The Rise of AI in Iranian Medical Research: A Bibliometric Analysis

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Abstract- Artificial intelligence-powered healthcare system enhances disease prediction, diagnosis, and therapy, providing advantages to patients and healthcare practitioners. In this regard, this study aims to analyze the evolution of artificial intelligence (AI) research within Iranian healthcare from 2000 to 2025, focusing on its implications for medical practice and patient outcomes. A bibliometric analysis was conducted using data retrieved from the Web of Science Core Collection. The analysis included publication trends, leading authors, institutions, and keyword dynamics, emphasizing the significance of machine learning and predictive analytics in clinical applications. Our findings reveal a significant 13.1-fold increase in AI-related publications over the past decade, underscoring AI's growing role in healthcare advancements in Iran. Islamic Azad University emerged as the leading institution, while key authors and collaborative networks were identified. The keyword analysis highlighted "Machine Learning" as the most frequent term, indicating a shift towards predictive analytics in medical research. The results emphasize the transformative potential of AI in enhancing clinical decision-making and patient care delivery systems. As AI continues to integrate into healthcare practices, it presents opportunities for improved patient outcomes. This study serves as a vital resource for practitioners and policymakers aiming to effectively harness AI's capabilities in the Iranian healthcare landscape.

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Introduction

Demonstrating artificial intelligence (AI) as machine intelligence at a level similar to that of a human was a concern for researchers and continues today. In other words, AI allows machines to modify or improve human brain capabilities. Robotics, image processing, sample text, and visualization are among the things in which AI is involved (1).

Although researchers have introduced many definitions, there is no widely precise definition. The term "artificial intelligence" generally encompasses programming a computer to exhibit behaviors that are considered intelligent if performed by a human (2).

AI is primarily propelled by significant advancements in processing power and even more substantial growth in data generation. By integrating enhanced algorithms facilitating machine learning model training, numerous advanced technology enterprises can execute jobs that closely approximate or surpass human performance. Artificial intelligence is anticipated to profoundly transform healthcare services (3).

An AI-powered healthcare system enhances disease prediction, diagnosis, and therapy, providing advantages

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to patients and healthcare practitioners (4). AI can benefit and aid clinicians in many ways, such as diagnostics and improving decision-making, by processing enormous healthcare datasets, making insightful conclusions and predictions, speeding up workflows, and meeting patient demands (5).

Artificial intelligence, namely, machine learning methods, is mostly used to diagnose medical conditions and predict healthcare results (6). It assists healthcare staff in discerning symptoms and administering treatment to patients (7). AI can improve the accuracy of diagnoses by imitating clinicians' prediction skills and quickly, thoroughly, and ultimately examining patients' electronic health records (8).

Consequently, there has been a consistent increase in the number of academic papers focused on AI in healthcare. By performing a bibliometric analysis of healthcare-focused AI studies, researchers with a framework can gain a deeper understanding of the growth of AI research in healthcare and the potential future directions of trends and developments. To stay abreast of the swiftly growing field of AI research in healthcare, practitioners, and policymakers must grasp the chances presented by AI interventions to increase the welfare of patients and carers. A frequently used research methodology to ascertain a subject's prevailing pattern and present state in a scientific and scholarly manner, bibliometrics employs qualitative statistical techniques to examine books, papers, and other publications, particularly those with scientific content (9). Furthermore, it acts as an excellent reference for individuals seeking to comprehend the practical application of an intelligent system in healthcare, provided that they possess a foundational understanding of the topic (10).

Contemporary empirical analyses and documented instances highlight that artificial intelligence (AI) serves as a catalyst for healthcare transformation, optimizing patient treatment and institutional performance. According to reports, AI can recognize the subtypes of sepsis and acute respiratory distress syndrome using the Medical Information Mart for Intensive Care database and provide an accurate diagnosis utilizing a pathology visual and text analysis method (11). The AI platform IBM Watson supports oncologists in cancer diagnosis and therapy planning, drawing upon a comprehensive repository of medical research and historical patient records. Studies have validated Watson's therapeutic suggestions; for instance, research conducted at Memorial Sloan Kettering Cancer Center indicated a high level of agreement between the system's outputs and expert clinical assessments, underscoring AI's potential to refine diagnostic precision and support clinical decisions (12). Additionally, a predictive analytics framework at the University of Chicago Medicine evaluates the risk of patient deterioration with considerable accuracy. This functionality is powered by persistent analysis of electronic health records(EHRs) enabling the platform to proactively address and mitigate such clinical scenarios (13). Furthermore, natural language processing (NLP) techniques extract actionable insights from unstructured text within EHRs. At the Mayo Clinic, NLP algorithms analyze patient data to guide critical decisions regarding clinical trial eligibility (14). These real-world implementations illustrate that AI transcends theoretical discussion and is actively leveraged to enhance patient care and streamline routine healthcare operations.

Individualized diagnosis and therapy are desperately needed when new treatments and medications are developed. However, nothing is known about how AI may be used with patients, and it is still unclear where AI will be used and developed over the next ten years. Despite its advancements worldwide, there are still many obstacles to the successful acceptance and application of AI in healthcare, particularly in Iran (15). Therefore, the primary purpose of this study is to conduct a series of distinctive analysis activities, such as bibliometric and topic modeling analysis, in the present research environment concerning the utilization of AI in healthcare in Iran. The paper primarily examines the use of bibliometric analytics tools to assess academic papers. This includes analyzing document patterns, identifying the top 5 authors, determining the top 10 most cited countries and documents, studying keyword dynamics, and exploring trend topics.

This paper is organized and prepared in various sections. Section 2 provides an analytic approach for data gathering. Section 3 comprises a bibliometric study that examines document patterns, identifies the five most prominent authors, determines the ten countries that work with Iran and earn the highest number of citations, identifies the top five universities, studies the leading five journals, and identifies the five most significant keywords. Section 4 discusses the topic's trends and limitations. Section 5 presents concluding remarks.

Materials and Methods

Data acquisition and gathering

Web of Science serves as a principal multidisciplinary database and an independent global citation repository,

drawing on publications from highly trusted international publishers across hard sciences, social sciences, arts, and humanities (16). To guarantee data validity, representativeness, and accessibility, the study relied on the Web of Science Core Collection (WoSCC) database. The following search terms were employed to retrieve literature from WoSCC regardless of language or document type: (TI=("Artificial intelligence" OR "machine learning" OR "Image processing" OR "Natural language processing" OR "Neural network*" OR "deep learning") OR AB=("Artificial intelligence" OR "machine learning" OR "Image processing" OR "Natural language processing" OR "Neural network*")) AND (AD=(iran) OR TI=(iran) OR AB=(iran) OR CU=(iran) OR OG=(iran)) AND (TI=(medicine OR pharmacy OR dentistry OR biology OR nutrition OR epidemiology OR dermatology OR surgery OR microbiology OR Orthopedics OR cancer OR gene OR genetics OR Neurology OR oncology OR pathology OR nurse* OR Urology OR cardiology OR endocrinology OR gastroenterology OR radiology OR laboratory medicine OR neurosurgery OR cardiovascular surgery OR psychiatry OR clinical psychology OR pediatrics OR geriatrics) OR AB=(medicine OR pharmacy OR dentistry OR biology OR nutrition OR epidemiology OR dermatology OR surgery OR microbiology OR Orthopedics OR cancer OR gene OR genetics OR Neurology OR oncology OR pathology OR nurse* OR Urology Or clinical decision-making Or diagnostic procedures Or treatment planning Or patient care management Or healthcare delivery systems Or clinical trial methodology Or patient outcome measures Or disease prognosis indicators Or mortality studies Or quality of care metrics)). The retrieved data were collected on December 29, 2024, to avoid any potential deviation due to daily updates.

Data analysis

Bibliometrix (An R package, version 4.2) and VOSviewer (v.1.6.22) were used to analyze all 2040 documents. VOSviewer (bibliometric software) is a Java-based free software developed by Van Eck and Waltman of the Center for Science and Technology Studies (CWTS) of Leiden University in the Netherlands in 2009. It has strong graphic ability and is suitable for processing large-scale data (17). Figure 1 shows the flowchart for this study's selection process.

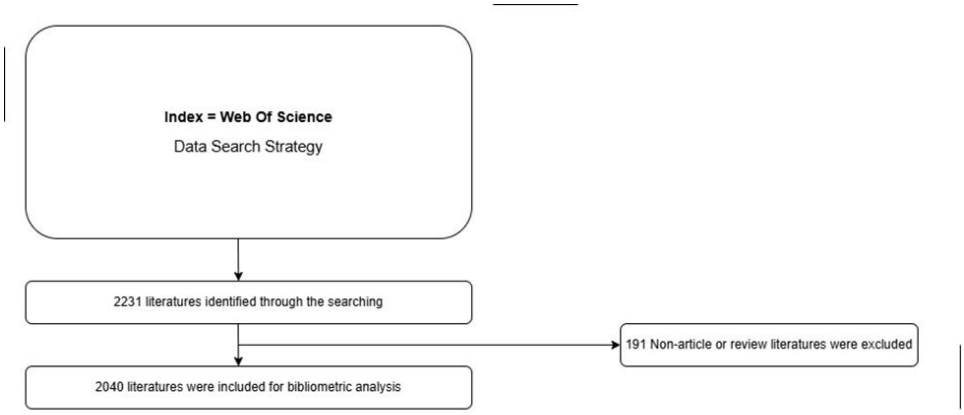

Figure 1. Flow chart of the literature collection process

Results

Distribution by regions/countries

The analyzed AI research from Iran involved collaborations across a total of 103 countries and regions. As depicted in Figure 2A, Iran serves as the central hub of research activity, demonstrating strong collaborative ties with the United States, Europe, and Asia.

Figure 2B visualizes the collaboration network among the top 25 partner countries those that have co-authored more than 20 publications and received over 200 citations with Iran. These nations are classified into four distinct clusters, each represented by a different color. Table 1 summarizes the leading countries by citation and publication count. The United States leads in citations (5,257), followed by Australia (3,044) and Canada (2,763). In terms of publication volume, the United States also ranks first (301 documents), ahead of Canada (148) and Australia (139). Overall, the USA, Australia, Canada, England, and China emerge as the most active

collaborators in AI research with Iran.

To further evaluate international collaboration, we calculated Single Country Publications (SCP) and Multiple Country Publications (MCP) for each nation (Figure 2C). In this diagram, red connections indicate MCPs (involving foreign co-authors), while blue lines represent SCPs. The analysis indicates that the majority of papers are single-country publications, suggesting that international collaborative efforts in AI research, while present, could be further strengthened.

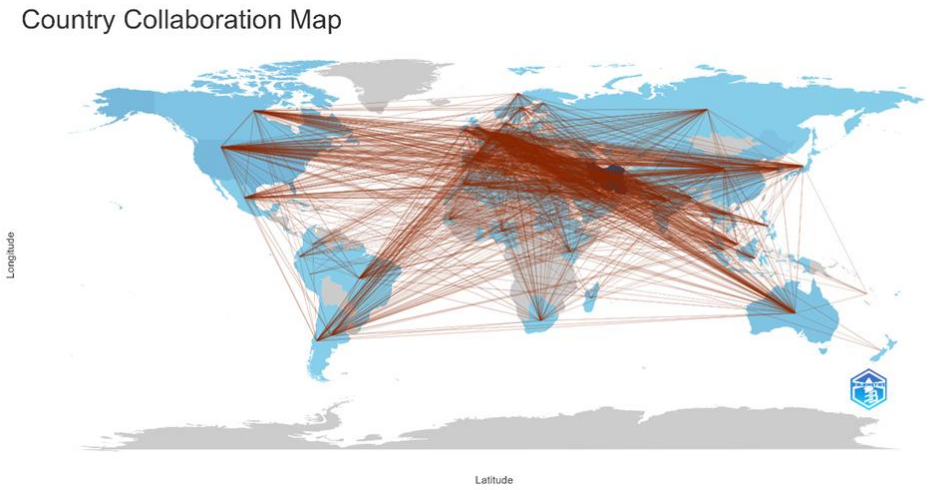

Figure 2A. Collaboration Map of Countries/Regions Involved in Iranian AI Research. This figure illustrates the collaboration map of countries and regions engaged in Iranian AI research. The links between countries and regions represent the connections and collaborative relationships established in this field. The degree of involvement of each country or region is indicated by the depth of color and the number of links; darker colors and a greater number of connections signify higher levels of participation and collaboration

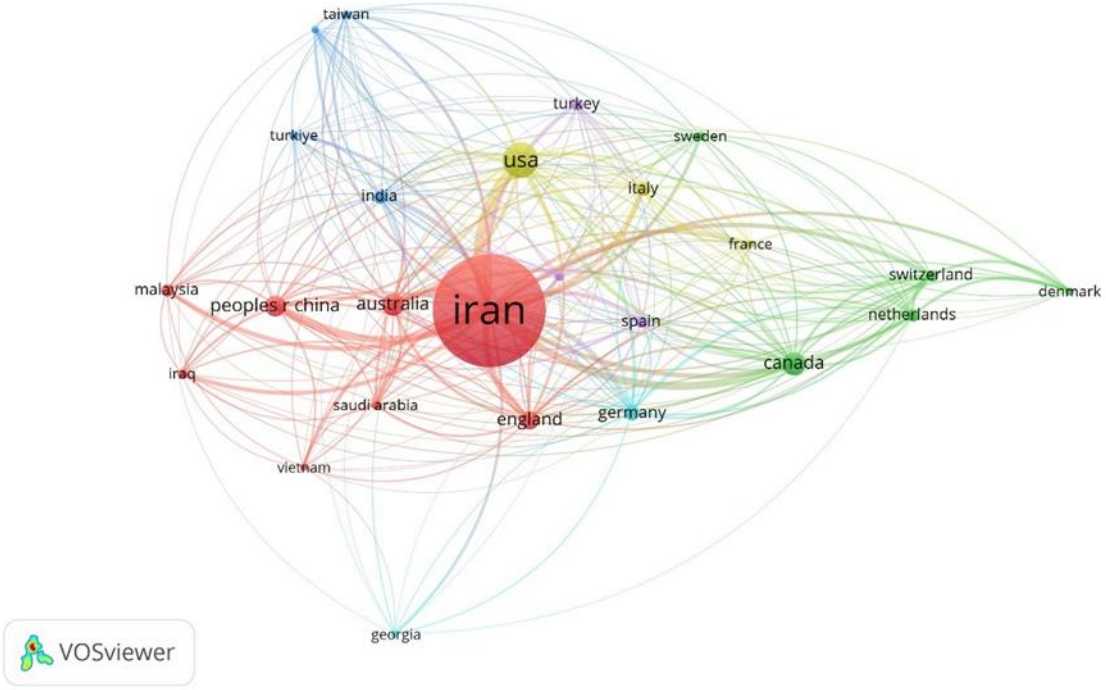

Figure 2B. Collaboration Network Analysis Visualized in VOSviewer. This figure presents a collaboration network analysis of the top countries that have produced more than 20 documents and received over 200 citations. The visualization, created using VOSviewer, employs color-coded clusters to represent the degree of collaboration between countries and regions. Each cluster's distinct color indicates varying levels of collaborative engagement, while the size of the nodes reflects each country's contribution to the research output and their degree of involvement in the collaborative network

Figure 2C. Analysis of Country Publications Based on Collaborative Relationships. This figure illustrates the analysis of publications by countries, emphasizing their collaborative relationships. The red lines represent publications originating from single countries, indicating the number of documents produced by individual nations. In contrast, the blue lines denote publications resulting from collaborations between multiple countries, reflecting the collective output of international partnerships

Table 1. Analysis of Top 10 Countries by Number of Articles, Total Citations, and Total Link Strength

Rank	Countries	Record Count	Citations	Total link strength
1	USA	301	5257	734
2	Canada	148	2763	416
3	Australia	139	3044	429
4	China	127	2551	341
5	England	101	1914	346
6	Germany	73	1115	296
7	Italy	64	1045	244
8	India	61	1118	244
9	Netherlands	53	900	219
10	Malaysia	53	867	129

Distribution of institutions

The leading ten institutions, ranked by their publication output in AI research related to Iran, are presented in Table 2. Islamic Azad University leads with the highest number of publications (361), indicating its prominent role in this field. The collaborative network among these institutions is illustrated in Figure 3A. Node size corresponds to publication volume, and linkages reflect cooperative relationships. The institutions are grouped into nine distinct clusters based on their collaborative patterns. Figure 3B presents an overlay visualization of the same network based on the average publication year, where warmer colors denote more recent publications and cooler colors represent earlier work.

Table 2. Top 10 Institutions by Number of Publications, Total Citations, and Total Link Strength

Rank	Institutions	Record Counts	Citations	Total link strength
1	Islamic Azad University	360	5773	498
2	Tehran University of Medical Science	264	2773	561
3	Shahid Beheshti University of Medical Sciences	206	1887	491
3	University of Tehran	181	3027	276
4	Iran university of medical science	157	1834	443
5	Tarbiat Modarres University	115	1580	183
6	University of Tabriz	105	2935	116
7	Shiraz University of Medical Sciences	90	944	163
8	Tabriz University of Medical Sciences	85	873	152
9	Amirkabir University of Technology	84	1270	103
10	Mashhad University of Medical Sciences	81	771	230

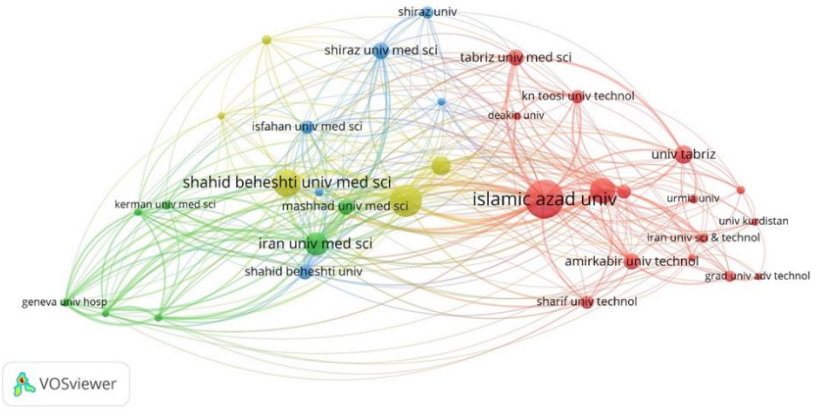

Figure 3A. Collaboration Network of AI-Related Institutions in Iran. This figure illustrates the collaboration network of the top 100 institutions that have published more than 20 documents and received over 200 citations in the field of AI research. In this network visualization, nodes are color-coded to represent distinct clusters of institutions, indicating collaborative relationships and thematic affiliations among them. The size of each node corresponds to the number of publications produced by the institution, serving as a measure of its research

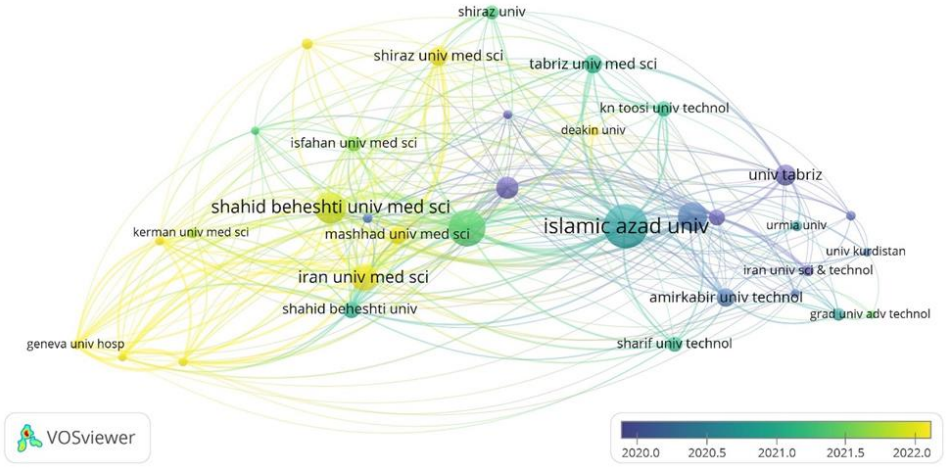

Figure 3B. Analysis of AI-Related Institutions in Iran. This figure presents an analysis of institutions engaged in AI research, depicted through an overlay map of the collaboration network based on publication year. In this visualization, warm colors represent institutions with a more recent average publication year, indicating a contemporary focus on AI research. Conversely, cold colors denote institutions with earlier average publication years, reflecting historical contributions to the field

Distribution of authors

The top three authors publishing articles in the field of AI are Ozgur Kisi, Jalal Shiri, and Isaac Shiri. Table 3 also shows most citations author's article is related to Ozgur Kisi with 1670 citations.

Figure 4 maps the co-authorship network for authors with more than 5 publications and 10 citations. Researchers are categorized into five color-coded clusters based on their collaborative ties. Larger node sizes signify stronger collaborative connections, with the red cluster particularly highlighting a highly active and interconnected research group.

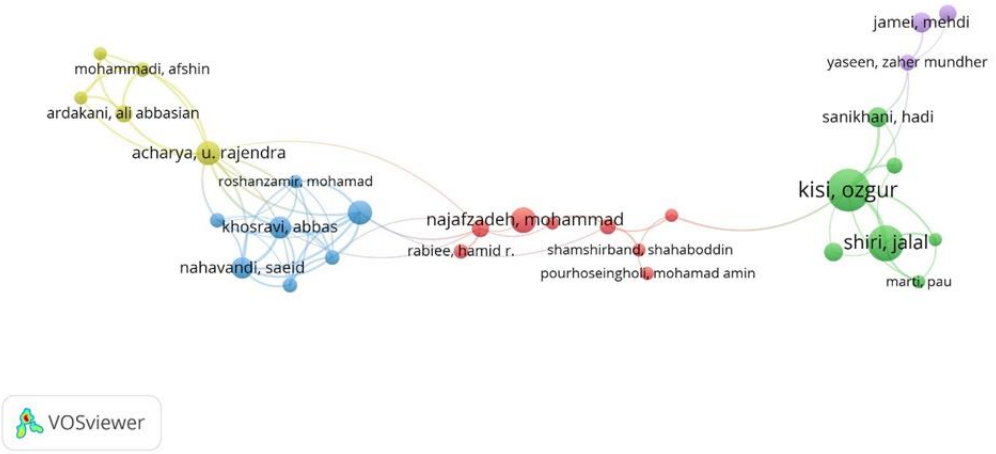

Figure 4. Collaboration Network of Top Co-Authors. This figure illustrates the collaboration network of the top coauthors who have published over 5 documents and received over 10 citations. In this network visualization, nodes are color-coded to represent distinct clusters of authors, indicating collaborative relationships within the scholarly community. Each node's size corresponds to the authors' total link strength, reflecting their interconnectedness and influence within the network

Distribution of journals

As listed in Table 4, Scientific Reports was the journal with the highest number (91 publications) of publications on the use of AI in medicine in Iran, followed by Biomedical Signal Processing and Control (36 publications), Computers in Biology and Medicine (33 publications), PLoS ONE (29 publications), and BMC Medical Informatics and Decision Making (25 publications). Among them, the journal with the highest IF is Computers in Biology and Medicine (7.70) with IF greater than 5.

Table 3. Top 10 authors by number of documents

Ranks	Author	Documents	Citations	Total link Strength
1	Ozgur Kisi	35	1670	39
2	Jalal Shiri	26	1376	27
3	Isaac Shiri	21	622	59
4	Habib Zaidi	19	461	58
5	Ghasem hajianfar	15	329	50
6	Mohammad Najafzadeh	15	430	2
7	Rajendra U. Acharya	14	438	51
8	Roohallah Alizadehsani	14	591	37
9	Hamid Abdollahi	14	461	32
10	Hossein Mohammad Rahimi	14	175	5

Table 4. Top 10 journals by number of publications, impact factor (IF), and journal cite score quartile

Rank	Journal	Number of Publications	IF (2023)	CiteScore Quartile
1	**Scientific reports**	91	3.8	Q1
2	**Biomedical signal processing and control**	36	4.9	Q1
3	**Computers in biology and medicine**	33	7.0	Q1
4	**PLoS ONE**	29	2.9	Q1
5	**BMC medical informatics and decision making**	25	3.3	Q1
6	**Diagnostics**	19	3.0	Q2
7	**Neural computing and applications**	18	4.5	Q1
8	**Journal of medical signals and sensors**	18	1.3	Q3
9	**Heliyon**	17	3.4	Q1
10	**Applied soft computing**	16	7.2	Q1

Keywords analysis

Keyword analysis identifies core research themes and hotspots. Table 5 lists the top 20 keywords by frequency, with "Machine Learning" (560) as the most frequent, followed by "Prediction" (515) and "Classification" (447). underscoring the central role of these interconnected concepts in Iran's AI research landscape.

The temporal evolution of these keywords over the past two decades is shown in Figure 5A. A notable surge in frequency is observed from 2019 to 2024, a trend potentially accelerated by the COVID-19 pandemic. Figure 5B tracks terms used over 30 times annually, revealing shifts in thematic focus: recent high-frequency keywords include "lesion," "future," and "migration," whereas earlier research emphasized "genetic algorithm," "ANN," and "artificial neural network," signifying a move toward more applied and specific research areas.

The co-occurrence network of keywords (Figure 5C) organizes them into three primary clusters: a red cluster centered on prediction, a blue cluster on machine learning, and a green cluster on classification. This structure highlights the multidimensional application of AI across epidemiological, clinical, and therapeutic research.

Table 5. Analysis of top 20 keywords by occurrences and total link strength

Rank	Keywords	Occurrences	Total link strength	Rank	Keywords	Occurrences	Total link strength
1	Machine Learning	560	345	11	Algorithm	159	88
2	Prediction	515	266	12	Breast Cancer	145	87
3	Classification	447	247	13	Segmentation	160	81
4	Artificial Intelligence	329	214	14	System	130	75
5	Deep learning	345	183	15	Covid-19	112	74
6	Model	341	181	16	Optimization	131	69
7	Diagnosis	234	136	17	Performance	143	68
8	Artificial Neural Network	279	121	18	Neural Network	113	67
9	Cancer	168	93	19	Risk	112	51
10	Gene Expression Programming	135	92	20	Regression	91	50

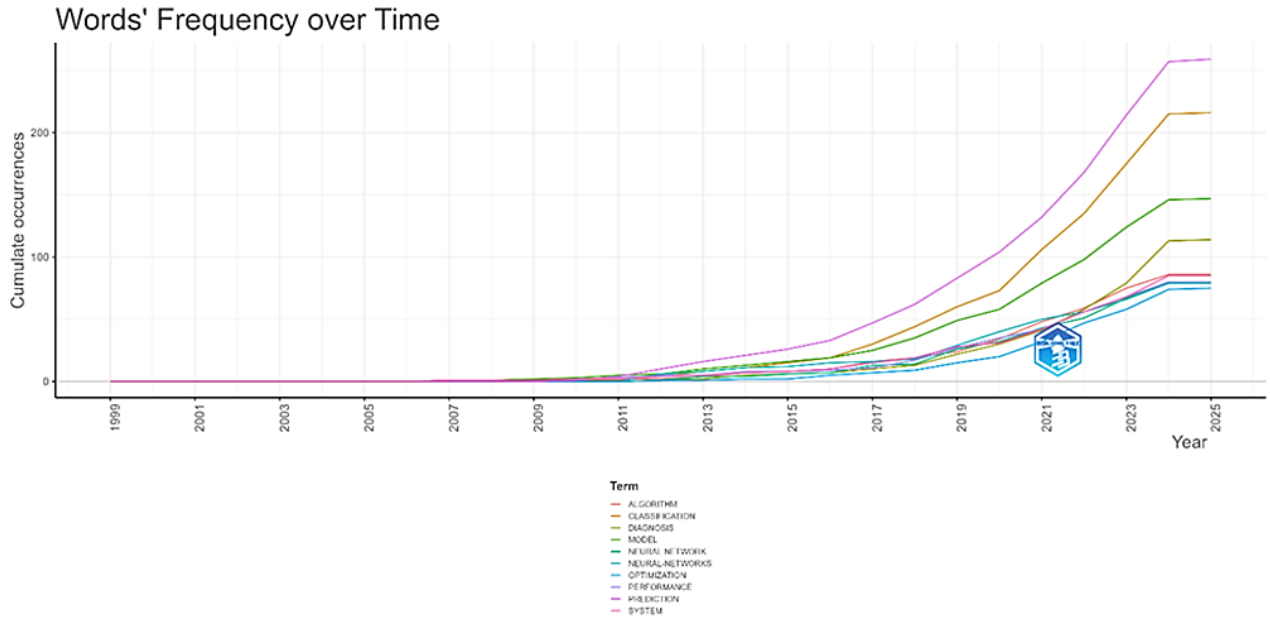

Figure 5A. Analysis of Word Frequency Over Time. This figure depicts an analysis of the frequency of words with the highest occurrences over the past 20 years. The data illustrates trends in word usage, highlighting which terms have been most prevalent in the literature during this period

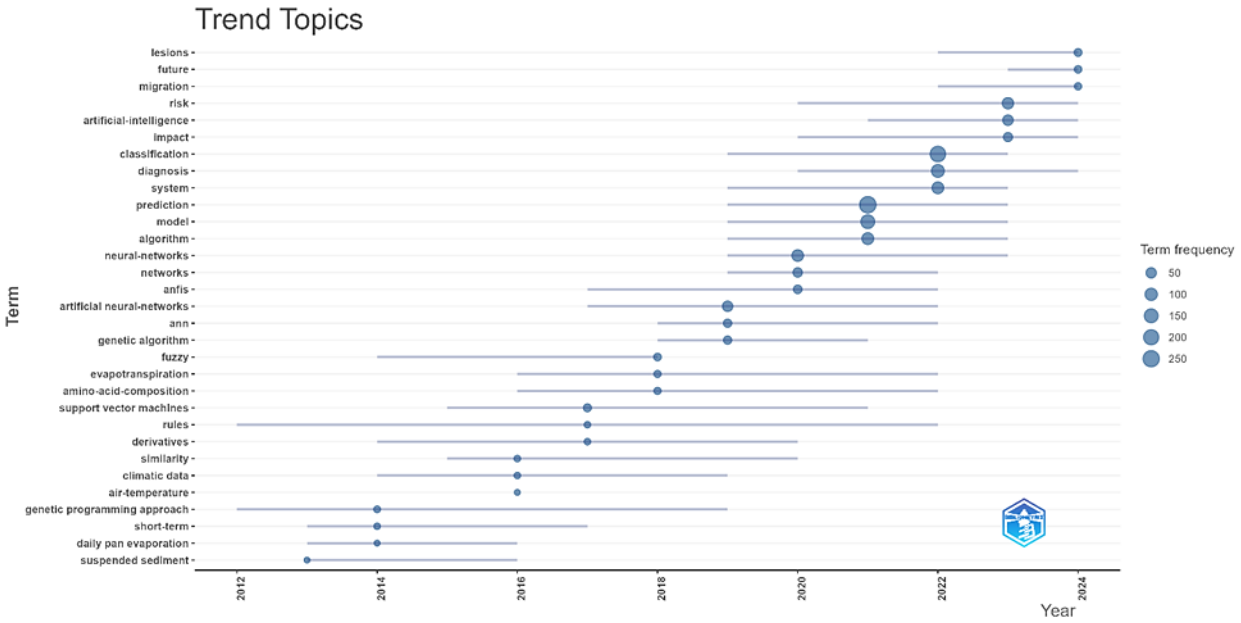

Figure 5B. Visualization of Word Occurrence. This figure visualizes word occurrences that meet an annual frequency threshold of 30. The network's nodes represent the years when specific words were most frequently used in the literature

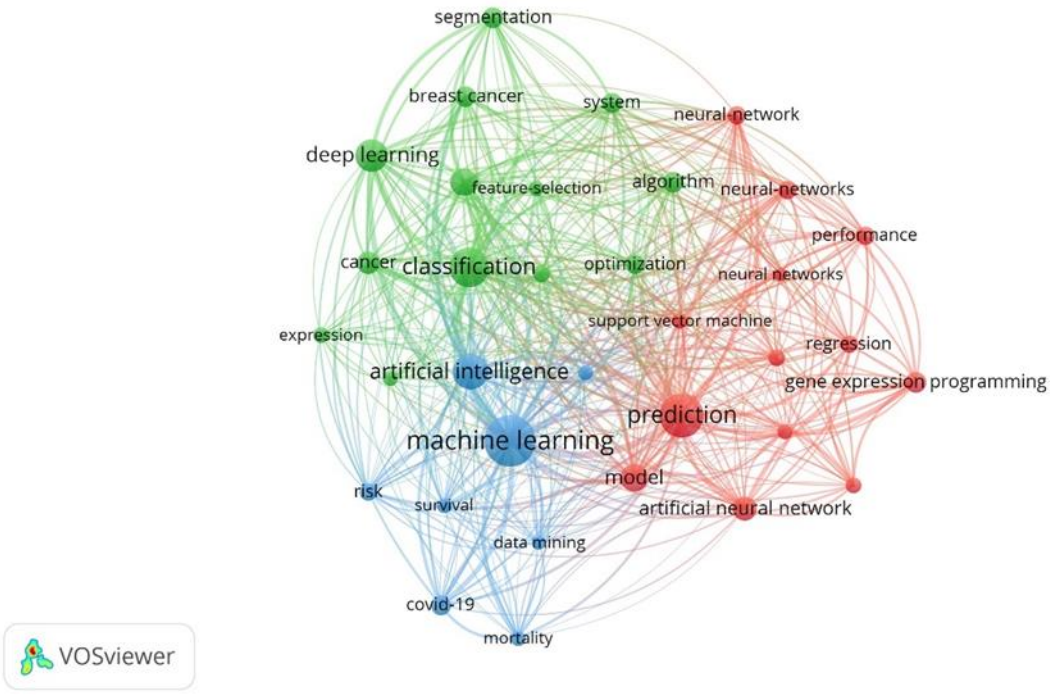

Figure 5C. Network of Keyword Co-Occurrence. This figure displays a network of keyword co-occurrence created by setting an annual frequency threshold of 50 occurrences. The network visualization emphasizes the relationships and interactions among the keywords found in the literature, illustrating how often they appear together in published works

Research hotspots and frontier analysis

Table 6 lists the top 5 articles ranked by Citations count within the field of AI research. The article with the highest number of citations is "Enhanced probabilistic neural network with local decision circles: A robust classifier" (Ahmadlou *et al.*,) (329), Next, "Benign and malignant breast tumors classification based on region growing and CNN segmentation" (Rouhi *et al.*,) (270)

and the third-ranking article is titled "Predicting Standardized Streamflow index for hydrological drought using machine learning models" (Shamshirband *et al.*,) (228).

Annual citation trends for AI studies are plotted in Figure 6. A steady increase is seen from 2000 to 2015, followed by a sharp rise from 2015 to 2020—a pattern that may reflect intensified research focus during the COVID-19 pandemic. This trend underscores how global health crises can significantly influence scientific attention and citation dynamics.

Table 6. Top 5 References by Citation Frequency

Rank	Article title	First Author	Year	Total citations	DOI
1	Enhanced probabilistic neural network with local decision circles: A robust classifier	Mehran Ahmadlou	2010	329	10.3233/ICA-2010-0345
2	Benign and malignant breast tumors classification based on region growing and CNN segmentation	Rahimeh Rouhi	2015	270	10.1016/j.eswa.2014.09.020
3	Predicting Standardized Streamflow index for hydrological drought using machine learning models	Shahabbodin Shamshirband	2020	228	10.1080/19942060.2020.1715844
4	Predicting anticancer peptides with Chou's pseudo amino acid composition and investigating their mutagenicity via Ames test	Zohre Hajisharifi	2014	226	10.1016/j.jtbi.2013.08.037
5	A robust data mining approach for formulation of geotechnical engineering systems	Amir Hossein Alavi	2011	209	10.1108/02644401111118132

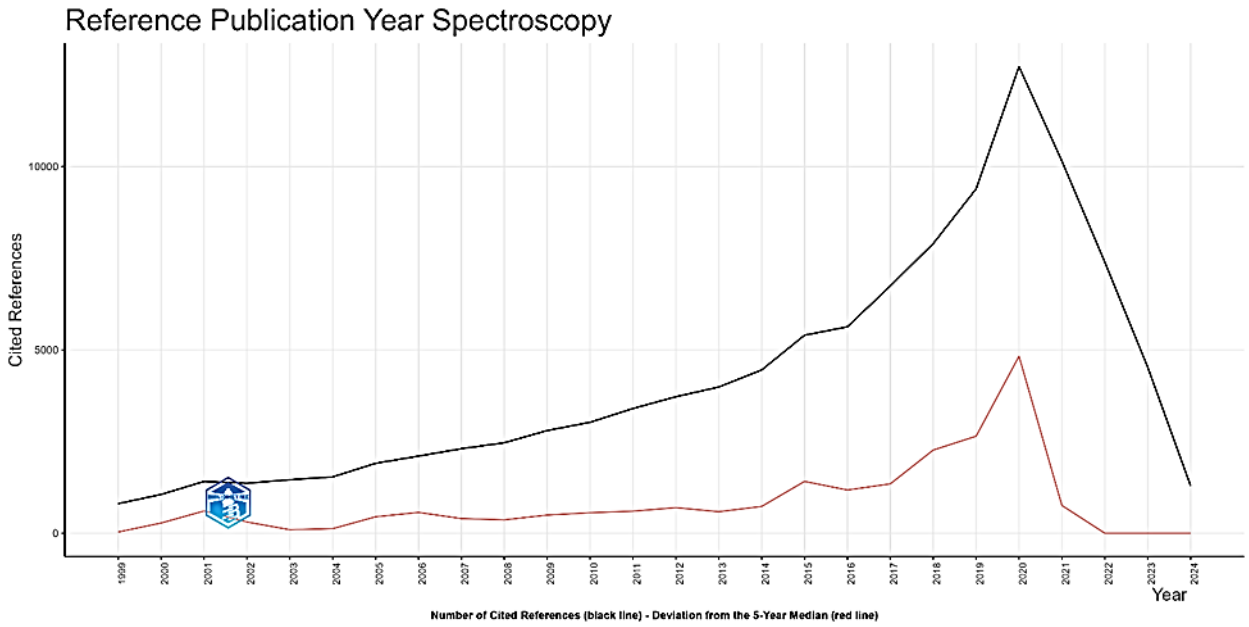

Figure 6. Analysis of Cited References. This figure analyzes the count of cited references over time. The black line shows the annual number of cited references, while the red line represents the calibration curve

Discussion

The medical and health care industry is heavily influenced by advances in technology and the use of advanced technologies, especially artificial intelligence (18). The results of this study indicate significant growth in the number of publications and both domestic and international collaborations in the field of artificial intelligence and its various aspects in Iran. This rapid growth reflects a transformation in medical science research and the enthusiasm of researchers toward the use of artificial intelligence in Iran, with the number of published articles in this area increasing from one article in 2001 to 433 articles in 2023.

Overall, this analysis revealed a continuous increase in the number of publications related to artificial intelligence in medicine, with notable acceleration in recent years, confirming a 13.1-fold growth in the number of articles related to artificial intelligence in the medical sciences in Iran over the past decade (2014-2023), indicating a fundamental transformation in this field.

Although this increase in the number of articles began gradually in 2007, the most significant increase occurred between 2018 and 2023, during which the number of articles in 2023 was approximately 7.4 times greater than that in 2018.

The crucial role of the COVID-19 pandemic in this situation cannot be overlooked. With the onset of the pandemic, the use of artificial intelligence and machine learning has expanded significantly, playing a vital role in various aspects of disease management, such as early diagnosis, virus tracking, optimizing resource allocation, and accelerating vaccine discovery and development (19).

In this study, we ranked the published articles on the use of artificial intelligence in medical sciences based on the most frequently used keywords, with the four most common keywords being "machine learning," "prediction," "classification," and "COVID-19." The inclusion of the keyword "COVID-19" among the top four highlights the pandemic's importance in expanding the use of artificial intelligence in medical sciences. The necessity for international collaboration in medical issues, especially in advanced technologies such as artificial intelligence, is undeniable. In recent years, medical research has increasingly become an international and collaborative process, transforming into a transnational and transcultural field. The fact that one-fifth of scientific and medical articles have coauthors from different countries attests to this trend. International collaboration has emerged as a significant phenomenon in scientific research and has received substantial funding support from research funding agencies (20).

In this context, the results of this study indicate the expansion of international collaboration in the use of artificial intelligence in medical sciences in Iran, particularly with leading research nations such as the USA and China. Among various countries, the highest number of joint publications in this field has been with the USA, recognized as a leader in this area, where the number of researchers per million people is significantly greater than that in other countries (21).

Notably, the highest number of citations for articles in this field also pertains to joint publications with countries such as the USA, Canada, Australia, and China, highlighting the importance of conducting collaborative research with prominent countries to increase the visibility and applicability of research findings. The increased accuracy of artificial intelligence tools, such as machine learning, in diagnosing and predicting diseases and their outcomes, along with the importance of personalized medicine and other aspects of patient diagnosis and treatment, has led to a growing use of artificial intelligence in medical research, particularly in cancer studies. Moreover, the importance of classifying cancer patients into high-risk and low-risk groups has significantly encouraged the use of machine learning tools in the fields of bioinformatics and biomedicine (22). Consistent with these points, the term "cancer" has frequently been used in conjunction with artificial intelligence in this study, indicating the expansion of various aspects of artificial intelligence in cancer management in Iran. Additionally, the importance of applying artificial intelligence and machine learning in genetic studies and gene expression has been frequently highlighted. According to the results of this study, the use of artificial intelligence in genetic research and gene expression in Iran is also increasing, similar to trends observed in other countries.

The application of artificial intelligence and machine learning, such as discovering complex relationships among gene expression profiles, personalized medicine, identifying relevant biomarkers, predicting disease outcomes on the basis of individuals' genetic traits, and identifying individuals predisposed to diseases on the basis of their genetic characteristics, has led to widespread utilization of this knowledge in the genetic field (23).

Finally, it should be noted that the expansion of various aspects of diseases, access to large datasets, and the complexity of relationships between diseases and their associated risk factors have made the use of new technologies, including artificial intelligence, essential. Sharing knowledge, data, human resources, and other issues related to medical research will contribute to a better and more effective application of these technologies. As the results of this study indicate, Iran, like other countries, has rapidly expanded the use of artificial intelligence in medical research in recent years, and adopting a collaborative international approach can be a highly effective step in conducting more cohesive research and making the results more applicable.

Limitations

First, to maintain analytical rigor, our data were sourced exclusively from the Web of Science Core Collection (WoSCC), a leading database for scholarly publications. Consequently, relevant studies published in non-SCI journals or indexed in other databases (e.g., Scopus, PubMed) were excluded, which may affect the comprehensiveness of the dataset.

Second, while VOSviewer is a powerful tool for

visualizing bibliometric networks, it does not supplant systematic review methods and is primarily suited for macro-level trend analysis rather than in-depth qualitative assessment. Third, bibliometric indicators, such as citation counts, are inherently time sensitive. Newer publications naturally accumulate fewer citations than older, more established works, which can skew comparative assessments of research impact. Therefore, citation metrics should not be interpreted as a direct measure of individual study quality. While these constraints may introduce minor biases, they are unlikely to alter the principal trends and conclusions identified in this analysis.

Overall, this study offers a valuable overview and establishes a foundational understanding of research themes, hotspots, and evolving directions in the application of AI within Iran's medical field.

Through a detailed bibliometric analysis of the use of artificial intelligence in medicine in Iran, this study evaluates the literature information of different years, countries, institutions, authors, disciplines, and journals and analyzes the theme development and future research hotspots. Our study revealed that the field of AI usage in medicine began to garner attention in Iran in 2001. Our study provides basic information about research in this field and identifies potential partners for interested researchers. Current research hotspots, which include machine learning, prediction, and classification, are the frontiers of research in this field and are currently emerging.

This bibliometric analysis highlights the significant growth of artificial intelligence (AI) research in Iranian healthcare from 2000 to 2025, marked by a 13.1-fold increase in publications over the past decade. The findings underscore the pivotal role of AI in enhancing medical practice and patient outcomes, with key contributions from leading institutions and authors. Notably, "Machine Learning" emerged as the most prevalent keyword, reflecting a focused interest in predictive analytics within clinical settings. Despite these advancements, challenges such as data privacy and infrastructure remain barriers to effective AI implementation. This study serves as a crucial resource for practitioners and policymakers, emphasizing the need for collaborative efforts to leverage AI's potential fully. As AI continues to evolve, its integration into healthcare practices promises to improve decision-making processes and optimize patient care delivery systems across Iran.

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