International Journal of Information Science and Management
Vol. 23, No. 3, 2025, 77-90
DOI: https://doi.org/10.22034/ijism.2025.2027238.1460 / DOR: https://dor.isc.ac/dor/20.1001.1.20088302.2025.23.3.5.3

Original Research

The Co-authorship Network and Citation Analysis of Health Knowledge Management Researchers

Sirous Panahi
Associate Prof., Department of Medical Library & Information Science, School of Health Management and Information Sciences, Iran University of Medical Sciences, Tehran, Iran.
panahi.s@iums.ac.ir
ORCID iD: https://orcid.org/0000-0001-7610-906X

Shabnam Danaei Mehrabad
Ph.D. in Medical Library & Information Science, Department of Medical Library & Information Science, School of Health Management & Information Sciences, Iran University of Medical Sciences, Tehran, Iran.
danaei.s@iums.ac.ir
ORCID iD: https://orcid.org/0000-0001-7501-8721

Ali Ouchi
Ph.D. Student. Department of Medical Library and Information Science, School of Management and Medical Informatics, Tabriz University of Medical Sciences, Tabriz, Iran.
Ouchi.a@iums.ac.ir
ORCID iD: https://orcid.org/0000-0003-3861-3761

Mina Mahami-Oskouei
Assistant Prof, Department of Medical Library and Information Science, School of Management and Medical Informatics,Tabriz University of Medical Sciences, Tabriz, Iran.
Corresponding Author: mahami.m@tbzmed.ac.ir
ORCID iD: https://orcid.org/0000-0001-8561-8042

Received: 24 April 2024
Reviewed: 20 May 2024
Accepted: 08 December 2024

Abstract

The critical role of knowledge management in healthcare is underscored by the adverse effects that can result from the gap between knowledge production and its practical application, particularly for patients. This study aims to evaluate the current state of healthcare knowledge management by conducting a citation and co-authorship analysis of research articles in this domain. Scientific publications indexed in the Scopus database from 2013 to 2023 were examined. VOSviewer software was employed for co-citation, co-authorship, and keyword co-occurrence analyses. In contrast, Excel software evaluated publication output, citation counts, and average citations per article. The findings reveal that 2018–2019 marked the peak period for scientific output in this field. Graham I.D. emerged as the most experienced and productive author. Regarding international collaboration, the United States and Canada demonstrated the highest cooperation and citations among the countries analyzed. These insights offer valuable guidance for policymakers, planners, and researchers in shaping scientific and educational strategies for healthcare knowledge management.

Keywords: Knowledge Management, Co-authorship Network, Citation Analysis, Authorship, Collaboration, Health Care Sector.

Introduction

Knowledge management has become a cornerstone of the healthcare sector, addressing the critical need to bridge the gap between knowledge generation and its application to enhance

health outcomes. In an ever-evolving healthcare landscape, effectively preserving, sharing, and implementing research findings is essential for improving patient care, guiding policy decisions, and fostering innovation (El Morr & Subercaze, 2010; Metaxiotis, 2011). Efficient knowledge management ensures that healthcare professionals and policymakers have timely access to the latest evidence, enabling informed decision-making that saves lives and optimizes healthcare systems. This highlights the importance of enhancing knowledge dissemination and utilization mechanisms within healthcare (Shahmoradi, Safadari & Jimma, 2017).

Despite its importance, healthcare knowledge management faces persistent challenges, such as fragmented research efforts, barriers to knowledge transfer, and insufficient collaboration among researchers and institutions. These obstacles hinder the full potential of healthcare research, creating an urgent need for systematic approaches to improving knowledge dissemination (El Morr & Subercaze, 2010; Metaxiotis, 2011). Addressing these challenges requires a deeper examination of how knowledge is produced, shared, and utilized within healthcare networks, particularly on factors that enhance or hinder collaboration (Maramba, Coleman & Ntawanga, 2020).

A promising approach to studying these dynamics is through scientometric and bibliometric analyses, allowing researchers to map a field's intellectual structure and explore collaboration patterns. By analyzing co-authorship networks, researchers can reveal key relationships among authors, institutions, and disciplines, offering valuable insights into the collaborative landscape of healthcare knowledge management. While such analyses are widely applied in other fields, their use in healthcare knowledge management remains limited. Existing studies often focus on general scientometric indicators without addressing the unique challenges of healthcare, where inefficient knowledge transfer can have profound consequences (Ovalle-Perandones, Perianes-Rodriguez & Olmeda-Gomez, 2009; Baji & Osareh, 2015).

This study aims to address these gaps by conducting a bibliometric analysis of knowledge management in healthcare, with a particular emphasis on co-authorship networks. While previous research has examined scientometric trends broadly (Serenko, 2021), this study focuses on the healthcare domain, providing a distinctive contribution by integrating scientometric tools with practical healthcare objectives. Through the analysis of co-authorship networks, the study seeks to identify influential contributors, highlight interdisciplinary collaborations, and uncover patterns that can inform strategic research planning.

The significance of this work extends beyond academic contributions to practical implications. Improved understanding of co-authorship and collaboration can guide policymakers, administrators, and researchers in designing strategies to enhance knowledge dissemination and encourage broader participation in research. This, in turn, can strengthen the integration of evidence-based practices into healthcare systems, ultimately benefiting society by improving health outcomes and reducing inefficiencies (Wilanda, Pahrijal & Bunyamin, 2024)

Building on these considerations, the primary goal of this study is to evaluate the current state of healthcare knowledge management through a comprehensive bibliometric analysis. Specifically, it aims to examine co-authorship networks within the literature to uncover collaboration patterns, identify influential contributors, and map key research areas. By providing a detailed understanding of these dynamics, this research seeks to guide future research planning, foster greater scientific collaboration, and inform the strategic allocation of resources. Ultimately, the findings are intended to support the development of more effective

and integrated knowledge management strategies in healthcare, enhancing their impact on both policy and practice.

Materials and Methods

This study aims to map the scientific landscape of knowledge management (KM) in healthcare using a scientometric approach. It includes all scientific publications indexed in the Scopus database over the past decade. Scopus, recognized as one of the largest and most comprehensive scientific databases, encompasses articles from various fields, including healthcare and KM. Its broad scope and interdisciplinary content make it an ideal resource for this research. The selected timeframe, 2013 to 2023, captures significant trends and developments in healthcare KM. This period is notable for the growing recognition of KM's pivotal role in healthcare, particularly in addressing challenges like the COVID-19 pandemic, which demanded rapid adaptation in organizational processes and strategies (Sousa, Dal Mas & Da Costa, 2021).

The search syntax in the Scopus database

TITLE-ABS-KEY((“knowledge management” OR “knowledge sharing” OR “knowledge transfer” OR “knowledge using” OR “knowledge generation” OR “knowledge creation” OR “knowledge distribution” OR “knowledge storing“ OR “knowledge applying” OR “knowledge application” OR “knowledge use” OR “knowledge acquiring” OR “knowledge acquisition” OR “knowledge identifying” OR “knowledge identification” OR “knowledge capturing” OR “knowledge process” OR “knowledge processing” OR “knowledge translation” OR “knowledge exchange” OR “knowledge representation” OR “knowledge organization” OR “knowledge production” OR “knowledge discovery” OR “knowledge development” OR “knowledge detection” OR “knowledge codification” OR “knowledge networks” OR “knowledge systems” OR “knowledge map”)AND TITLE-ABS-KEY (health OR hospital OR clinical OR healthcare OR “health care” OR medical))

Data were extracted, analyzed using VOSviewer, and interpreted in the next phase. The search yielded bibliographic information for 19,578 documents. Finally, key metrics such as research productivity, citation counts, and average citations were analyzed and summarized using Excel software.

Mapping a field or subject requires conducting multiple analyses and visually representing the scientific data. In this study, VOSviewer was employed to visualize the scientific landscape and analyze co-authorship, co-citation, and keyword co-occurrence. Co-authorship networks, in particular, are considered more effective for examining author collaborations than co-citation or co-occurrence, as co-authorship indicates stronger social connections and is typically more stable. The VOSviewer software is ideal for this study due to its unique capabilities in analyzing and visualizing scientific data. This software enables the creation of clear visualizations of complex networks, such as co-authorship, co-occurrence, and co-citation, facilitating the identification of patterns, collaborations, and research trends. Its ability to process large datasets, such as the 19,578 documents analyzed in this research, makes it particularly suitable for large-scale analyses.

Results

Distribution of documents and citations in health knowledge management publications by year

Figure 1 displays the yearly distribution of document frequency and citations in health knowledge management, based on data from 19,578 documents published between 2013 and 2023 on the Scopus platform. The findings reveal a steady upward trend in publications, from 1,518 in 2013 to 2,704 in 2021. The growth trend equation for the number of documents over this period has a slope of 0.9, indicating a significant increase in publication activity.

These publications have garnered 204,256 citations, translating to an average of 6.2 citations per year and 43.1 citations per document. However, the trend in citations shows a decline. Citations dropped from 26,266 in 2013 to 2,594 in 2022. The citation growth equation, with a coefficient of -0.7829 ($R^2 = 0$), illustrates the magnitude of this decrease. Additionally, the H-Index for this body of scientific literature is 136, reflecting the high impact of key contributions in this field. Figure 1 offers a comprehensive visual representation of the annual distribution of these 19,578 publications and their citation trends in health knowledge management from 2013 to 2023.

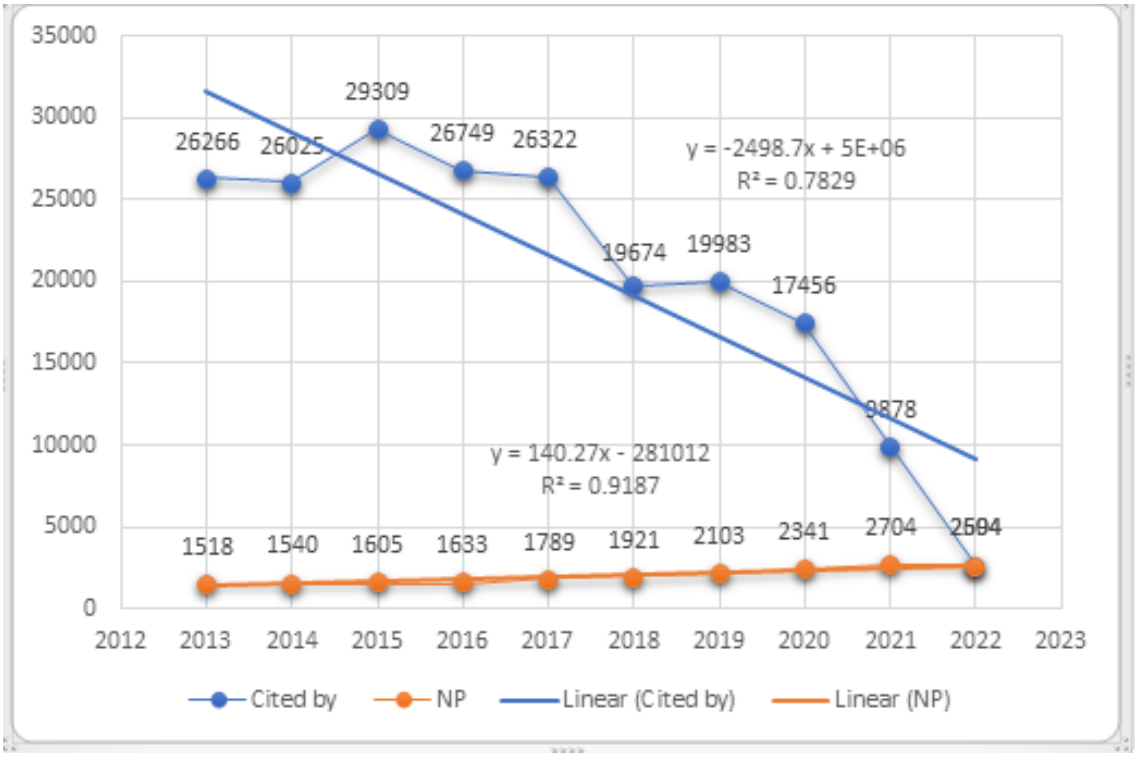

Figure 1: Annual distribution of 19578 health knowledge management publications during 2013-2023

Co-authorship map of authors, organizations, and countries in health knowledge management publications

Figure 2 shows the collaboration network of 17 authors who have published at least 40 documents on knowledge management in health from 2013 to 2023 on Scopus. We chose a threshold 40 to include only the most prolific authors on the network. In the cluster introduction, the numbers inside parentheses indicate the Total Link Strength, which reflects the significance

of authors in the scientific collaboration network. A higher number indicates more collaboration with other authors. The size of the nodes or font represents the frequency of documents published by each author. The thickness of the lines connecting two authors reflects the strength of collaboration, with shorter distances indicating more cooperation.

According to Figure 2, the individuals with the highest Total Link Strength in the formation of the scientific collaboration network in the field of knowledge management in health on the Scopus platform are Zhang Y from cluster three (35), Wang Y from cluster three (34), Liu H from cluster one (23), Liu Y from cluster one (22), and Li J from cluster one (21). These individuals are deemed the most important in this network.

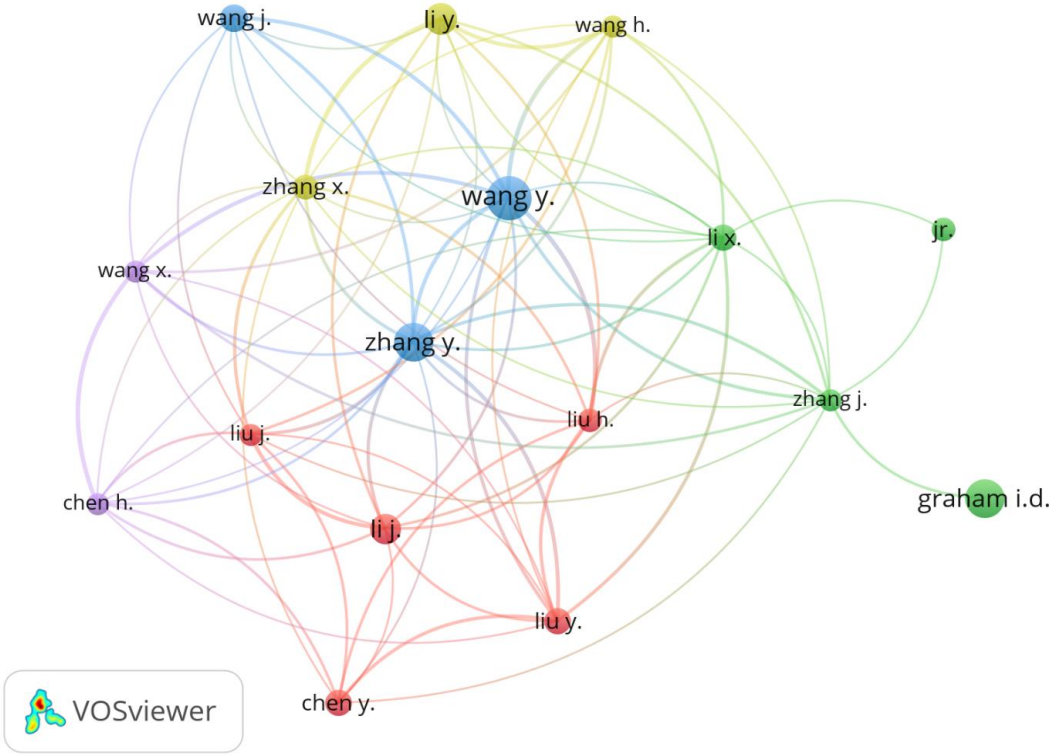

Figure 2: Co-authors map in health knowledge management publishing

Figure 3 provides additional information. Graham I.D. from cluster two has 73 documents with an average of 27.57 citations per document. Chen H from Cluster Five has 43 documents with 46.25 citations per document, and Li Y from Cluster Four has 59 documents with 47.17. These authors are the most cited in this field. Figure 3 displays the collaboration network of authors based on the publication period. Notably, Zhang Y, Yang Y, and Wang J from cluster three, Li X and Zhang J from cluster two, Liu Y from cluster one, and Wang X from cluster five are the newest influential authors in the network of impactful authors in the field of knowledge management in health on the Scopus platform. Furthermore, Figure 3 reveals that Graham I.D., the most cited author in this field, is one of the oldest authors in this domain. Figure 2 depicts the collaborative map of authors in publications on knowledge management in health.

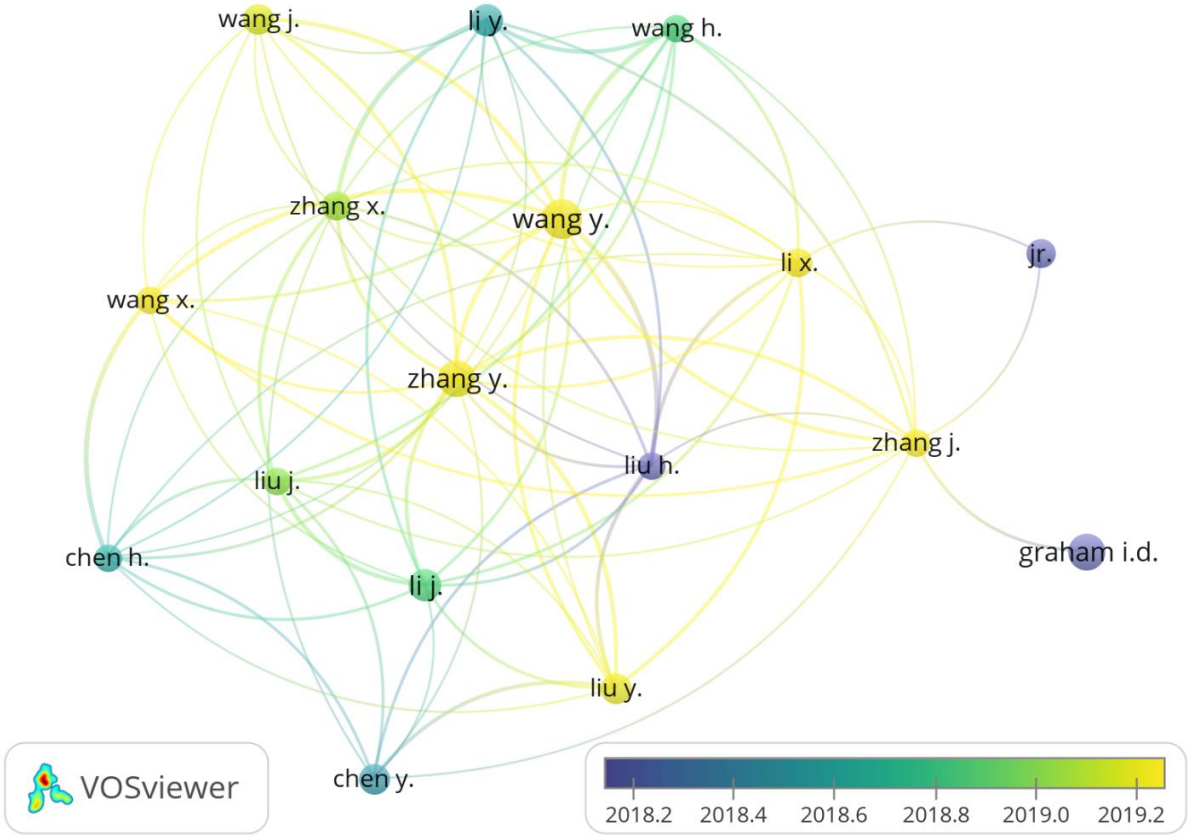

Figure 3: Co-authorship map of authors based on period

Figure 4 showcases the collaboration network of 30 organizations with at least 15 documents in the publications of knowledge management in health on Scopus from 2013 to 2023. It is important to note that two organizations were excluded from the map as they did not collaborate with other organizations. The numbers inside parentheses in the cluster introduction indicate the Total Link Strength, reflecting the importance of organizations in their collaboration. A higher number signifies more collaboration with other organizations.

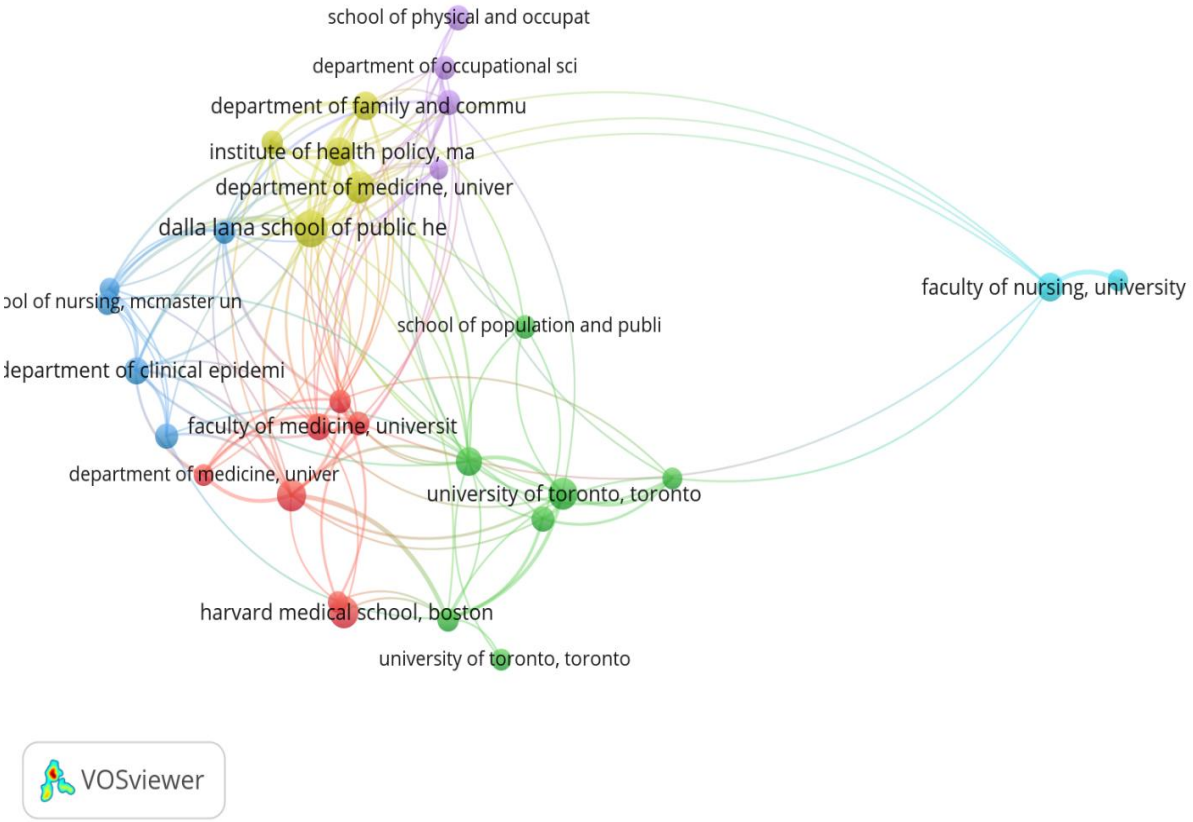

Figure 4: Co-authorship map of the top organization

The first cluster (red) is comprised of seven organizations that focus on scientific collaboration in public health. The main organizations in this cluster are the Dalla Lana School of Public Health (40), the Institute of Health Policy, Management and Evaluation (31), and the Ottawa Hospital Research Institute (30). Six of the organizations are from Canada, and one is from the United States.

The second cluster (green) consists of seven Canadian organizations, including McMaster University, the University of Toronto, the University of Ottawa, the University of British Columbia, Dalhousie University, the School of Population and Public Health, and the University of Toronto. This cluster mainly involves academic collaborations.

The third cluster (blue) involves scientific collaboration among five Canadian faculties at McMaster University. These faculties include the Department of Clinical Epidemiology and Biostatistics, the School of Rehabilitation Science, the Department of Pediatrics, the Department of Medicine, and the School of Nursing. This cluster focuses on collaborations between departments and faculties within McMaster University.

The fourth cluster (yellow) comprises collaborations among five Canadian faculties, primarily from the University of Toronto. The faculties involved in this cluster are the Dalla Lana School of Public Health, Institute of Health Policy, Management and Evaluation, Department of Family and Community Medicine, Department of Psychiatry, and Department of Medicine at the University of Ottawa. This cluster primarily focuses on collaborations between different groups and faculties within the University of Toronto.

The fifth cluster (purple) involves collaborations among four Canadian organizations, including the Department of Physical Therapy at the University of Toronto, the Department of

Physical Therapy at the University of British Columbia, the Department of Occupational Science and Occupational Therapy at the University of Toronto, and the School of Physical and Occupational Therapy at McGill University.

The sixth cluster consists of collaborations between two educational groups, the Faculty of Nursing and the Department of Pediatrics, both associated with the University of Alberta in Canada. Historically, the oldest contributors to scientific productions in the field of knowledge management in health are the Department of Clinical Epidemiology and Biostatistics at the University of Toronto, Harvard Medical, the University of British Columbia, and the Department of Medicine at the University of Ottawa. On the other hand, the newest contributors are the Faculty of Nursing at the University of Alberta, the School of Epidemiology and Public Health at the University of Ottawa, the Dalla Lana School of Public Health at the University of Toronto, and the Department of Physical Therapy at the University of Toronto.

Figure 5 depicts the collaboration network of 81 countries with a minimum of 20 documents in knowledge management in health from 2013 to 2023, as recorded on Scopus. In the cluster introduction, the numbers enclosed in parentheses denote the Total Link Strength, which reflects the significance of countries in their international collaborations. A higher number indicates greater collaboration with other countries. The largest cluster, represented by the color red, comprises authors from 28 countries, including Germany (1244), Italy (1081), the Netherlands (1153), Sweden (726), Portugal (476), and others. The second cluster, depicted in green, involves authors from 25 countries, such as the United States (3280), Australia (409), China (763), India (557), Iran (187), and others. Figure 5 reveals that within this cluster, the United States has the highest level of collaboration and citations among the 81 countries under scrutiny. The third cluster, shown in blue, consists of 18 countries, including the United Kingdom (2865), Canada (2325), France (1006), South Africa (569), and others. The fourth cluster, represented by the color yellow, includes nine countries, such as Spain (930), Brazil (564), Mexico (210), and others. Lastly, the fifth cluster, illustrated in purple, solely features New Zealand (261). This map provides an overview of the collaboration patterns among prominent organizations and countries in the realm of knowledge management in health.

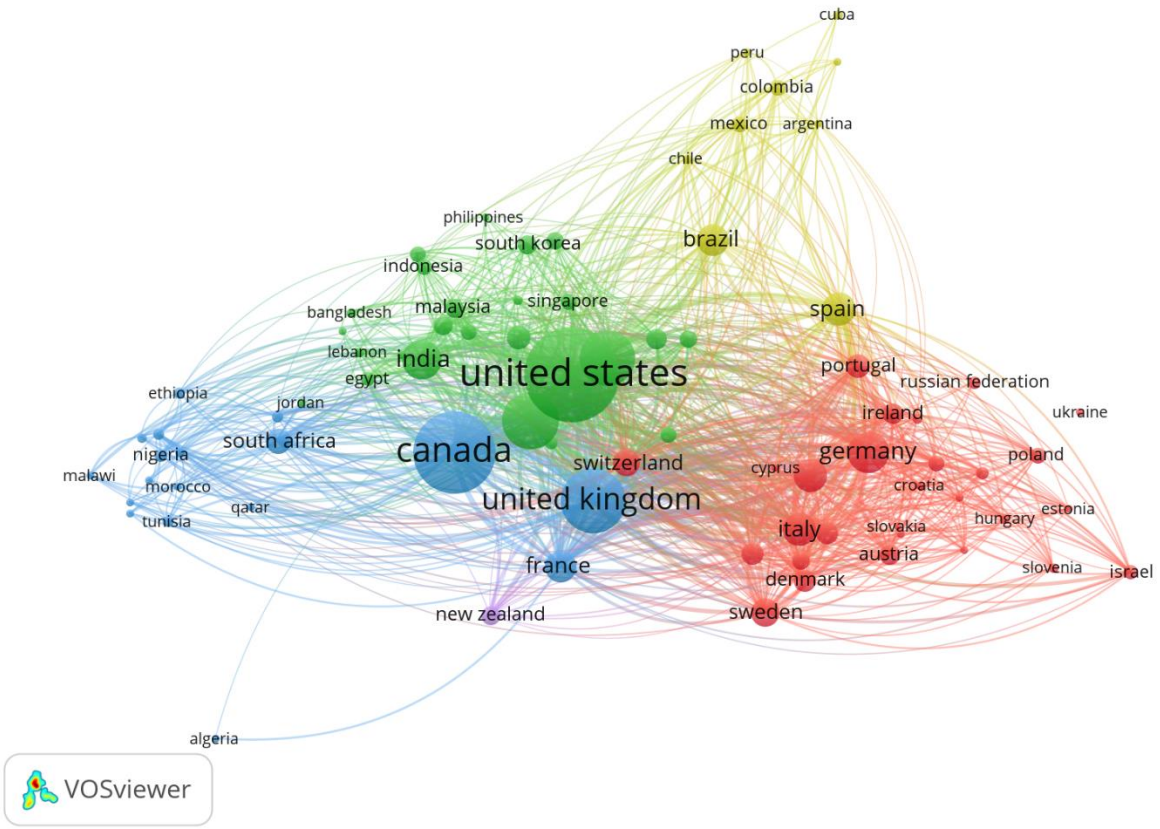

Figure 5: Co-authorship map of the top countries

The most influential journals

Figure 6 presents a co-citation analysis using the "co-citation by cited sources" technique to explore the importance of various journals in health knowledge management. This analysis included journals with at least 500 citations in the map. A total of 73 sources are categorized into five clusters. The results show that influential journals in this field include Implementation Science, PLOS ONE, BMJ, and The Lancet. The red cluster focuses on public health issues, health policies, sports, medicine, and related topics. Prominent journals in this cluster include Implementation Science, BMJ, BMC Health Services Research, BMC Public Health, and Health Research Policy and Systems. The green cluster focuses on management sciences, knowledge management, and scientometrics. Notable journals in this cluster include the Journal of Knowledge Management, Implementation Science, Strategic Management Journal, Expert Systems with Applications, Academy of Management Journal, Management Science, and Scientometrics. The blue cluster represents interdisciplinary topics such as bioinformatics, with prominent journals including Plos One, Nature, and Science. The yellow cluster is more related to medical and disease discussions, with highlighted journals like Lancet, JAMA, The New England Journal of Medicine, and Circulation. Finally, the purple cluster is primarily associated with medical education discussions, with key journals including the Journal of Medical Education, Medical Teacher, and Academic Medicine. The journal "Implementation Science" is the most cited (4069 citations) among the sources examined. It also has the highest total link strength (48757), indicating significant co-citation relationships. Following Implementation Science, Plos One (3723 citations) and BMJ (3286 citations) rank as the second and third most cited journals. Figure 6 provides a breakdown of the co-citation analysis by cited sources in

health knowledge management.

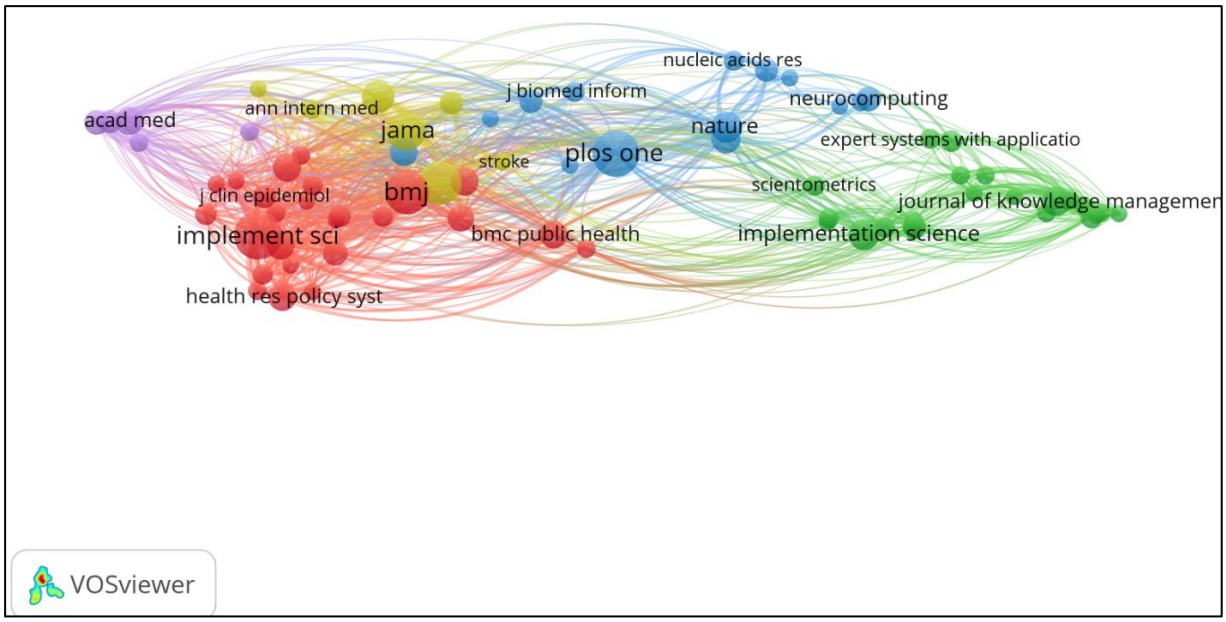

Figure 6: Common citation analysis by cited sources

The most influential publications

Figure 7 shows the results of a co-citation analysis using the technique of analyzing cited references. This analysis aims to identify the most influential publications in the field. To do this, we considered a threshold of 35 citations, including only the most cited and impactful publications. After removing four items that did not have co-citations with other references, we ended up with 13 items. Among these, references (Zuo, Hua & Wen, 2013; Graham, 2006; Braun & Clarke, 2006) emerged as the top three highly cited articles. These references mainly discuss knowledge translation and thematic analyses. Overall, there is a strong correlation between the clusters of references. The red cluster focuses on creating and translating knowledge, while the green cluster concentrates on knowledge translation and evidence-based medical practices. Apart from the three mentioned references, there are other notable publications related to these clusters and other relevant topics. Figure 7 provides a detailed breakdown of the co-citation analysis of cited references in health knowledge management.

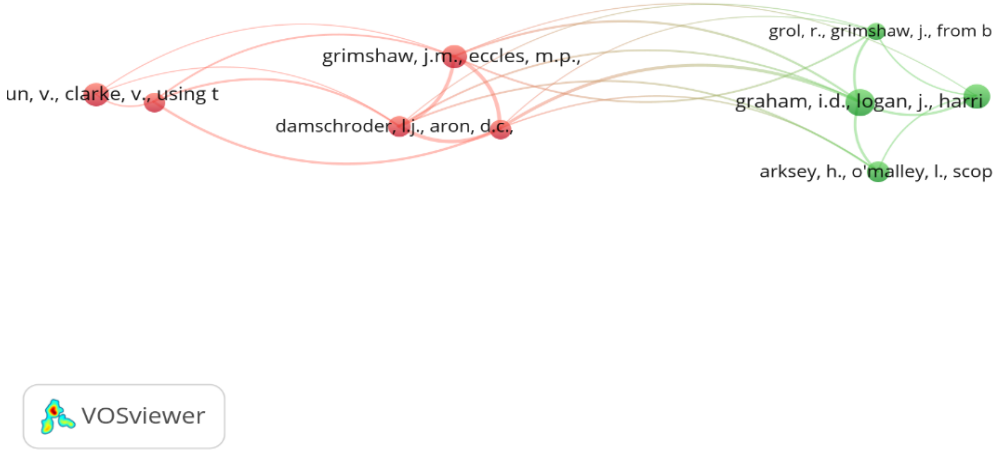

Figure 7: Common citation analysis by cited references

Discussion

This study aimed to analyze the co-authorship network and citation patterns in health knowledge management using the Scopus database. Findings indicate a significant increase in scientific output over the past decade, with anticipated continued growth. These results align with previous studies by Acedo, Barroso, Casanueva, and Galán (2006), Uzunboylu, Eriş, and Ozcinar (2011), Hazeri, Malekizade, and Aminian Dehkourdi (2015), and Ramy, Floody, Ragab, and Arisha (2018). The study reveals a collaborative network among authors, with a central node demonstrating many colleagues and a high level of betweenness. From 2018 to 2019, the highest volume of scientific production was observed, suggesting increased collaborative research and overall quantitative growth in articles. Influential authors, such as Wang Y, Liu H, Liu Y, Li J, and Zhang Y, play a crucial role in the co-authorship network, contributing significantly to article production and acting as communication links. This promotes the establishment of scientific networks and facilitates extensive scientific communication. The study also explores the potential for increased collaboration across different disciplines, highlighting the permeable boundaries of organizations and knowledge management.

Jianhua, He, Ye, Zhuomalamu, Suolanglamu & Haoyang (2023) suggested that willingness to co-author varies across scientific fields, influenced by specialization and task division. Parish et al. (2018) argued that co-authorship arises in research fields due to the need for more complex methods, leading to increased related studies. While the direct relationship between co-authorship and article quality is debated, a positive correlation between co-authorship and article impact is plausible. Additionally, this study reveals a decrease in citations in health knowledge management. Authors with the most citations, such as Graham I.D., Chen H, and Li Y., are considered influential. However, compared to prolific writers like Wang Y and Zhang Y, these individuals had less collaboration in scientific production. The results align with Serenko's study (2013), which notes that despite the growing number of cooperation centers in knowledge management, scientific cooperation rates among pioneers in this field are insignificant. Previous research has shown that more scientific products lead to more citations. Therefore, we expect new and prolific authors with many scientific publications to have the most citations. The results confirm Lutka's law, where a small number of authors have published a large portion of scientific production.

Regarding organizational cooperation, 30 international organizations, including the Dalla Lana School of Public Health, the Institute of Health Policy, Management and Evaluation, and Ottawa Hospital Research Institute, exhibit strong inter-organizational and intra-organizational scientific cooperation. Canada and America are at the forefront of collaboration between countries, aligning with the results of Tinazzi, Toni, Veronese, Ajena, Cruccu, and Calabresi's study (2014).

This study highlights the relative importance of different journals in health knowledge management. Journals such as Implementation Science, Plos One, BMJ, and Lancet receive the most citations and have the most significant impact. Subjects such as management science, knowledge management, scientific evaluation, informatics, and interdisciplinary topics are highly cited and influential. The top three cited articles focus on knowledge translation and implementation for patient treatment (evidence-based medicine), indicating the increasing importance of interdisciplinary issues related to knowledge management.

Limitation

A notable limitation of this study is the exclusive reliance on the Scopus database for data collection. This approach may result in omitting specific articles and reputable scientific resources in other databases, such as PubMed, Web of Science, or Google Scholar. Consequently, the findings may not fully capture the landscape of collaborations and citation patterns in health knowledge management, potentially introducing bias into the results. To enhance the comprehensiveness of future research, it is recommended to utilize multiple databases, which would provide a more inclusive overview of the existing literature.

Conclusion

This study underscores the dynamic and rapidly evolving nature of health knowledge management. Analyzing collaboration patterns, identifying influential contributors, and exploring citation dynamics provide critical insights into the mechanisms driving knowledge production and dissemination in this field. These findings have significant implications for researchers, policymakers, and healthcare organizations. As the boundaries of healthcare knowledge management increasingly intersect with other disciplines, a concerted focus on interdisciplinary approaches is necessary. Sustained efforts to build robust collaboration networks and invest in impactful, globally relevant research are crucial for advancing this critical field and addressing pressing healthcare challenges.

Acknowledgments

The Iran University of Medical Sciences supported this article under the code of ethics IR.IUMS.REC 1400.1213 was obtained from the National Ethics Committee in Biomedical Research.

References

Acedo, F. J., Barroso, C., Casanueva, C. & Galán, J. L. (2006). Co-authorship in management and organizational studies: An empirical and network analysis. *Journal of Management Studies,* 43(5), 957-983. http://dx.doi.org/10.1111/j.1467-6486.2006.00625.x

Baji, F. & Osareh, F. (2015). An investigation into the structure of the co-authorship network of neuroscience field in Iran, using a social network analysis approach. *Journal of Studies in Library and Information Science*, 6(14), 71-92. Retrieved from https://slis.scu.ac.ir/article_11313_866e623add8da940d22860399239749e.pdf?lang=en [in Persian]

Braun, V. & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77-101. https://doi.org/10.1191/1478088706qp063oa

El Morr, C. & Subercaze, J. (2010). Knowledge management in healthcare. In *Handbook of research on developments in e-health and telemedicine: Technological and social perspectives* (pp. 490-510). IGI Global.

Graham, I. D., Logan, J., Harrison, M. B., Straus, S. E., Tetroe, J., Caswell, W. & Robinson, N. (2006). Lost in knowledge translation: Time for a map? *Journal of Continuing Education in the Health Professions*, 26(1), 13-24. https://doi.org/10.1002/chp.47

Hazeri, A., Malekizade, F. & Aminian Dehkourdi, S. (2015). A study of scientific collaboration and co-authorship networks within knowledge management papers in the category of Library Science, Information Science in the Web of Science. *Quarterly Knowledge and Information Management Journal*, 2(2), 61-74. [in Persian]

Jianhua, H., He, Y., Ye, C., Zhuomalamu, Suolanglamu, & Haoyang, S. (2023). Does scientific collaboration variety influence the impact of articles? *Journal of Information Science*, 0(0). https://doi.org/10.1177/01655515231182067

Maramba, G., Coleman, A. & Ntawanga, F. F. (2020). Causes of challenges in implementing computer-based knowledge management systems in healthcare institutions: A case study of private hospitals in Johannesburg, South Africa. *The African Journal of Information Systems*, 12(1), 4, 75-91. Retrieved from https://digitalcommons.kennesaw.edu/cgi/viewcontent.cgi?article=1655&context=ajis

Metaxiotis, K. (2011). Healthcare knowledge management. *In Encyclopedia of Knowledge Management, Second Edition* (pp. 366-375). IGI Global.

Ovalle-Perandones, M. A., Perianes-Rodriguez, A. & Olmeda-Gomez, C. (2009). Hubs and authorities in a Spanish co-authorship network. In *2009 13th International Conference Information Visualisation* (pp. 514-518). IEEE. https://doi.org/10.1109/IV.2009.87

Parish, A. J., Boyack, K. W., & Ioannidis, J. P. (2018). Dynamics of co-authorship and productivity across different fields of scientific research. *PloS one*, *13*(1), e0189742.

Ramy, A., Floody, J., Ragab, M. A. & Arisha, A. (2018). A scientometric analysis of knowledge management research and practice literature: 2003–2015. *Knowledge Management Research & Practice*, 16(1), 66-77. https://doi.org/10.1080/14778238.2017.1405776

Serenko, A. (2013). Meta-analysis of scientometric research of knowledge management: Discovering the identity of the discipline. *Journal of Knowledge Management,* 17(5), 773-812. https://doi.org/10.1108/JKM-05-2013-0166

Serenko, A. (2021). A structured literature review of scientometric research of the knowledge management discipline: A 2021 update. *Journal of knowledge management*, 25(8), 1889-1925. https://doi.org/10.1108/JKM-09-2020-0730

Shahmoradi, L., Safadari, R. & Jimma, W. (2017). Knowledge management implementation and the tools utilized in healthcare for evidence-based decision making: A systematic review. *Ethiopian Journal of Health Sciences*, 27(5), 541-558. https://doi.org/10.4314/ejhs.v27i5.13

Sousa, M. J., Dal Mas, F. & Da Costa, R. L. (2021). Editorial EJKM Volume 18 Issue 3: Advances in health knowledge management: New perspectives. *Electronic Journal of Knowledge Management*, 18(3), 407-411. https://doi.org/10.34190/ejkm.18.3.2137

Tinazzi, M., Toni, D., Veronese, M., Ajena, D., Cruccu, G. & Calabresi, P. (2014). Scientific research of Italian neurologists from 2008 to 2011. *Neurological Sciences,* 35(3), 437-442. https://doi.org/10.1007/s10072-013-1553-z

Uzunboylu, H., Eriş, H. & Ozcinar, Z. (2011). Results of a citation analysis of knowledge management in education. *British Journal of Educational Technology*, 42(3), 527-538. https://doi.org/10.1111/j.1467-8535.2009.01018.x

Wilanda, A., Pahrijal, R. & Bunyamin, I. A. (2024). Hospital performance and operational management: A bibliometric review of key factors affecting effectiveness. *West Science Social and Humanities Studies*, 2(08), 1401–1412. https://doi.org/10.58812/wsshs.v2i08.1232

Zuo, M. Y., Hua, X. Q. & Wen, X. W. (2013). Who is the best connected researcher? An analysis of co-authorship networks of knowledge management from 2000 to 2010. In *The 19th International Conference on Industrial Engineering and Engineering Management: Management System Innovation* (pp. 761-770). Springer Berlin Heidelberg. http://dx.doi.org/10.1007/978-3-642-38427-1_81