intelligence-powered virtual assistants and predictive analysis models enrich the health tourism experience by facilitating the delivery of personalized medical services. These technologies increase patient satisfaction and improve service delivery efficiency throughout the medical tourism process by enabling more efficient access to information, treatment planning, and follow-up care (Karcıoğlu, 2025).

2. Literature Review

The concept of artificial intelligence was introduced by John McCarthy in 1955 as "the science and engineering of making intelligent machines." Today, it is considered a branch of engineering that applies new concepts and solutions to solve complex challenges (Hamet and Tremblay, 2017: 37). Artificial intelligence is considered a system that imitates the phenomenon of thought and consciousness inherent to humans. Within this system, the structure of thought and consciousness is adapted to the machine, and complex processes are attempted to be solved in a manner similar to the human brain through the computer (Akalın and Veranyurt, 2020: 134).

Artificial intelligence-powered virtual assistants and chatbots provide 24/7 access and multilingual service, enabling healthcare tourists to access information quickly and accurately. These intelligent systems improve the quality of patient interaction by answering frequently asked questions, supporting booking and planning processes, and reducing communication barriers. Furthermore, by providing real-time process control, they contribute to the seamless management of information flow throughout the healthcare tourism journey, ensuring a more reliable, efficient, and holistic overall experience (Weißensteiner, 2018; Ma&Zhang, 2024).

2.1. Utilization of Artificial Intelligence in Health Tourism

The application of artificial intelligence in health tourism is improving the experiences of health tourists while ensuring service quality and efficiency (Sharma, 2023).

Chatbots and Virtual Assistants Powered by Artificial Intelligence: AI-driven chatbots and virtual assistants are enhancing service accessibility by delivering tailored information and help to health tourists. These systems can provide information on travel and lodging, respond to inquiries about medical procedures and treatments, and assist patients in locating the most appropriate healthcare providers.

Applications of Artificial Intelligence in Diagnosis and Treatment Planning: Solutions augmented by artificial intelligence are employed to enhance the diagnostic and treatment processes for health tourists. These programs evaluate data including patients' medical histories, test findings, and imaging scans to deliver tailored therapy suggestions and enhance the organization of treatment regimens.

Predictive Analytics Models and Patient Safety: AI-enhanced predictive analytics models facilitate early intervention by identifying patients at elevated risk of complications or bad outcomes post-medical procedures. These systems assist healthcare professionals in implementing preventive actions, ultimately enhancing patient safety.

Personalized Healthcare: AI-based applications support personalized healthcare by providing health tourists with personalized health recommendations. These programs aim to improve overall health and wellness by analyzing patients' medical data and providing guidance on nutrition, exercise, and lifestyle choices

Artificial Intelligence in Electronic Health Record Management: Artificial intelligence enhances the management of electronic health records, facilitating international access to patient data for healthcare providers and ensuring secure data sharing. This scenario not only improves the quality of care for medical tourists but also helps prevent medical errors.

In light of the findings presented above and current trends in the literature, it appears that service delivery models are being virtually reshaped as artificial intelligence increasingly transforms the healthcare and tourism sectors (Dwivedi et al., 2024; Saleh, 2025). Numerous AI-driven applications in healthcare—ranging from diagnosis and treatment planning to personalized medical services, predictive analytics, and virtual assistants—are radically changing health tourists' access to information, service quality, information acquisition processes, and overall care experiences (Jiang et al., 2017; Hamet & Tremblay, 2017). However, despite the rapid growth of scientific studies at the intersection of AI and health tourism, comprehensive analyses that holistically reveal research trends, influential authors and countries, collaboration networks, and thematic directions remain limited (Aria & Cuccurullo, 2017; Ellegaard & Wallin, 2015). Understanding the intellectual structure and developmental dynamics of this rapidly evolving, high-value-added field will not only guide future research but also provide meaningful insights for policymakers, healthcare institutions, and tourism industry stakeholders seeking to enhance global competitiveness and develop patient-centered service models (Chen et al., 2024; Connell, 2013).

An examination of the most cited studies reveals that artificial intelligence applications have driven substantial advancements in healthcare, particularly in deep learning, image analysis, recommendation systems, telemedicine, and digital counseling. Krizhevsky, Sutskever, and Hinton (2017) and LeCun, Bengio, and Hinton (2015) outlined the evolution of deep learning architectures and provided the theoretical foundation for contemporary diagnostic AI models. In clinical contexts, Bressem et al. (2021) and Maksymowych et al. (2021) demonstrated that deep learning algorithms can achieve expert-level accuracy in detecting radiological lesions. Within the domain of recommendation systems, Burke (2002) showed that hybrid algorithms can effectively generate personalized suggestions based on user preferences and behavior. Furthermore, studies evaluating digital counseling tools, such as Fitzpatrick et al. (2017) and Xu et al. (2021), revealed that chatbot-based AI applications serve as effective mechanisms for patient communication and support. Regarding telemedicine, Haleem et al. (2021) emphasized that integrating AI into remote healthcare services enhances efficiency and accessibility. On a broader system level, Abràmoff et al. (2023) highlighted ethical challenges, particularly algorithmic bias, while Alowais et al. (2023) demonstrated the transformative impact of AI on clinical workflows and operational efficiency.

These influential studies collectively demonstrate that AI technologies are reshaping healthcare delivery through improved diagnostic accuracy, personalized service provision, digital communication systems, and advanced telemedicine infrastructure. In this regard, mapping the evolution, thematic structure, and intellectual foundations of AI-supported health tourism is essential for identifying research gaps and emerging opportunities. Given the rapidly expanding literature and the increasingly complex conceptual landscape (Ismail et al., 2025), a systematic and comprehensive evaluation is warranted. Therefore, this study adopts a bibliometric design to examine publication trends, influential contributors, collaboration patterns, and conceptual structures within the field (Aria & Cuccurullo, 2017).

3. Method

3.1. Study Design and Aim

This study was designed as a bibliometric analysis to examine publication trends, thematic development, influential authors, and collaboration structures related to the integration of artificial intelligence (AI) into health tourism, medical tourism, spa, and wellness research. [A2]The aim was to systematically analyze studies indexed in the Web of Science (WoS) database and reveal the intellectual structure and research evolution of this interdisciplinary field.

3.2. Data Source and Search Strategy

The Web of Science Core Collection database was selected due to its broad scientific coverage and robust citation indexing. The search query used was: TS = (("health tourism" OR "medical tourism" OR "spa" OR "wellness") AND ("artificial intelligence")) All records indexed between 1990 and 2025 were screened. A total of 207 publications were identified as relevant to the research scope.

3.3. Data Extraction and Preparation

Bibliographic data—including authors, titles, abstracts, keywords, source information, and cited references—were exported in WoS Plain Text format. The datasets were imported into the Biblioshiny interface of the Bibliometrix package (R-based), and preprocessing steps such as duplicate checks and field standardization were conducted.

3.4. Bibliometric Procedures

The bibliometric analysis followed a structured workflow consisting of descriptive, network-based, and thematic analyses:

• Descriptive indicators: annual scientific production, authorship patterns, source impact, and country productivity.

• Network analysis: co-authorship networks, co-citation networks, bibliographic coupling, and keyword co-occurrence.

• Thematic and conceptual structure analysis: thematic evolution, thematic map clusters, and conceptual field mapping.

3.5. Key Findings Reflected in the Workflow

Based on the extracted dataset:

• Annual scientific production showed a sharp increase after 2019, indicating accelerated academic interest in AI-driven health tourism research.

• The most productive countries included the United States, China, and India, with notable international collaborations.

• Frequently used keywords included “artificial intelligence,” “medical tourism,” “machine learning,” “healthcare,” and “wellness,” reflecting the thematic convergence of AI technologies with health-related mobility.

• Network visualizations revealed strong co-authorship clusters mainly among Asian and European researchers.

3.6. Integration of the Workflow Diagram

To enhance transparency and reproducibility, a methodological workflow diagram was created. This diagram outlines the sequential phases of the study, including database selection, query execution, data extraction, preprocessing, descriptive analysis, network analysis, and thematic mapping. The overall bibliometric workflow is presented in Figure 1.

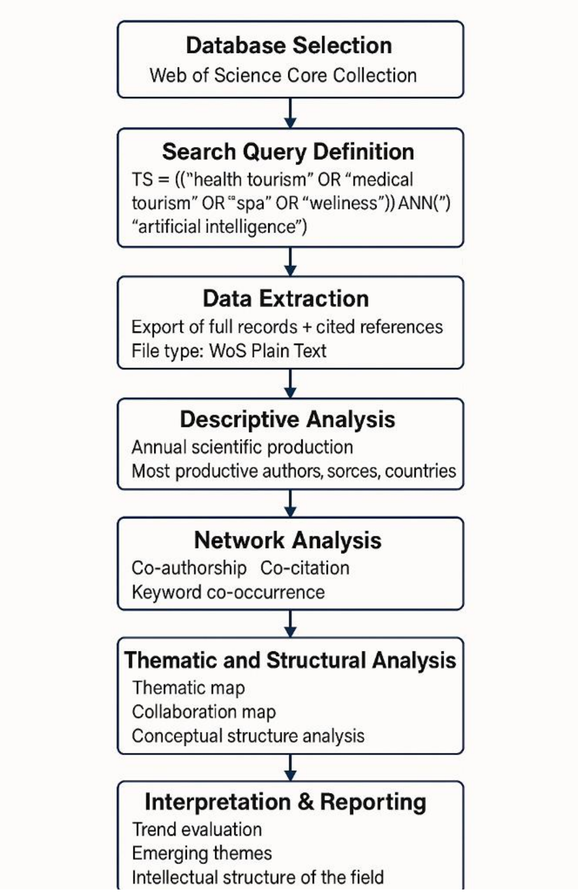


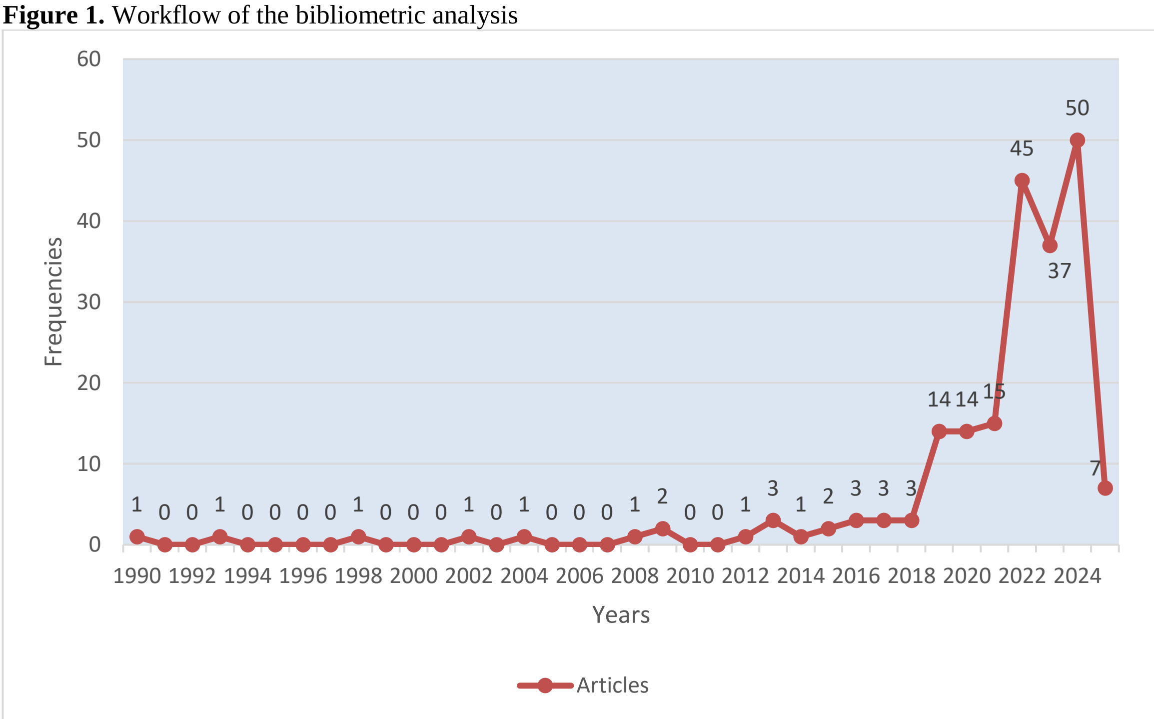
Figure 1. Workflow of the bibliometric analysis

Figure 1. Workflow of the bibliometric analysis illustrating the sequential stages including database selection, search query definition, data extraction, preprocessing, descriptive analysis, network analysis, and thematic mapping.

4. Analysis and Findings

A total of 207 publications related to the search terms (("health tourism" OR "medical tourism" OR "spa" OR "wellness") AND ("artificial intelligence")) were identified in the Web of Science database between 1990 and 2025. The earliest publication on the topic appeared in 1990. These studies were published across 177 different sources, with an average annual growth rate of 5.72% and an average of 13.36 citations per document. A total of 1,037 authors contributed to the literature, using 828 distinct keywords. The average number of co-authors per publication was 5.22, the international collaboration rate was 34.78%, and 11 publications were single-authored.

The temporal distribution of publications is presented in Graph 1. Findings indicate a substantial concentration of research activity between 2019 and 2024, during which 182 studies were published. The number of publications increased from 14 in 2019 to 50 in 2024, making 2024 the most productive year. After relative stability between 2019 and 2021, the field experienced a threefold increase in 2022 compared to 2021. Although publication output declined slightly in 2023, it rose sharply again in 2024, indicating renewed scholarly engagement.



Graph 1. Annual distribution of publications on artificial intelligence in health tourism (1990–2024)

Table 1 shows the number of sources, indexes and total citation counts of studies published in the fields of (("health tourism" or "medical tourism" or "spa" or "wellness") and ("artificial intelligence")). The sources are listed from largest to smallest according to the total number of publications. When the table is examined, it is seen that the source with the highest number of publications is "Sensors" with 8 publications and the h_index value of the source is 5 and the total number of citations is 155. The second source with the highest number of publications is "Frontiers in Public Health". The source with the second highest number of citations is "Artificial Intelligence in Medicine".

Table 1. Most relevant sources by number of publications, h-index, g-index, and total citations

Journal	Number of publications	h index value	g index value	Total Number of Citations
SENSORS	8	5	8	155
FRONTIERS IN PUBLIC HEALTH	4	2	4	26
HEALTHCARE	3	2	3	27
JMIR RESEARCH PROTOCOLS	3	1	2	4
JOURNAL OF MEDICAL INTERNET RESEARCH	3	1	2	4
APPLIED SCIENCES-BASEL	3	1	1	3
ARTIFICIAL INTELLIGENCE IN MEDICINE	2	2	2	97
ELECTRONICS	2	2	2	12
MATERIALS ADVANCES	2	2	2	28

Table 2 displays the top authors ranked by publication count, citation impact, and bibliometric indices. Kaushik A. was the most productive author with three publications and 52 citations, holding an h-index of 2. The authors with the highest citation counts were Joerin A. and Rauws M., each with 91 citations, indicating their influential contributions despite a smaller output. Most authors in the top group shared similar h-index and g-index values, reflecting a consistent pattern of scholarly influence across the field.

Table 2: Top 10 authors' productivity and citation impact (h-index, g-index, m-index)

Authors	Number of Article	h_index	g_index	m_index	Total Number of Citations
KAUSHIK A	3	2	3	0,333	52
JIANG XF	2	2	2	0,5	9
JOERIN A	2	2	2	0,286	91
KÖKCIYAN N	2	2	2	0,286	35
MCDEVITT JT	2	2	2	0,2	54
MCRAE MP	2	2	2	0,2	54
NIE JP	2	2	2	0,5	9
PARSONS S	2	2	2	0,286	35
PREINDL M	2	2	2	0,5	9
RAUWS M	2	2	2	0,286	91

Figure 2 illustrates the distribution of corresponding authors by country, differentiating between Single Country Publications (SCP) and Multiple Country Publications (MCP). The United States ranked first with 45 publications (SCP=32; MCP=13), indicating that 71.1% of contributions involved domestic collaboration. China followed with 23 publications (SCP=17; MCP=6), and Italy with 22 publications (SCP=15; MCP=7). Among these countries, Italy exhibited the highest proportion of international collaboration, followed by the United States and China.

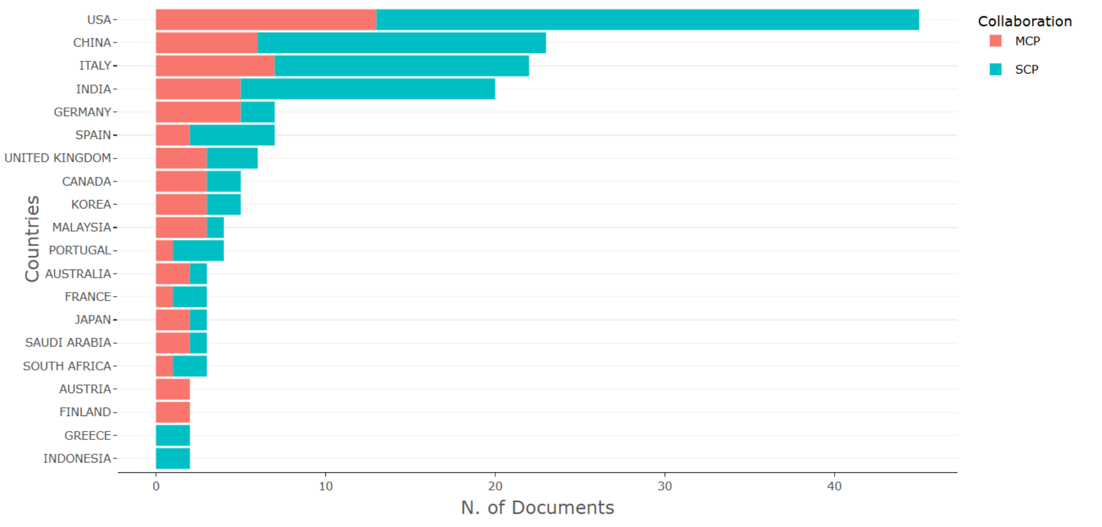


Figure 2: Corresponding author countries and collaboration patterns (SCP vs. MCP)
Note: SCP = Single Country Publications; MCP = Multiple Country Publications. These abbreviations refer to collaboration types used in the bibliometric analysis

In Figure 3, the collaboration network among keywords in the topics of (("health tourism" or "medical tourism" or "spa" or "wellness") and ("artificial intelligence")) is shown. The keyword "artificial intelligence" is observed to be used more frequently than other keywords, as indicated by the size of the cell, while in the studies, it has been used together more often with the keywords diagnosis, wellness, prediction future, impact, and model. The keyword "System" has also been the second-most frequently used in the studies. [A3]The keywords networks, things, and internet have been used together in the studies. When Figure 2 is evaluated in general; based on Figure 1, the fact that the number of studies has increased more after 2019 indicates that the keywords have become more focused on words like artificial intelligence, system, model, and internet after this period.

Figure 3. Collaboration Network Between Keywords of Studies

Together, these keyword clusters reveal the intellectual structure of the field and its transition toward more technologically oriented themes. This conceptual landscape informs the discussion presented in the next section.

4. Discussion

This study aimed to examine the academic landscape of artificial intelligence–supported health tourism and to identify publication trends, influential contributors, and emerging thematic structures using a bibliometric approach. Understanding how AI is integrated into health tourism is essential, as technological advancements are reshaping patient experiences, enhancing service accessibility, and driving innovation across the sector.

The findings of this study reveal that artificial intelligence is becoming an increasingly influential component within the field of health tourism, particularly through technologies that enhance operational efficiency, patient engagement, and digital service delivery. The bibliometric analysis demonstrates a sharp increase in research activity beginning in 2019, indicating a significant shift in global academic attention toward AI-driven applications in health tourism. This upward trend aligns with broader bibliometric evidence showing accelerated growth in AI-oriented health research worldwide, suggesting that the field is undergoing a rapid technological transformation.

Analysis of 207 publications indexed in the Web of Science database shows that most studies were conducted between 2019 and 2024, reflecting the novelty and expanding scope of this research domain. The United States, China, and Italy emerged as the leading countries in terms of author productivity, a finding consistent with international literature identifying these nations as central actors in AI and digital health research.

Furthermore, the keyword collaboration network indicates that research clusters predominantly around technology-focused concepts particularly artificial intelligence, system, model, and internet highlighting a thematic shift toward computational methods and digital infrastructures in health tourism research.

Although artificial intelligence applications have started to be taken in health tourism, it is still at an early stage. More research is needed on topics such as experience, marketing, interaction, access, and service delivery. First of all, it will be necessary to take action to overcome challenges such as people's level of adoption of this technology, the infrastructure status of countries, digital divides, governance, ethics, privacy, security, laws and collaborations (Gupta et al., 2024: 327).

According to Table 1, Sensors ranks first with eight publications, an h-index of 5, and a total of 155 citations. Frontiers in Public Health, which ranks second in publication volume, highlights the field's multidisciplinary nature. Furthermore, the fact that Artificial Intelligence in Medicine holds the second-highest citation count demonstrates the strong intersection between the field and AI-driven medical applications. These observations are consistent with the widely documented tendency in bibliometric literature for high-visibility journals to shape research agendas and attract concentrated scholarly activity (Aria & Cuccurullo, 2017). Similarly, recent reviews have emphasized that highly cited journals often serve as central hubs for knowledge dissemination in AI- and health-related domains (Abanga & Acquah, 2024; Hussain et al., 2024). Overall, our findings support the current scholarly trend, showing that research at the intersection of health tourism and artificial intelligence is predominantly published in technology-oriented, medically focused, and high-impact journals.

When evaluating the international collaboration indicators used in this study, SCP (Single Country Publications) denotes publications authored exclusively by researchers from the same country, while MCP (Multiple Country Publications) represents publications co-authored by researchers affiliated with different countries. This distinction serves as a key bibliometric indicator for assessing national and international collaboration patterns in scientific production (Aria & Cuccurullo, 2017; Katz & Martin, 1997). Our findings reveal that the United States, China, and Italy stand out in terms of both SCP and MCP values, positioning these countries as the primary actors shaping global research networks within the domains of health tourism and artificial intelligence. These results align with previous bibliometric studies suggesting that the United States and China occupy central roles in international scientific collaboration, particularly in AI- and health-related research domains (Leydesdorff & Wagner, 2008). In addition, the literature indicates that Italy has emerged as a growing contributor to multinational academic partnerships among European countries, and the high MCP rates identified in our study further support this trend (Yadigarova, 2025; Ismail et al., 2025). Overall, our analysis reinforces the existing literature by demonstrating that global research productivity remains concentrated in a limited number of countries (Ellegaard & Wallin, 2015) and that multinational collaboration networks are becoming increasingly strategic at the intersection of health tourism and artificial intelligence.

5. Conclusion

Based on the findings of this study, it can be argued that research in the field of health tourism has shifted significantly toward AI-based concepts since 2019, and a new research trend has emerged, particularly focused on systems, models, and internet technologies. This trend demonstrates the acceleration of digital transformation in the health tourism sector and necessitates that researchers delve deeper into the effectiveness, ethical dimensions, and integration processes of AI applications into healthcare services in the future. Furthermore, future studies comparing countries and subsectors (medical tourism, wellness tourism, senior tourism) will significantly advance the field's development.

Overall, the findings of this study underscore the growing strategic importance of artificial intelligence within health tourism and highlight the need for future research to focus on interdisciplinary innovation, ethical and regulatory considerations, and global collaboration. As technological transformation accelerates, the integration of AI into health tourism is expected to expand, shaping new service models, operational infrastructures, and user-centered digital experiences that will define the future of the sector.

The findings of this study offer important recommendations for both practitioners and researchers regarding the development of AI-enabled health tourism. First, strengthening the sector's digital infrastructure and improving data security and ethical governance mechanisms will support the safe and effective use of AI applications. Service providers developing accessible and user-friendly solutions, particularly for older individuals and groups with limited digital access, will facilitate technology adoption. Furthermore, it is crucial for health tourism institutions to invest in staff training, interdisciplinary collaborations, and AI-based personalized service designs. For researchers, conducting comparative studies across countries and subsectors, examining user experiences, ethical risks, and the effects of AI on patient satisfaction and service quality will significantly contribute to future literature. Increasing international academic collaborations and adopting multi-method research approaches will accelerate the scientific and applied development of AI-enabled health tourism.

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References

Abanga, E. A., & Acquah, T. (2024). A Bibliometric Analysis of Global Research Trends in Artificial Intelligence from 2019 to 2023. Asian Journal of Research in Computer Science, 17(12), 220–233.

Abràmoff, M.D., Tarver, M.E., Loyo-Berrios, N. et al. (2023). Considerations for addressing bias in artificial intelligence for health equity. Npj Digital Medicine, 6, 170. DOI 10.1038/S41746-023-00913-9

Ağaoğlu, F. O., Ekinci, L. O., & Tosun, N. (2022). Metaverse ve Sağlik Hizmetleri Üzerine Bir Değerlendirme. Erzincan Binali Yıldırım Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi, 4(1), 95-102.

Akalın, B., & Demirbaş, M. B. (2024). Sağlık turizminde web 5.0'a doğru gelişmeler: Sistematik derleme. Sağlık ve Sosyal Refah Araştırmaları Dergisi, 6(1), 48–65.

Alowais, S.A., Alghamdi, S.S., Alsuhebany, N. et al. (2023). Revolutionizing healthcare: the role of artificial intelligence in clinical practice. BMC Medical Education, 23, 689. DOI 10.1186/S12909-023-04698-Z

Amouzagar, S., Mojaradi, Z., Izanloo, A., Beikzadeh, S., & Milani, M. (2016). Qualitative examination of health tourism and its challenges. International Journal of Travel Medicine and Global Health, 4(3), 88–91.

Aria, M., & Cuccurullo, C. (2017). A brief introduction to bibliometrix. Journal of Informetrics, 11(4), 959–975.

Barua, R., & Datta, S. (2024). The Improvements in Significance of AI in Experiential and Medical Tourism. Advances in Logistics, Operations, and Management Science, 303–334. https://doi.org/10.4018/979-8-3693-5578-7.ch012

Bathla, G., Raina, A., & Rana, V. S. (2024). Artificial Intelligence-Driven Enhancements in Medical Tourism (pp. 139–162). IGI Global. https://doi.org/10.4018/979-8-3693-2248-2.ch006

Bressem K. K, Vahldiek J. L., Adams L., Niehues S. M., Haibel H., Rodriguez V. R., Torgutalp M., Protopopov M., Proft F., Rademacher J., Sieper J., Rudwaleit M., Hamm B., Makowski M. R., Hermann K. G., Poddubnyy D. (2021). Deep learning for detection of radiographic sacroiliitis: achieving expert-level performance. Arthritis Research & Therapy, 23(1), 106. DOI 10.1186/S13075-021-02484-0

Burke, R. (2002). Hybrid Recommender Systems: Survey and Experiments. User Modeing andl User-Adapted Interaction, 12, 331–370. DOI 10.1023/A:1021240730564

Chen, J., Wu, X., & Lai, I. K. W. (2023). A systematic literature review of virtual technology in hospitality and tourism (2013–2022). Sage Open, 13(3), 21582440231193297.

Cheng, S. (2023). Metaverse: Concept, Content and Context (pp. 1–23). Springer Nature Switzerland.

Connell, J. (2013). Contemporary medical tourism: Conceptualisation, culture and commodification. Tourism Management, 34, 1–13.

Dwivedi, Y. K., Pandey, N., Currie, W., & Micu, A. (2024). Leveraging ChatGPT and other generative artificial intelligence (AI)-based applications in the hospitality and tourism industry: Practices, challenges and research agenda. International Journal of Contemporary Hospitality Management, 36(1), 1–12.

Ellegaard, O., & Wallin, J. A. (2015). The bibliometric analysis of scholarly production: How great is the impact? Scientometrics, 105(3), 1809–1831.

Fitzpatrick K., Darcy A., Vierhile M. (2017). Delivering Cognitive Behavior Therapy to Young Adults With Symptoms of Depression and Anxiety Using a Fully Automated Conversational Agent (Woebot): A Randomized Controlled Trial. JMIR Ment Health, 4 (2), 19. DOI 10.2196/MENTAL.7785

Gadekallu, T. R., Huynh-The, T., Wang, W., Yenduri, G., Ranaweera, P., Pham, Q. V., ... & Liyanage, M. (2022). Blockchain for the metaverse: A review.

Gupta, O. J., Yadav, S., Srivastava, M. K., Darda, P., & Mishra, V. (2024). Understanding the intention to use metaverse in healthcare utilizing a mix method approach. International Journal of Healthcare Management, 17(2), 318–329.

Haleem A., Javaid M., Singh R. P., Suman R. (2021) Telemedicine for healthcare: Capabilities, features, barriers, and applications. Sensors International. 2, 100117. DOI 10.1016/J.SINTL.2021.100117

Hamet, P., & Tremblay, J. (2017). Artificial intelligence in medicine. Metabolism, 69, 36–40.

Hussain, W., Mabrok, M., Gao, H., Rabhi, F. A., & Rashed, E. A. (2024). Revolutionising healthcare with artificial intelligence: A bibliometric analysis of 40 years of progress in health systems. Digital Health, 10, 20552076241258757.

Huynh-The, T., Pham, Q. V., Pham, X. Q., Nguyen, T. T., Han, Z., & Kim, D. S. (2023). Artificial intelligence for the metaverse: A survey. Engineering Applications of Artificial Intelligence, 117, 105581.

Jiang, F., Jiang, Y., Zhi, H., Dong, Y., Li, H., Ma, S., ... & Wang, Y. (2017). Artificial intelligence in healthcare: Past, present and future. Stroke and Vascular Neurology, 2(4).

Karcıoğlu, U. B. (2025). The impact of artificial intelligence on the patient journey in medical tourism: A management framework. Eurasian Journal of Health Technology Assessment, 9(1), 58–67. https://doi.org/10.52148/ehta.1701664

Katz, J. S., & Martin, B. R. (1997). What is research collaboration? Research Policy, 26(1), 1–18.

Krizhevsky, A., Sutskever, I., & Hinton, G. E. (2017). Gradient-based learning applied to document recognition. Commun. Acm, 60, 84-90. DOI 10.1145/3065386

LeCun, Y., Bengio, Y. and Hinton, G. (2015). Deep learning. Nature, 521, 436–444. DOI 10.1038/NATURE14539

Leydesdorff, L., & Wagner, C. (2008). International collaboration in science and the formation of a core group. Journal of Informetrics, 2(4), 317–325.

Li, Y., Gunasekeran, D. V., RaviChandran, N., Tan, T. F., Ong, J. C. L., Thirunavukarasu, A. J., ... & Ting, D. S. (2024). The next generation of healthcare ecosystem in the metaverse. Biomedical Journal, 47(3), 100679.

Ismail, A., Munsi, H., Yusuf, A. M., & Hijjang, P. (2025). Mapping one decade of identity studies: a comprehensive bibliometric analysis of global trends and scholarly impact. Social Sciences, 14(2), 92.

Ma, S., & Zhang, L. (2024). Enhancing tourists' satisfaction: Leveraging artificial intelligence in the tourism sector. Pacific International Journal, 7(3), 89–98.

Maksymowych, W. P., Lambert, R. G., Baraliakos, X., Weber, U., Machado, P. M., Pedersen, S. J., ... and Ostergaard, M. (2021). Data-driven definitions for active and structural MRI lesions in the sacroiliac joint in spondyloarthritis and their predictive utility. Rheumatology, 60 (10), 4778-4789. DOI 10.1093/RHEUMATOLOGY/KEAB099

Nair, P. (2024, April 8). Augmenting medical tourism with the metaverse.
https://insights.omnia-health.com/technology/augmenting-medical-tourism-metaverse

Saleh, M. I. (2025). Generative artificial intelligence in hospitality and tourism: Future capabilities, AI prompts and real-world applications. Journal of Hospitality Marketing & Management, 34(4), 467–498.

Sharma, S., Chauhan, Y., & Tyagi, R. (2023). Artificial Intelligence–based applications in medical tourism. In 2023 14th International Conference on Computing Communication and Networking Technologies (ICCCNT) (pp. 1–6). IEEE.

Smith, M. (2015). Baltic health tourism: Uniqueness and commonalities. Scandinavian Journal of Hospitality and Tourism, 15(4), 357–379.

Vention. (2025, March 8). AI in healthcare: 2024 stats explained.
https://ventionteams.com/healthtech/ai/statistics

Weißensteiner, A. A. A. (2018). Chatbots as an approach for a faster enquiry-handling process in the service industry. Signature, 12(04).

Yadigarova, L. (2025). Bibliometric Analysis of the Impact of International Research Collaborations: Insights from Social Sciences. International Scientific Journal of Universities and Leadership, (19), 37-48.

Yılmaz, F., Mete, A. H., Türkön, B. F., & İnce, Ö. (2022). Sağlık hizmetlerinin geleceğinde metaverse ekosistemi ve teknolojileri: uygulamalar, fırsatlar ve zorluklar. Eurasian Journal of Health Technology Assessment, 6(1), 12–34.

Xu, L., Sanders, L., Li, K., & Chow, J. C. (2021). Chatbot for health care and oncology applications using artificial intelligence and machine learning: systematic review. JMIR Cancer, 7(4), e27850. DOI 10.2196/27850