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The First Edition of the International Multidisciplinary Congress in Health Sciences (CIMSS 2025): Health and the Future: A Hub for Expertise and Innovation

Ridouan HAMMOUCH[1, 2]*, Rian BOUAZZAOUI [1] and Anass JAOUHER [3]

[1] *Higher Institute of Nursing Professions and Health Techniques, Laboratory of Health Sciences, Quality and Environment (ESSQE), (Researcher, Team 3: Management, Law and Health Economics), Oujda, Morocco.*

[2]*Mohammed First University, Faculty of Legal, Economic and Social Sciences, Laboratory of Legal and Social Sciences (LSJS), (Associate Member), Oujda, Morocco*

[3]*Higher Institute of Nursing Professions and Health Techniques, Oujda, Morocco.*

**Corresponding author, Email address: r.hammouch@ump.ac.ma*

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Abstract:

The First International Multidisciplinary Congress in Health Sciences (CIMSS 2025) brought together experts from diverse academic and professional backgrounds to promote interdisciplinary responses to contemporary health challenges. This article aims to analyze the objectives, scientific structure, and expected impact of the congress by situating it within the existing literature on multidisciplinary collaboration in health sciences. CIMSS 2025 was structured around multiple complementary disciplinary fields, including medical sciences and clinical innovations, nursing sciences and care practices, health management and governance, health law, architectural sciences, psychosociology of health, education and research, media and health journalism, big data and artificial intelligence, sport and nutrition, as well as clinical pharmacy and pharmaceutical innovations in public health. By fostering cross-disciplinary dialogue, the congress sought to encourage knowledge integration, innovation, and evidence-based decision-making across health systems. While the literature highlights that multidisciplinary approaches improve healthcare outcomes and strengthen professional collaboration, it also identifies persistent challenges related to coordination, governance, and implementation. CIMSS 2025 thus represents a strategic platform for advancing integrated, innovative, and sustainable health systems capable of addressing current and future societal needs.

Keywords: Multidisciplinary health sciences; Interdisciplinary collaboration; Health systems; Innovation in healthcare; Health governance.

I. Introduction

The First International Multidisciplinary Congress in Health Sciences (CIMSS 2025) brought together experts from diverse domains to explore interdisciplinary solutions to contemporary health challenges, reflecting the growing need for integrated and collaborative approaches in health systems worldwide. The congress was designed as a comprehensive scientific platform fostering dialogue and knowledge exchange across multiple disciplinary fields that collectively shape modern healthcare.

The scientific program of CIMSS 2025 was structured around several complementary disciplinary axes. These included Medical Sciences and Clinical Innovations, emphasizing advances in diagnosis, treatment, and translational research; Nursing Sciences and Care Practices, highlighting the central role of nursing professionals in patient-centered care and health system performance; and Management, Governance, and Health Economics, addressing organizational efficiency, leadership, and sustainable financing of health services. In parallel, the congress devoted significant attention to Health Law and Regulatory Frameworks, examining ethical, legal, and normative dimensions governing healthcare delivery and professional practice.

Beyond traditional health disciplines, CIMSS 2025 adopted an expanded perspective by integrating Architectural Sciences, focusing on healthcare facility design and its impact on safety, accessibility, and quality of care, as well as Health Psychosociology, which explored psychosocial determinants of health, patient behavior, and professional well-being. The congress also underscored the strategic importance of Education, Research, Innovation, Media, and Health Journalism, recognizing their role in knowledge dissemination, public awareness, and evidence-based decision-making.

Emerging and future-oriented domains were prominently featured, particularly Big Data and Artificial Intelligence in the Health Sector, which addressed digital transformation, data-driven decision-making, and ethical challenges associated with new technologies. Additional axes included Health, Sport, and Nutrition, focusing on prevention, lifestyle-related diseases, and population health promotion, as well as Clinical Pharmacy and Pharmaceutical Innovations in Public Health, highlighting the expanding role of pharmacists in therapeutic optimization and health policy implementation. By integrating these diverse disciplinary fields, CIMSS 2025 illustrated both the potential and the complexity of multidisciplinary collaboration in health sciences. Existing literature consistently indicates that such approaches contribute to improved healthcare outcomes, enhanced professional cooperation, and greater system resilience. However, it also emphasizes persistent practical barriers, including disciplinary silos, governance constraints, and communication challenges. The congress therefore serves not only as a forum for scientific exchange but also as a strategic lever for advancing integrated, innovative, and legally sound health systems adapted to future societal needs.

The selection of disciplines, themes, and sub-themes for CIMSS 2025 was not made arbitrarily, but reflects a deliberate, evidence-based strategy. Guided by a bibliometric analysis of research indexed in major international databases, including Web of Science, this process allowed us to systematically identify the most active, impactful, and emerging areas of health sciences research. Such an approach ensures that the congress addresses scientifically relevant and timely issues, rather than following anecdotal or traditional disciplinary conventions. By grounding the choice of thematic axes in objective data, the congress not only aligns with current research trends but also anticipates future challenges and opportunities in healthcare. The following article presents a comprehensive bibliometric review, offering empirical justification for the congress's structure and highlighting the rationale behind prioritizing certain topics and interdisciplinary intersections.

II. Materials and Methods

This study systematically analyzed the evolution of scientific production related to the First International Multidisciplinary Congress in Health Sciences, "Health and the Future: A Crossroad of Expertise and Innovation." A bibliometric approach was employed to identify, quantify, and examine publications on this overarching theme, highlighting research trends, conceptual frameworks, and dominant methodologies.

The search strategy combined keywords using Boolean logic, structured around four main axes:

("health sciences" OR "health system*" OR healthcare OR "public health")
AND
(multidisciplinar* OR interdisciplinar* OR "interdisciplinary collaboration" OR "cross-disciplinary")
AND
(innovation OR "healthcare innovation" OR "evidence-based practice*" OR "evidence-based decision-making")
AND
(governance OR "health governance" OR management OR leadership OR coordination)

The Web of Science database was used due to its wide disciplinary coverage and international recognition. Based on these criteria, a corpus of 1,000 articles was selected for thematic relevance, scientific quality, and alignment with the congress objectives.

The bibliometric analysis was conducted using Biblioshiny, the web interface of the Bibliometrix R package, allowing reproducible exploration, advanced visualization, and mapping of bibliographic data. This facilitated the analysis of publication trends, identification of key authors and journals, and the mapping of keyword co-occurrences and collaboration networks.

III. Results

This section presents the main bibliometric results derived from the analysis of the selected scientific corpus. The study is based on data retrieved from the Web of Science database, chosen for its extensive disciplinary coverage, rigorous indexing standards, and international academic recognition. Following predefined inclusion criteria related to thematic relevance, scientific quality, and consistency with the objectives of the congress, a total corpus of 1,000 peer-reviewed articles published between 1995 and 2026 was constituted.

The bibliometric analysis was conducted using Biblioshiny, the web-based interface of the Bibliometrix R package, which enables comprehensive performance analysis and science mapping. The resulting dataset reflects a mature and diversified body of literature, involving 6,731 authors across 641 scientific sources, and characterized by a high level of collaborative research activity. Single-authored publications remain marginal (n = 65), confirming the predominance of multi-authored contributions, with an average of 7.13 co-authors per document.

The corpus demonstrates a sustained dynamic of scientific growth, with an annual growth rate of 9.13% and a relatively recent average document age of 4.86 years, indicating ongoing research interest and topical relevance. International scientific collaboration is also well represented, with 29.8% of publications involving international co-authorship. In terms of scientific impact, the analyzed documents exhibit an average of 19.19 citations per article, highlighting the visibility and influence of the research field.

The following subsections detail the temporal evolution of scientific production, authorship patterns, source distribution, thematic structures, and collaboration networks, providing a comprehensive overview of the knowledge landscape and its development over time.

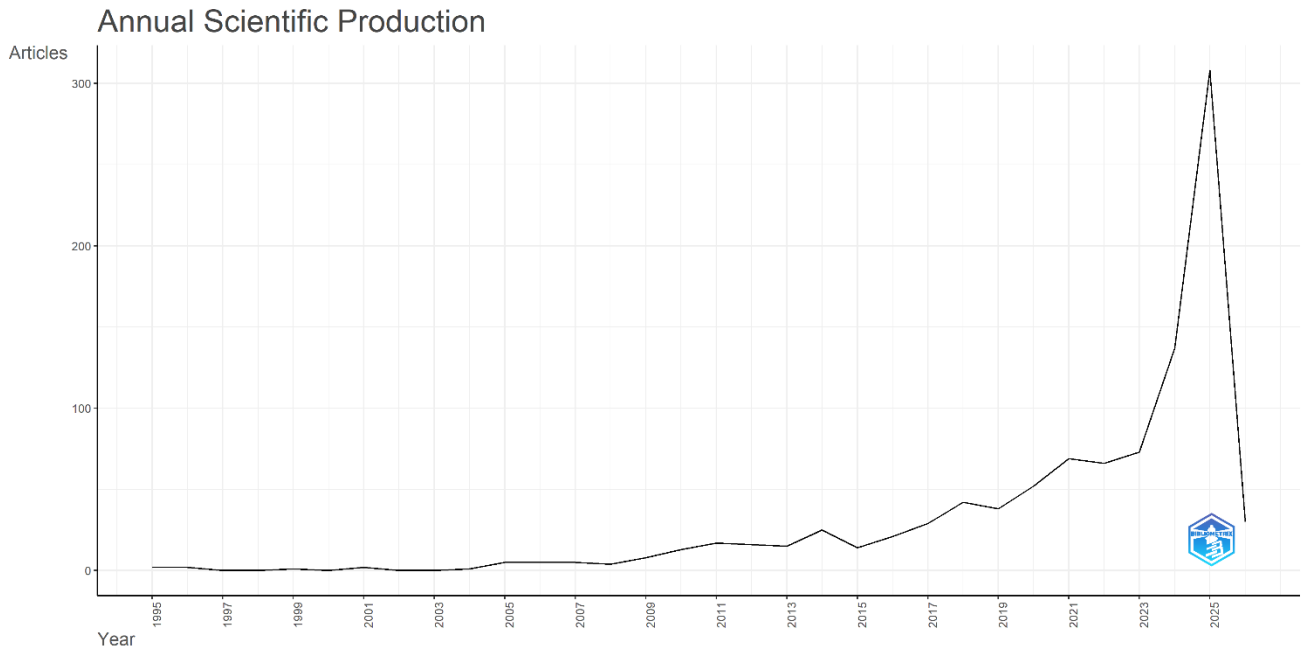

Figure 1: Long-Term Growth and Recent Acceleration in Scientific Production

The figure illustrates the evolution of annual scientific production over the studied period. During the initial years, scientific output remained relatively low and stable, reflecting a limited volume of publications. From the mid-2000s onward, a gradual upward trend can be observed, suggesting a progressive strengthening of research activity.

A marked acceleration in publication output is evident from approximately 2015, indicating increased research capacity, visibility, and engagement within the scientific community. This growth culminates in a pronounced peak in 2024, representing the highest level of annual production recorded during the period under review.

The apparent decline observed in 2025 should be interpreted with caution, as it is likely attributable to incomplete data collection or delays in indexing rather than a genuine decrease in scientific productivity.

Overall, the trend demonstrates a sustained and accelerating expansion of scientific output, particularly over the last decade, highlighting a phase of consolidation and intensification of research activities.

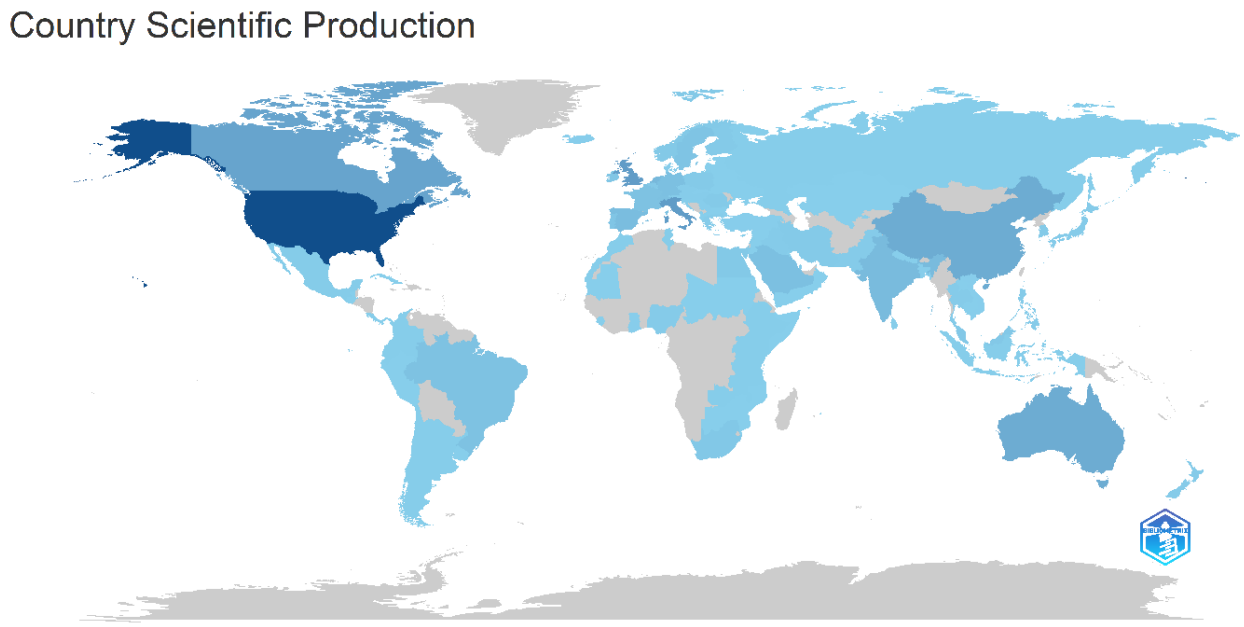

Figure 2: Geographical Distribution of Scientific Production by Country

The map shows a clear concentration of scientific production in North America and Europe, with the United States as the leading contributor. Significant research output is also observed in parts of Asia, reflecting the region's growing role in global science. Other regions, including Latin America, Africa, and the Middle East, display moderate but increasing levels of scientific activity. Overall, the distribution highlights persistent global disparities alongside a gradual diversification of scientific production worldwide.

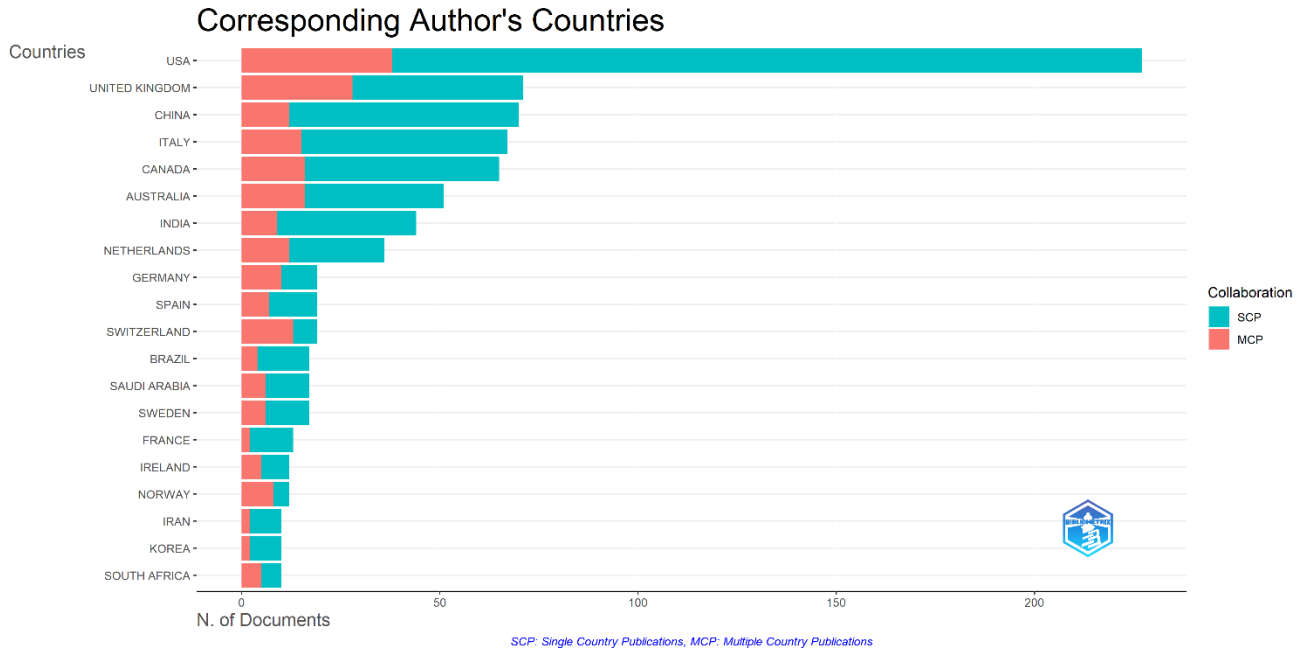

Figure 3: Corresponding Author's Countries and Collaboration Patterns

The figure highlights the distribution of corresponding authors by country and distinguishes between single-country publications (SCP) and multiple-country publications (MCP). The United States clearly dominates in terms of corresponding authorship, with a strong prevalence of international collaborations. The United Kingdom, China, Italy, and Canada also show substantial contributions, reflecting both national research capacity and active engagement in cross-border collaboration. Overall, the results indicate that leading research-producing countries combine high publication output with significant international co-authorship, underscoring the globalized nature of scientific research.

Figure 4: Mapping Key Themes in Healthcare Management and Innovation

This thematic visualization highlights the growing importance of healthcare management, innovation, and artificial intelligence as key drivers in the transformation of modern health systems. It reflects the interdisciplinary spirit of the congress *"Health and the Future: A Crossroads of Expertise and Innovation"*.

The prominence of e-health, telemedicine, and AI aligns with advances in clinical innovation, decision support, and digital transformation of care. Concepts such as quality, patient safety, performance, and leadership emphasize the role of effective governance, risk management, and value-based healthcare.

Moreover, the focus on data, innovation, education, and public health underlines the need for skilled professionals, evidence-based practice, and ethical integration of emerging technologies. Overall, this representation illustrates a holistic, patient-centered, and technology-driven vision of future healthcare, where management and innovation work together to improve outcomes, equity, and system resilience.

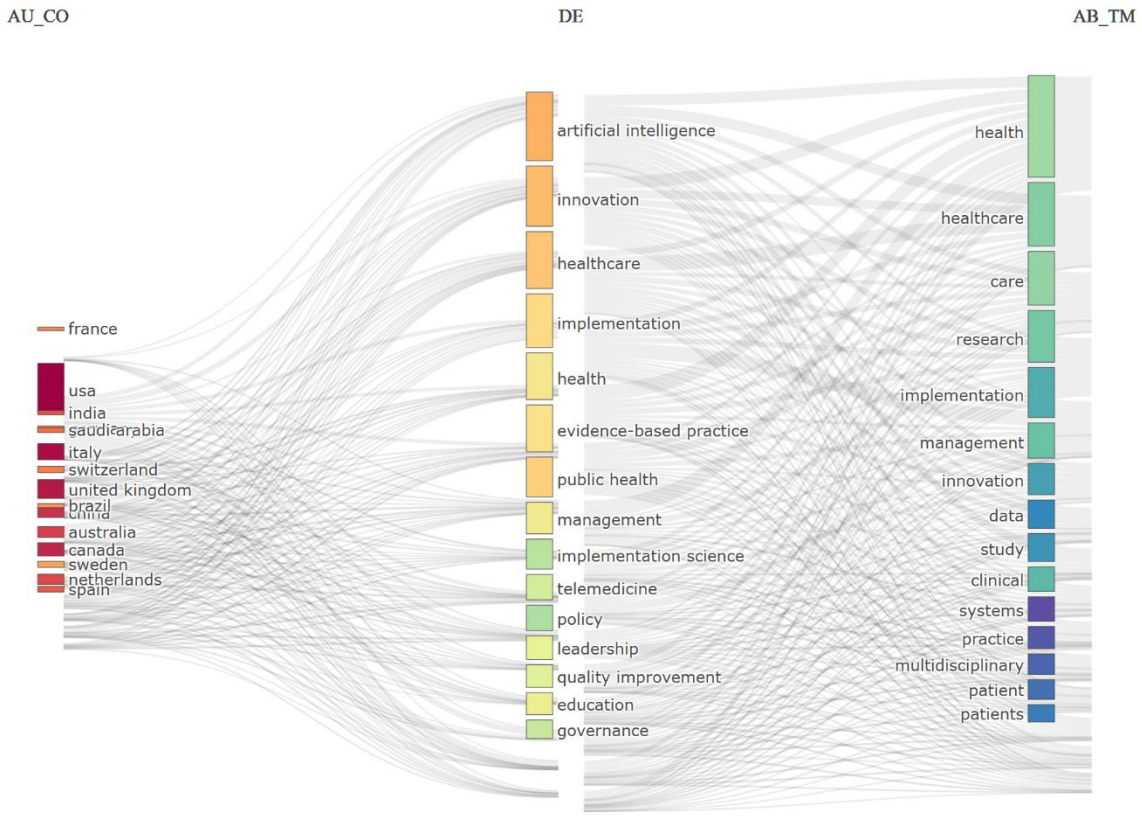

Figure 5: Global Research Landscape Linking Countries, Innovation Domains, and Health-Related Themes

This Sankey diagram illustrates the relationships between countries (AU_CO), innovation and implementation domains (IDE), and abstract thematic terms (AB_TM) within the field of health and healthcare research.

On the left, countries such as the USA, UK, Italy, Canada, and Australia appear as major contributors, indicating strong international involvement. The central column highlights dominant research domains, notably artificial intelligence, innovation, healthcare, implementation, and public health, suggesting a strong focus on translating innovation into practice.

On the right, abstract terms like health, healthcare, care, research, implementation, and management dominate, reflecting a clear emphasis on applied, patient-oriented, and system-level outcomes. Overall, the figure reveals a globally connected research ecosystem, where technological innovation—particularly AI—is increasingly integrated into healthcare implementation, management, and patient care.

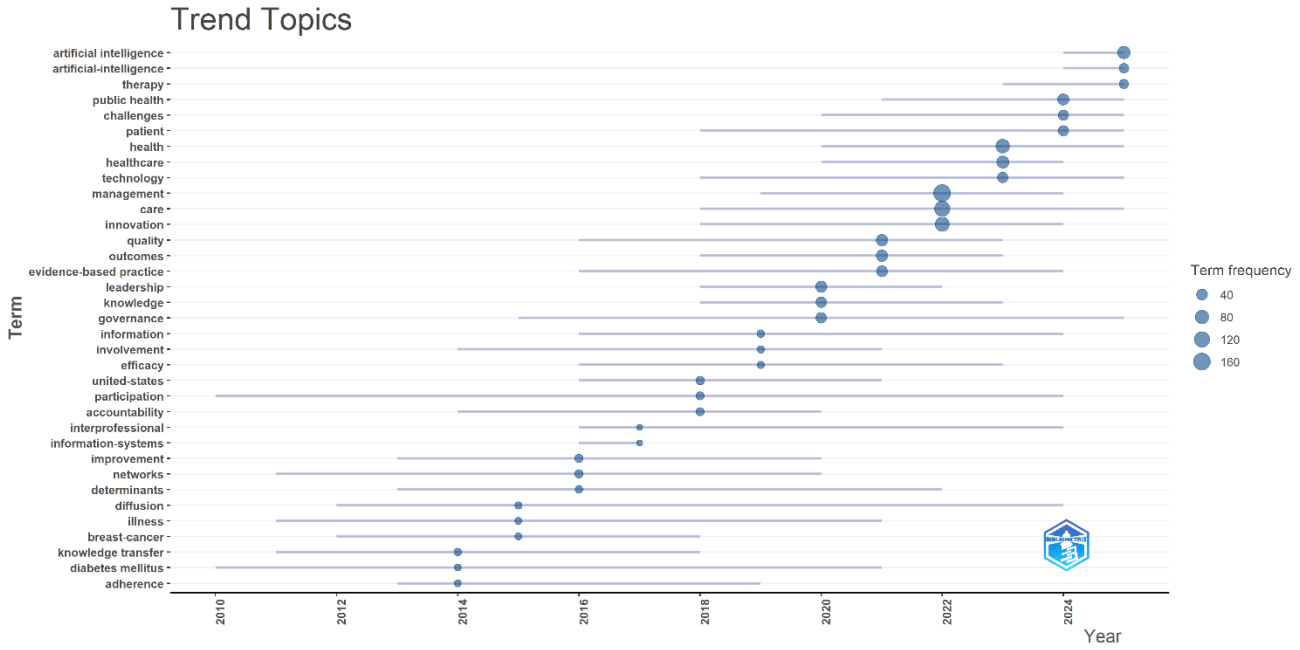

Figure 6: Evolution of Research Trends in Healthcare and Innovation (2010–2024)

This figure presents the temporal evolution of major research topics in the field of healthcare and innovation between 2010 and 2024. Early research trends are characterized by themes such as knowledge transfer, adherence, chronic diseases (e.g., diabetes and breast cancer), and diffusion of innovations, reflecting an initial focus on clinical outcomes and knowledge dissemination.

From the mid-2010s onward, topics related to information systems, networks, governance, and leadership gain prominence, indicating a growing interest in organizational and systemic dimensions of healthcare.

More recently, from around 2019–2020, there is a marked rise in themes such as artificial intelligence, technology, innovation, management, care, and public health. The increasing size of the bubbles in the most recent years highlights the expanding importance of these topics, particularly the integration of digital technologies and AI into healthcare systems. Overall, the figure illustrates a clear shift from clinically oriented research toward technology-driven, system-level, and innovation-focused approaches in healthcare research.

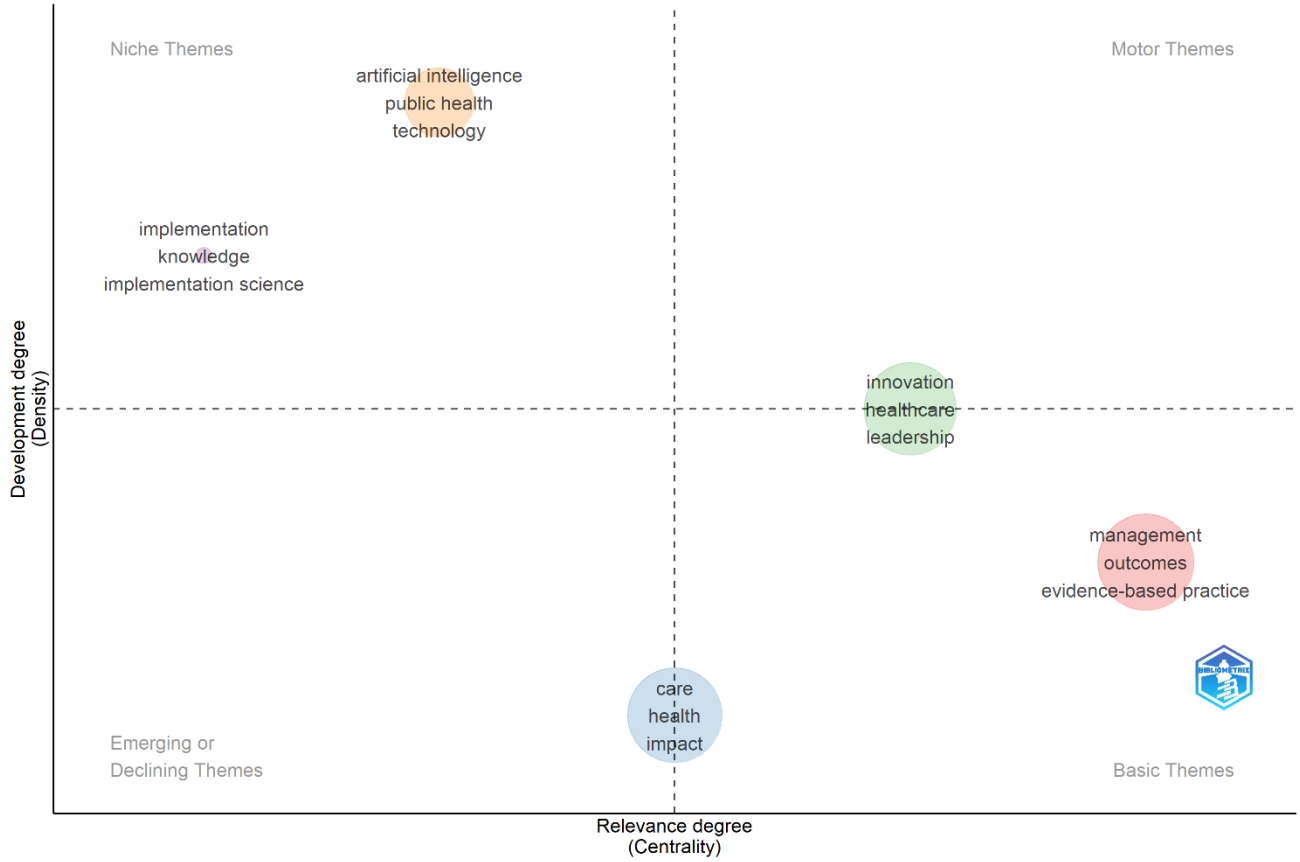

Figure 7: Thematic Map of Healthcare Innovation Research

This thematic map illustrates the structural organization of research themes in the field of healthcare innovation based on their relevance (centrality) and degree of development (density)**.** The map is divided into four quadrants representing motor themes, basic themes, niche themes, and emerging or declining themes.

The motor themes quadrant highlights innovation, healthcare, and leadership, indicating that these topics are both well-developed and highly central to the research field. In contrast, management, outcomes, and evidence-based practice appear as basic themes, suggesting that they are fundamental and widely connected but still less internally developed.

Themes such as artificial intelligence, public health, and technology are positioned within the niche themes quadrant, reflecting their high level of development but more specialized or peripheral role within the broader research landscape. Meanwhile, care**,** health**,** and impact are located in the emerging or declining themes quadrant, pointing to areas that are either gaining momentum or losing prominence and thus warrant further investigation.

Overall, the figure reveals a research field structured around core leadership and innovation topics, while simultaneously integrating specialized technological themes and evolving care-related concepts.

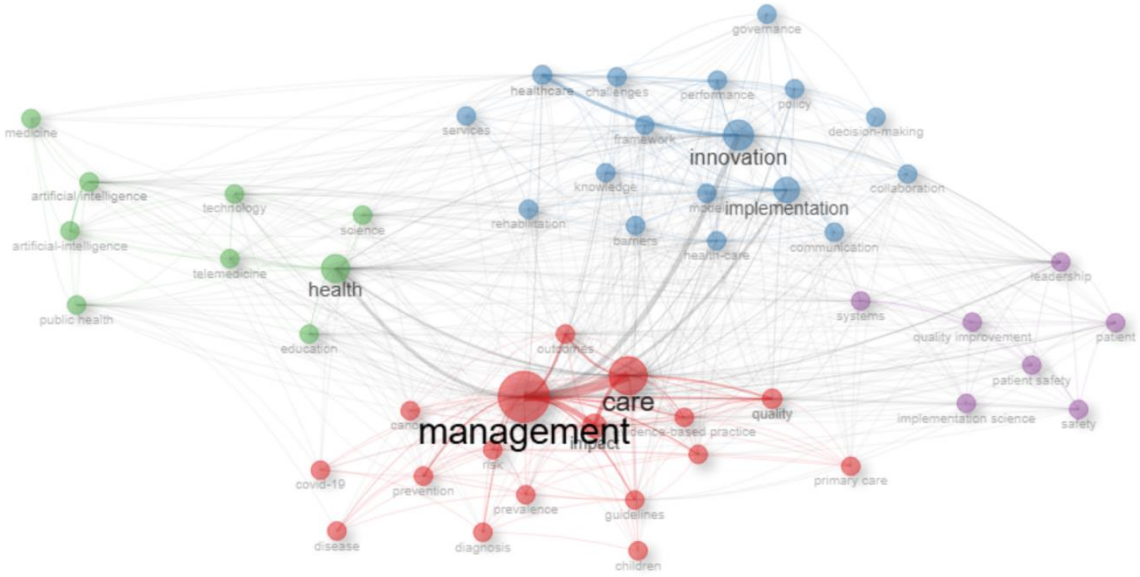

Figure 8: Conceptual Network of Healthcare Innovation and Management Research

This network visualization depicts the conceptual structure of research in the field of healthcare innovation, highlighting the relationships and clustering of key themes. Node size reflects the relative importance of concepts, while colors indicate thematic communities within the research landscape.

At the center of the network, management and care emerge as the most influential and highly connected concepts, underscoring their pivotal role in structuring healthcare research. Closely linked to these central nodes are themes related to outcomes, quality, evidence-based practice, and primary care, emphasizing a strong focus on performance and effectiveness of healthcare delivery.

A distinct cluster around innovation and implementation connects governance, policy, decision-making, and collaboration, reflecting the growing emphasis on translating innovative solutions into healthcare practice. Another cluster centered on health integrates artificial intelligence, telemedicine, public health, and technology, illustrating the increasing role of digital and technological approaches in health systems.

Finally, a patient-oriented cluster includes patient safety, quality improvement, implementation science, and leadership, highlighting concerns related to system safety, organizational improvement, and patient-centered care. Overall, the figure reveals a highly interconnected research field, where management and care act as central bridges between innovation, technology, and patient-focused outcomes.

IV. Discussion

4.1. Consolidation and Acceleration of Multidisciplinary Health Research

The bibliometric findings demonstrate a sustained and accelerating growth in scientific production related to multidisciplinary and interdisciplinary approaches in health sciences, particularly over the last decade. The marked increase in publications after 2015 and the peak observed in 2024 reflect a consolidation phase in which integrated health research has moved from a conceptual aspiration to an operational research paradigm. This trend is consistent with prior bibliometric studies highlighting the growing recognition that complex health challenges such as system resilience, digital transformation, and population health cannot be effectively addressed within single disciplinary boundaries (Choi & Pak, 2006; Frenk et al., 2010).

The relatively low average age of documents (4.86 years) further indicates that this field remains dynamic and responsive to emerging societal, technological, and organizational challenges. The observed annual growth rate (9.13%) exceeds that reported in several adjacent domains of health systems research, suggesting a particularly strong momentum for multidisciplinary and innovation-driven approaches (Bornmann & Leydesdorff, 2014). This temporal evolution empirically supports the strategic orientation adopted by CIMSS 2025, which emphasizes future-oriented, cross-sectoral expertise.

4.2. Collaboration Patterns and the Globalization of Health Knowledge

The predominance of multi-authored publications and the high average number of co-authors per article reflect the collaborative nature of contemporary health research. Nearly one-third of the analyzed publications involved international co-authorship, underscoring the globalization of scientific knowledge production. Countries such as the United States, the United Kingdom, China, Italy, and Canada not only dominate in output but also demonstrate strong engagement in cross-border collaboration.

These findings align with the literature showing that international collaboration is positively associated with scientific impact, citation rates, and methodological sophistication in health research (Wagner et al., 2015). However, the geographical distribution also reveals persistent asymmetries, with lower representation from Africa, parts of Latin America, and the Middle East. While this may partly reflect database coverage biases, it also points to structural inequalities in research capacity, funding, and visibility (Van Raan, 2014). In this context, international multidisciplinary congresses such as CIMSS play a critical role in fostering inclusivity, networking, and capacity building across regions.

4.3. Thematic Centrality of Management, Governance, and Innovation

The thematic maps and conceptual networks consistently identify management, leadership, and innovation as central organizing concepts within the research field. These themes function as structural bridges connecting clinical care, public health, policy, and technological development. Their position as motor and basic themes indicates both high relevance and strong connectivity, confirming that effective governance and leadership are indispensable for translating innovation into measurable health outcomes.

This finding echoes existing frameworks that conceptualize health systems as complex adaptive systems, where organizational capacity, governance mechanisms, and leadership competencies are critical determinants of performance and sustainability (World Health Organization, 2018; Denis et al., 2012). The strong linkage

between management, outcomes, and evidence-based practice further underscores the growing demand for decision-making models grounded in empirical evidence and continuous performance evaluation.

4.4. Digital Transformation and the Rise of Artificial Intelligence in Healthcare

One of the most salient findings of the bibliometric analysis is the rapid emergence of artificial intelligence, e-health, telemedicine, and data-driven approaches as prominent research themes, particularly since 2019. Although positioned as niche themes in the thematic map, their high density indicates advanced conceptual development and methodological sophistication.

The integration of AI into healthcare research reflects broader systemic transformations driven by digitalization, big data availability, and advances in computational methods. Numerous studies have highlighted the potential of AI to improve diagnostic accuracy, optimize resource allocation, and support clinical decision-making, while also raising ethical, legal, and governance challenges (Topol, 2019; Rajkomar et al., 2018). The alignment between these findings and the thematic axes of CIMSS 2025 reinforces the relevance of addressing AI not only as a technological innovation but as a multidisciplinary issue involving law, ethics, management, and professional training.

4.5. Implications for Interdisciplinary Congress Design and Health System Development

Taken together, the results provide empirical validation for the multidisciplinary architecture of CIMSS 2025. The convergence of themes related to care, management, innovation, public health, and technology illustrates the necessity of integrative scientific platforms capable of bridging disciplinary silos. The bibliometric evidence supports the notion that future health systems development depends on coordinated action across medical, legal, managerial, psychosocial, and technological domains.

Moreover, the identification of emerging and evolving themes suggests that congresses should not only reflect current research priorities but also anticipate future knowledge needs. By grounding its thematic choices in bibliometric analysis, CIMSS 2025 exemplifies a data-driven approach to scientific agenda setting, enhancing both its academic relevance and its strategic impact on health policy and practice.

Conclusion

This bibliometric analysis provides a systematic overview of the scientific landscape related to the overarching theme of the First International Multidisciplinary Congress in Health Sciences, “Health and the Future: A Crossroad of Expertise and Innovation.” The findings highlight key research trends, emerging topics, and interdisciplinary linkages, offering empirical evidence for the relevance and timeliness of the congress’s chosen disciplines, themes, and sub-themes. By grounding the congress structure in objective bibliometric data, this study not only validates the thematic priorities but also underscores the importance of multidisciplinary collaboration, innovation, and evidence-based approaches in addressing contemporary and future health challenges. These insights can guide researchers, practitioners, and policymakers in aligning scientific efforts with evolving health needs and in fostering integrated, innovative, and resilient health systems.

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Conflicts of Interest: The authors declare that there are no conflicts of interest.

Compliance with Ethical Standards: This article does not contain any studies involving human or animal subjects.

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