REVIEW ARTICLE

POWER STRUCTURES IN CONTEMPORARY MEDICAL SYSTEMS: A PUBLIC HEALTH–ORIENTED BIBLIOMETRIC ANALYSIS

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Abstract

This study examines the scholarly landscape of power structures in contemporary medical systems through a comprehensive bibliometric analysis from a public health perspective. A systematic bibliometric review was conducted using VOSviewer, Biblioshiny (R-package), and Harzing's Publish or Perish, based on data retrieved from the Scopus database. A total of 279 journal articles published between 2003 and 2025 were analyzed, revealing a sharp and sustained increase in research output over the past decade. The findings demonstrate that issues related to health system governance, stewardship, institutional authority, and healthcare delivery structures dominate the literature, reflecting growing concern over how power is exercised and regulated within medical systems. The analysis further identifies emerging themes related to digital power, particularly the governance of artificial intelligence, health data, and algorithmic decision-making, signaling a shift in power dynamics from traditional institutional control toward technologically mediated authority. Research output is largely concentrated in high- and middle-income countries, with the United Kingdom, the United States, and Australia as leading contributors, and prominent public health and health policy institutions serving as key knowledge hubs. Major journals in health services research, public health, and health policy play a central role in shaping the field. Despite this growth, notable gaps remain, particularly regarding empirical evidence from low-resource and fragile health systems, as well as the implications of digital governance for health equity, accountability, and public trust. Overall, this study provides a structured overview of the evolution and thematic orientation of power-related research in medical systems and highlights critical directions for future inquiry aimed at strengthening equitable and resilient health system governance.

1.INTRODUCTION

Health systems have increasingly become a central focus of scholarly inquiry as the organization, governance, and distribution of power within medical systems grow more complex in response to global health challenges[1-3.] In contemporary medical systems, power is not exercised solely through clinical expertise but is embedded within governance arrangements, institutional hierarchies, policy frameworks, and regulatory mechanisms that shape decision-making, resource allocation, and service delivery[4,5]. From a public health perspective, understanding how power structures operate within health systems is essential, as these structures directly influence health equity, system performance, and population health outcomes[6,7]. The growing frequency of health crises such as pandemics, humanitarian emergencies, and systemic capacity shocks has further intensified attention on governance capacity, stewardship, and institutional authority as determinants of health system resilience [8,9].

The evolution of medical systems has also introduced new forms of power beyond traditional administrative and professional hierarchies. The expansion of digital health technologies, including artificial intelligence, health data infrastructures, and algorithmic decision-making tools, has transformed how

authority is exercised and regulated within healthcare[10,11]. These developments have shifted power toward actors who control data, technological platforms, and algorithmic models, raising critical questions regarding accountability, transparency, and public trust[12,13]. While digital transformation promises efficiency and innovation, it also presents significant governance challenges, particularly related to data privacy, equity, and the ethical use of automated systems in clinical and policy contexts [14,15]. As a result, digital governance has emerged as a key domain in which contemporary power structures within medical systems are being reshaped[16].

In addition to technological change, power dynamics within medical systems are increasingly negotiated across multiple levels of governance and among diverse actors. Decentralization reforms, community participation initiatives, and network-based governance arrangements have redistributed authority among national governments, local health authorities, professional groups, and community stakeholders[17,18]. Although such arrangements are often promoted as mechanisms for democratizing decision-making and improving system responsiveness, their effectiveness depends heavily on institutional design and the extent to which local actors possess genuine influence[19,20]. Persistent professional hierarchies and unequal access to decision-making spaces continue to shape healthcare experiences for vulnerable populations, including migrants, incarcerated individuals, and communities in fragile or conflict-affected settings[21-23]. These dynamics highlight the inherently political nature of health systems and underscore the importance of examining power relations beyond formal organizational structures[24,25].

Given the rapid evolution and increasing complexity of power structures in contemporary medical systems, there is a growing need to systematically assess how this body of research has developed over time. Bibliometric analysis provides a robust methodological approach for mapping research trends, identifying dominant themes, and highlighting influential authors, institutions, and journals within the literature on health system governance and power[3]. However, existing reviews remain fragmented and often focus on isolated dimensions such as governance frameworks, digital health, or professional authority without offering an integrated perspective on how power operates across institutional, technological, and regulatory domains[2,12]. Therefore, this bibliometric study aims to analyze the current state of research on power structures in contemporary medical systems from a public health perspective, identifying key patterns, thematic developments, and research gaps to inform future scholarship and policy-oriented inquiry.

RESEARCH METHODOLOGY

Research Design

This study adopts a quantitative research design using bibliometric analysis to systematically map, evaluate, and synthesize the intellectual structure, research trends, and thematic evolution of scholarship on power structures in contemporary medical systems from a public health perspective. Bibliometric analysis is particularly suitable for examining large volumes of scientific literature, enabling the identification of dominant concepts, influential authors and journals, collaboration patterns, and emerging research directions within a given domain. To enrich the interpretive depth of the findings, bibliometric techniques are complemented with content analysis, allowing for a more nuanced understanding of how concepts such as power, authority, governance, and hierarchy are framed and operationalized in medical and healthcare system research. The Scopus database was selected as the primary data source due to its extensive coverage of high-quality, peer-reviewed journals, robust citation indexing, and reliable bibliographic metadata, which make it especially appropriate for longitudinal and interdisciplinary bibliometric studies in public health and medical research.

Search Strategy, Screening Criteria, and Data Collection

The study followed an adapted Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) framework to ensure methodological transparency, replicability, and rigor throughout the search and screening process. The complete selection procedure is presented in the PRISMA flow diagram (Figure 1). Data were retrieved from the Scopus database in January 2026 using a structured search strategy designed to capture scholarly literature addressing power relations within medical and healthcare systems. The search query combined key conceptual terms related to power and governance with terms representing medical and health system contexts, as follows: ("power structures" OR "hierarchies" OR "authority" OR "governance") AND ("medical systems" OR "healthcare" OR "health system" OR "clinical settings")

The search was limited to publications published between 2003 and 2025. The initial retrieval identified 5,044 records, which were subsequently screened according to predefined inclusion and exclusion criteria. Publications were excluded if they were non-article documents (e.g., conference papers, book chapters, editorials), non-journal sources, or written in languages other than English or Indonesian. Following this screening process, 4,765 records were removed,

resulting in a final dataset of 279 journal articles deemed eligible and included for bibliometric analysis.

Tools and Data Analysis

A combination of bibliometric and analytical tools was employed to ensure comprehensive and rigorous data analysis. R-Biblioshiny and Microsoft Excel were used for descriptive statistical analysis, including publication growth trends, document distribution by year, source analysis, and frequency analysis of authors and keywords. VOSviewer was utilized to construct and visualize bibliometric networks, such as co-authorship networks, country and institutional collaboration patterns, and keyword co-occurrence maps based on author keywords and abstracts. Citation performance and impact metrics were calculated using Harzing's Publish or Perish, enabling the identification of highly cited articles, influential authors, and leading journals within the research field. The integration of descriptive bibliometric analysis, network visualization, citation analysis, and qualitative content interpretation allows this study to systematically uncover the structural characteristics, dominant themes, collaboration dynamics, and emerging research trends related to power structures in contemporary medical systems from a public health perspective.
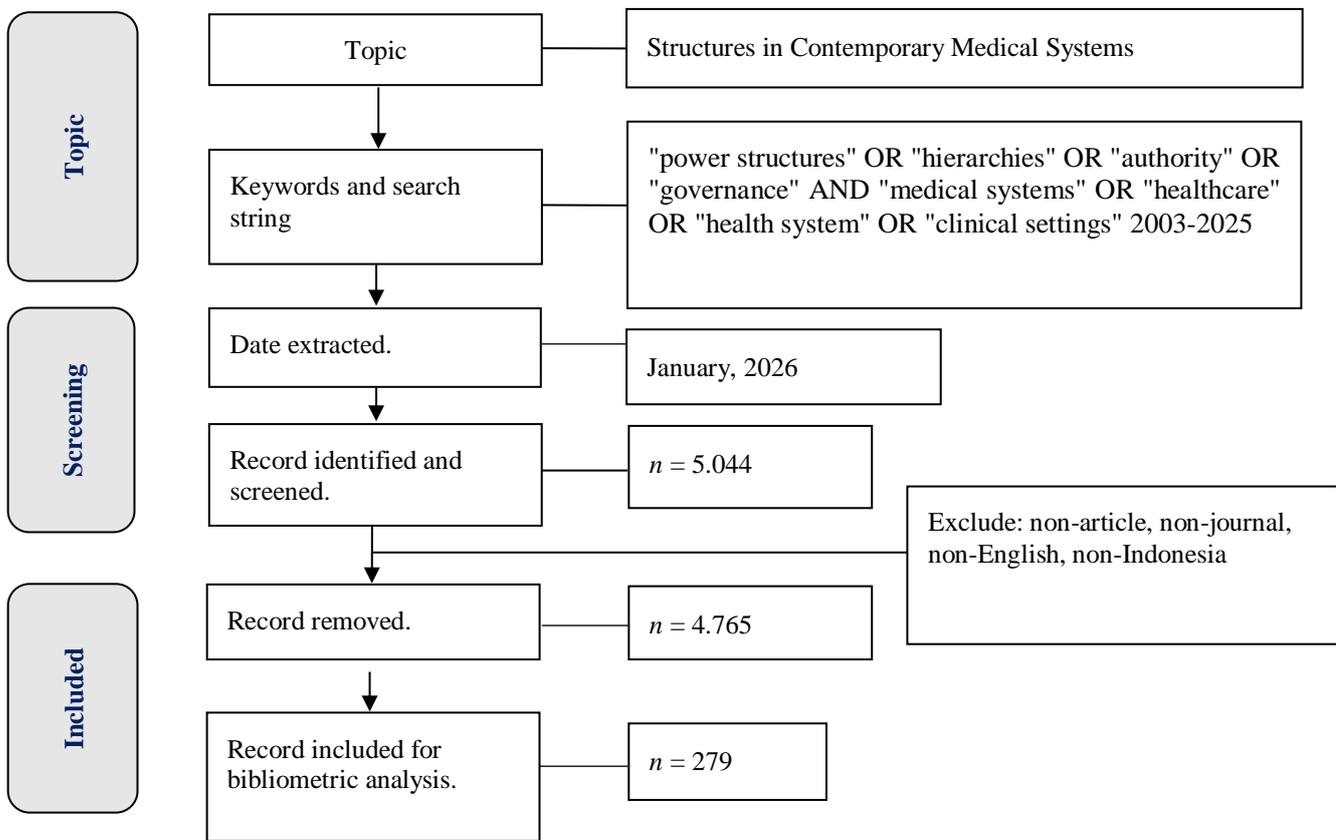

Figure 1. Diagram PRISMA

RESEARCH FINDINGS AND DISCUSSION

Descriptive analysis

Figure 2 summarizes the bibliometric characteristics of the dataset, comprising 279 journal articles published between 2003 and 2025 across 163 sources. These publications were authored by 1,326 authors, with no single-authored documents, indicating a strong collaborative research pattern. The average number of co-authors per document was 8.79, while 34.05% of the articles involved international co-authorship, reflecting substantial cross-country collaboration. The annual publication growth rate reached 20.55%, demonstrating a rapid increase in scholarly attention to the topic. The average document age was 5.16 years, suggesting a relatively recent and active research field. In total, the articles cited

2,539 references, used 890 author keywords, and received an average of 19.49 citations per document, indicating moderate to strong academic impact and thematic diversity within the literature.

Figure 2. Dataset

Figure 3 depicts the annual distribution of 279 journal articles published between 2003 and 2025, revealing a consistent and accelerating growth in research on power structures in contemporary medical systems. During the initial period (2003–2010), publication activity remained minimal, with no more than three articles per year, indicating that the topic was still marginal within public health scholarship. A gradual increase became apparent after 2015, suggesting growing academic recognition of power, governance, and authority as relevant analytical lenses in medical system studies. From 2020 onward, the growth trajectory became more pronounced, with annual outputs rising steadily and peaking in 2025 (61 articles). This surge reflects heightened scholarly engagement, likely influenced by increasing attention to systemic governance, institutional authority, and structural inequalities in healthcare, particularly in the context of global health challenges. Overall, the publication trend indicates a transition from an emerging to a consolidated research field, with rapid expansion in recent years underscoring its increasing relevance within public health research.
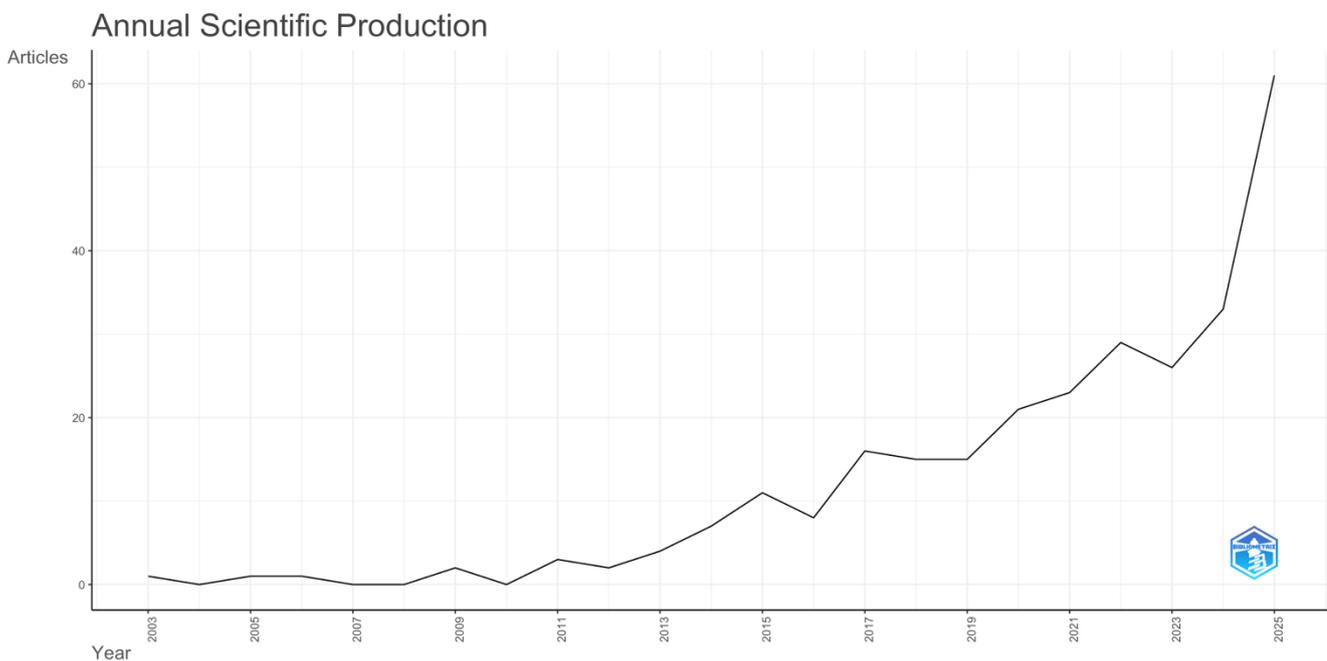

Figure 3. Number of publications per year

Research trend analysis

Figure 4 illustrates the distribution of research across subject areas, demonstrating the interdisciplinary nature of studies on power structures in contemporary medical systems. Medicine constitutes the largest share of publications (43.0%), confirming that the topic is primarily anchored in medical and healthcare research. This is followed by Social

Sciences (14.0%), highlighting the importance of sociological, political, and governance perspectives in examining power relations within medical systems. Other notable contributions come from Nursing (6.2%), Computer Science (5.3%), Business and Management (4.9%), and Health Professions (4.5%), reflecting growing interest in organizational dynamics, digital health systems, and professional authority in healthcare settings. Smaller proportions are observed in Engineering (3.1%), Environmental Sciences (3.1%), Arts and Humanities (2.4%), and Economics (2.4%), indicating complementary analytical approaches from technical, ethical, and economic perspectives. The Other category accounts for 10.9%, capturing a diverse range of additional disciplines. Overall, this distribution underscores the multidisciplinary character of the field, with strong medical foundations complemented by social, organizational, and technological perspectives.
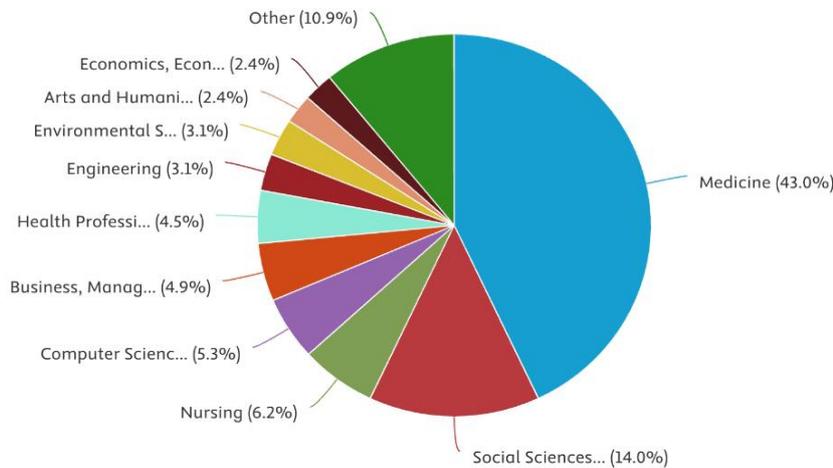

Figure 4. Subject Area

Figure 5 presents the most relevant publication sources based on the number of documents related to power structures in contemporary medical systems. BMC Health Services Research emerges as the leading journal with 23 documents, indicating its central role in publishing research on health systems, governance, and institutional dynamics. This is followed by Health Policy and Planning (13 documents) and Frontiers in Public Health (12 documents), highlighting the strong policy- and public health–oriented focus of the literature. Other prominent sources include BMJ Global Health and Health Policy (each with 8 documents), as well as PLOS ONE (7 documents) and BMJ Open (6 documents), reflecting the interdisciplinary and open-access nature of research in this field. Journals such as the International Journal of Health Policy and Management (5 documents), NPJ Digital Medicine (4 documents), and Social Science & Medicine (4 documents) further demonstrate the integration of governance, digital health, and social science perspectives. Overall, the distribution of sources indicates that research on power structures in medical systems is primarily concentrated in health services, policy, and public health journals, with meaningful contributions from broader interdisciplinary outlets.
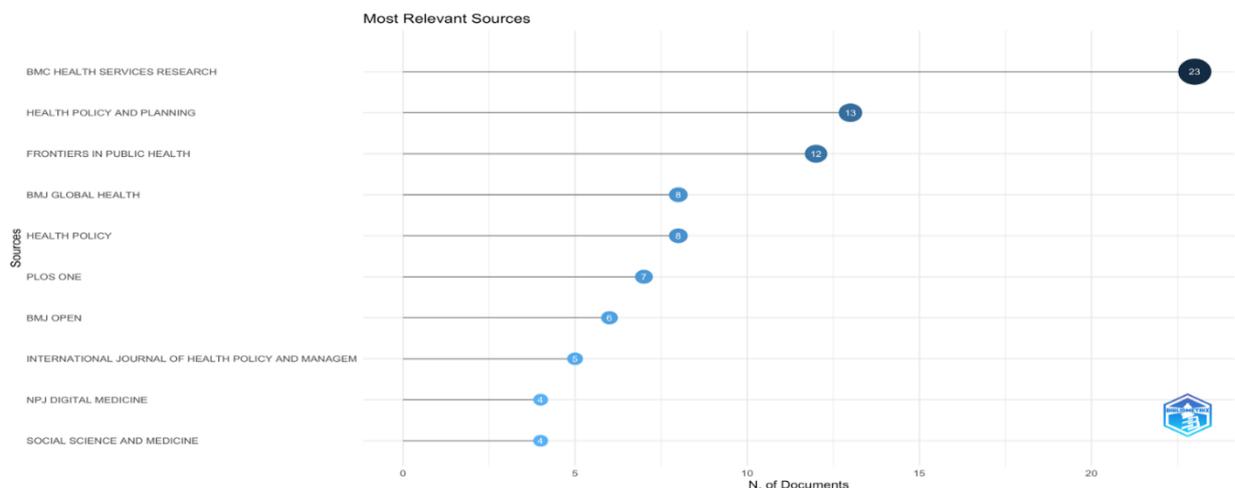

Figure 5. Most Relevant Sources

Figure 6 illustrates the local impact of key publication sources based on the H-index, reflecting their influence within the literature on power structures in contemporary medical systems. BMC Health Services Research demonstrates the highest local impact with an H-index of 12, underscoring its central role in shaping scholarly discourse on health systems and governance. This is followed by Health Policy and Planning (H = 11), indicating strong and consistent citation performance within the field. Several journals show moderate impact, including BMJ Global Health and Health Policy (each with H = 6), as well as Frontiers in Public Health and the International Journal of Health Policy and Management (each with H = 5). Other sources, such as BMJ Open (H = 4) and journals focusing on quality of care, environmental health, and mental health systems (H = 3), contribute more selectively but still play a role in advancing the field. Overall, the H-index distribution highlights a concentration of scholarly influence in health services and policy–oriented journals, reinforcing the prominence of governance and institutional perspectives in this research domain.
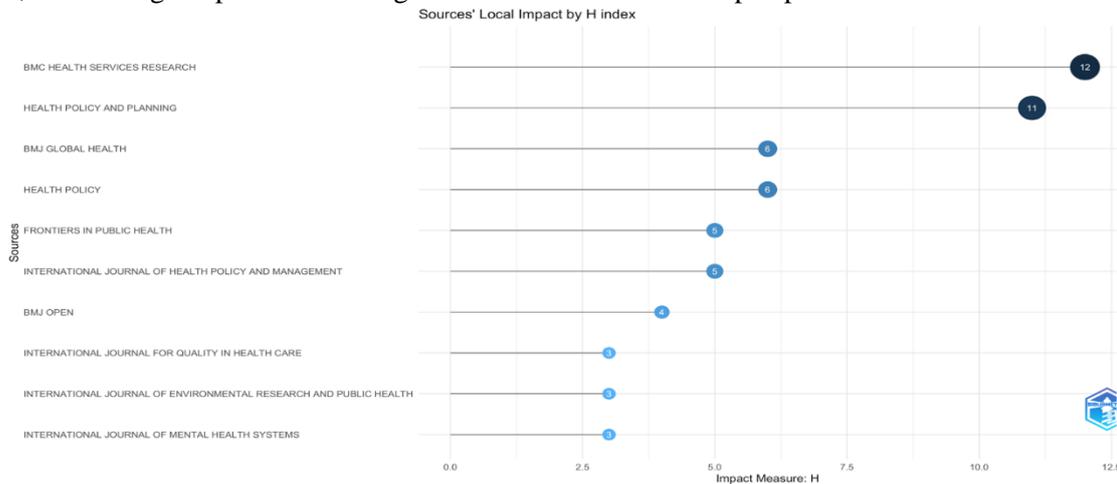

Figure 6. Journal local impact related to the topic

Most influential countries, affiliates, and productive author

Figure 7 shows the geographical distribution of research output on power structures in contemporary medical systems. The United Kingdom emerges as the leading contributor with 70 publications (25.09%), indicating a strong research emphasis on health systems, governance, and institutional power within the UK context. This is followed by the United States with 38 publications (13.62%), reflecting its significant but comparatively lower contribution. Other major contributors include Australia (26 publications; 9.32%) and Canada (24 publications; 8.60%), highlighting substantial engagement from countries with well-established public health and healthcare research infrastructures. South Africa (21 publications; 7.53%), Italy, and the Netherlands (each with 20 publications; 7.17%) demonstrate notable contributions from both the Global South and Europe. Additionally, China (17 publications; 6.09%), Saudi Arabia (13 publications; 4.66%), and Germany (12 publications; 4.30%) further illustrate the international scope of the research. Overall, the distribution indicates that scholarship in this field is geographically diverse but predominantly concentrated in high- and middle-income countries, underscoring the global relevance of power and governance issues in medical systems while also reflecting unequal research capacities across regions.
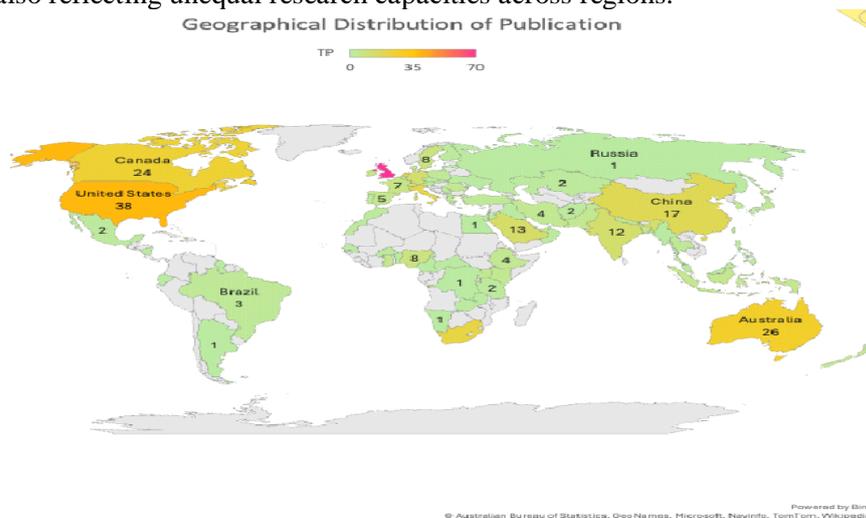

Figure 7. Most influential countries

Figure 8 presents the most relevant institutional affiliations based on the number of articles published on power structures in contemporary medical systems. The London School of Hygiene and Tropical Medicine leads with 19 publications, highlighting its prominent role in health systems and governance research. This is followed by The University of Queensland (16 publications) and The University of Sydney School of Public Health (13 publications), indicating strong contributions from leading public health institutions in Australia. Several UK- and Europe-based institutions also feature prominently, including King's College London (12 publications), Trinity College Dublin (10 publications), and Università Cattolica del Sacro Cuore (10 publications), reflecting sustained European engagement in this research area. Additionally, Jouf University, Leinster, and Qassim University (each with 10 publications) demonstrate growing contributions from the Middle East and other regions. The Erasmus School of Health Policy and Management (9 publications) further underscores the importance of health policy and management perspectives. Overall, the distribution highlights the concentration of research output within major public health and policy-oriented institutions, alongside increasing international institutional participation.
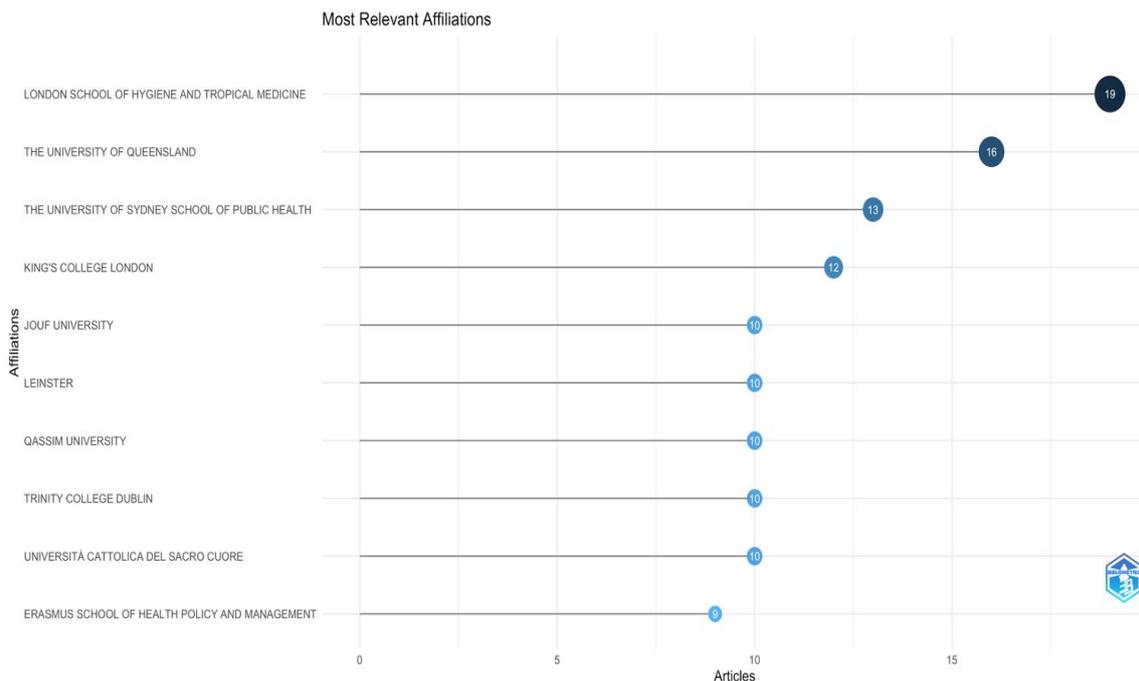
Figure 8. The top 10 Relevant Affiliations

Table 1 presents the most relevant authors in research on power structures in contemporary medical systems, based on publication output and citation impact. Gilson, L. leads in terms of productivity with 5 publications (1.79%) and 208 total citations, reflecting strong scholarly influence. Abimbola, S. follows with 4 publications (1.43%) and 188 citations, demonstrating a high citation impact relative to output. Several authors contribute three publications each, including Petersen, I., Agyepong, I.A., Blanchet, K., Jan, S., Lehmann, U., Negin, J., and Thornicroft, G., many of whom exhibit substantial citation performance. Notably, Blanchet, K. records the highest citation intensity, with 310 citations and an average of 103.33 citations per publication, indicating exceptional impact. Other contributors, such as Alem, A., further strengthen the author landscape through consistent participation and moderate citation influence.

Table 1. Most Productive Authors

Author Name	TP	%	TC	C/P	h-indeks	g-indeks
Gilson, L.	5	1,79%	208	41,60	6	8
Abimbola, S.	4	1,43%	188	47,00	6	8
Petersen, I.	4	1,43%	96	24,00	5	6
Agyepong, I.A.	3	1,08%	113	37,67	5	6
Blanchet, K.	3	1,08%	310	103,3	6	6
Jan, S.	3	1,08%	142	47,33	5	6
Lehmann, U.	3	1,08%	218	72,67	4	4
Negin, J.	3	1,08%	92	30,67	3	4
Thornicroft, G.	3	1,08%	69	23,00	4	4
Alem, A.	2	0,72%	47	23,50	4	4

Citation analysis

Table 2 presents the most influential articles in the field based on total citations and normalized citation impact. The study by Evans (2003) published in the *Journal of Clinical Nursing*, titled *"Hierarchy of evidence: a framework for ranking evidence evaluating healthcare interventions,"* emerges as the most cited work with 668 total citations, underscoring its foundational role in shaping evidence hierarchies and authority in medical decision-making. Highly influential governance-focused studies include Blanchet (2017) in the *International Journal of Health Policy and Management* (305 citations) and Abimbola (2014) in *Health Policy and Planning* (109 citations), both of which contribute key conceptual frameworks for understanding health system governance and power relations. Recent scholarship demonstrates strong citation momentum, particularly Reddy (2024) in *Implementation Science*, which records the highest normalized citation score (20.14), reflecting rapid uptake of research on artificial intelligence, governance, and implementation in healthcare systems. Additional highly cited works address governance and power in diverse contexts, including mental health systems, pandemic response, healthcare reforms, and ethical challenges of artificial intelligence in medicine. Overall, the citation profile highlights the centrality of governance, evidence hierarchies, and emerging digital authority structures in shaping contemporary medical systems.

Table 2. The top ten most cited documents

Authors	Paper	TC	C/Y	Normalized TC
Evans, 2003, J Clin Nurs	Hierarchy of evidence: a framework for ranking evidence evaluating healthcare interventions	668	27,83	1,00
Blanchet, 2017, Int J Health Policy Manag	Governance and Capacity to Manage Resilience of Health Systems: Towards a New Conceptual Framework	305	30,50	5,56
Reddy, 2024, Implement Sci	Generative AI in healthcare: an implementation science informed translational path on application, integration and governance	282	94,00	20,14
Petersen, 2017, Health Policy Plann	Strengthening mental health system governance in six low- and middle-income countries in Africa and South Asia: challenges, needs and potential strategies	152	15,20	2,77
Guan, 2019, Chin Med Sci J	Artificial Intelligence in Healthcare and Medicine: Promises, Ethical Challenges and	125	15,63	4,57

		TC		C/Y
	Governance			
Sharma, 2021, J Bus Res	Responses to COVID-19: The role of governance, healthcare infrastructure, and learning from past pandemics	113	18,83	6,53
Mikkelsen-Lopez, 2011, Bmc Int Health Hum Rights	An approach to addressing governance from a health system framework perspective	112	7,00	1,51
Abimbola, 2014, Health Policy Plann	Towards people-centred health systems: a multi-level framework for analysing primary health care governance in low- and middle-income countries	109	8,38	2,44
Marais, 2015, Int J Ment Health Syst	Health system governance to support integrated mental health care in South Africa: challenges and opportunities	101	8,42	3,21
Ramesh, 2014, Health Policy Plann	Health governance and healthcare reforms in China	94	7,23	2,10

Note(s): TC=total citations; C/Y=average citations per years

Keyword analysis

Figure 9 presents the most frequently occurring keywords in the literature on power structures in contemporary medical systems. The terms "Human" (65.95%), "Humans" (51.61%), and "Article" (43.37%) appear most frequently, reflecting standard indexing practices in biomedical research. Substantive thematic keywords are dominated by system- and service-oriented concepts, including "Health Care Delivery" (32.97%) and "Delivery of Health Care" (27.60%), indicating strong attention to how healthcare services are organized and administere. Governance-related terms are also prominent, with "Governance" (20.43%), "Organization and Management" (19.00%), "Government" (15.41%), and "Health Care Policy" (18.28%) appearing frequently, underscoring the central role of institutional authority and policy frameworks in the literature. Keywords related to population and workforce dimensions, such as "Female", "Male", "Adult", and "Health Care Personnel", further highlight the focus on demographic and professional actors within medical systems. Additionally, the presence of "Public Health" (11.11%) and "Qualitative Research" (11.11%) reflects the methodological and disciplinary orientation of the field. Overall, the keyword distribution indicates that research in this domain primarily centers on governance, healthcare delivery structures, and policy-related dimensions within public health contexts.

Figure. 9 Top Keywords

The thematic map in Figure 10 illustrates the structure and dynamics of research themes based on their degree of relevance (centrality) and level of development (density). In the motor themes quadrant (upper right), topics such as *prevention*, *vaccination*, and *intervention*, along with issues related to *children*, *obesity*, and *physical activity*, exhibit both high centrality and strong internal development, indicating well-established and influential research areas. These themes represent the main driving forces of the literature, particularly within public health interventions and preventive health strategies. In contrast, the niche themes quadrant (upper left) includes topics such as *qualitative study*, *implementation science*, *digital health*, *program evaluation*, and *leadership*, which are conceptually well developed but less central, reflecting specialized research areas with focused analytical depth. Meanwhile, the basic themes quadrant

(lower right) contains foundational topics such as *public health communication*, *public health systems*, *surveillance*, and *health equity*, as well as contemporary issues like *COVID-19*, *pandemic*, and *social media*. These themes are highly relevant across the field but show lower internal cohesion, indicating their role as broad conceptual foundations that connect multiple research streams. Finally, the emerging or declining themes quadrant (lower left) includes topics such as *ethics*, *health literacy*, and *social network analysis*, which display lower centrality and density. These themes may represent emerging research fronts that have not yet been fully developed or areas experiencing reduced scholarly attention, but they also hold potential for future theoretical and empirical advancement.
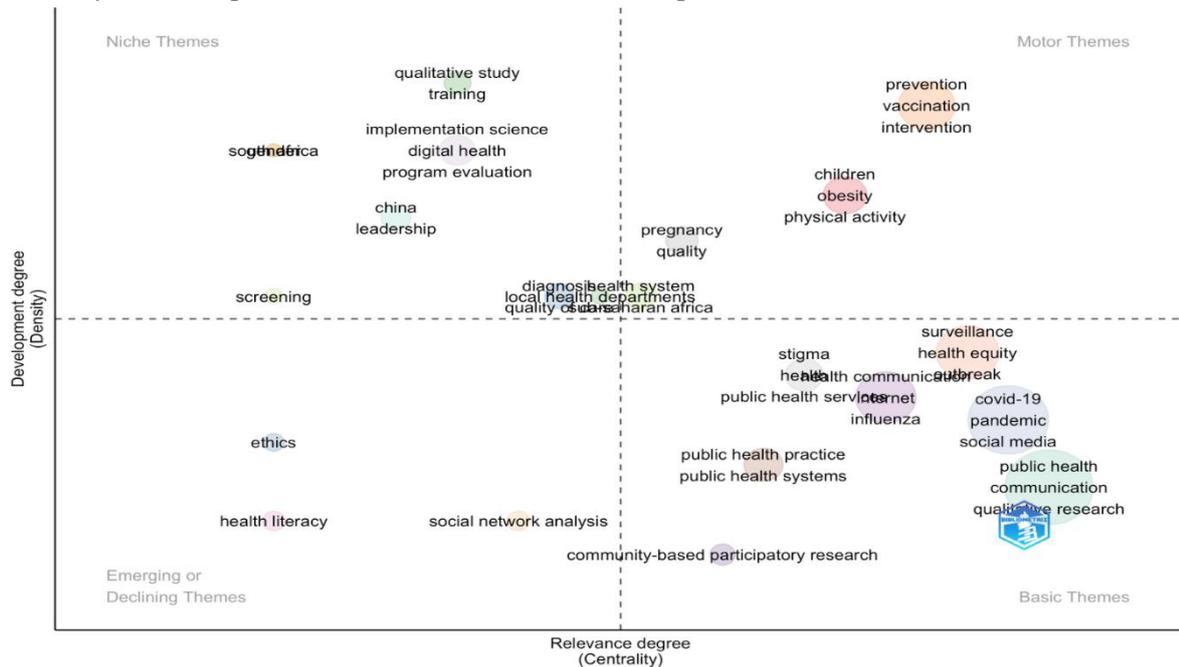

Figure. 10 Thematic Maps

DISCUSSION

Governance Capacity, Stewardship, and Health System Resilience

Power structures in contemporary medical systems are most clearly manifested through mechanisms of stewardship that is, who sets the rules of the game, allocates resources, and controls service priorities. From a public health perspective, governance is not merely an administrative function but an "architecture of power" that shapes system resilience, crisis response capacity, and service quality. Consequently, governance scholarship often positions the state/health authorities, service institutions, and policy actors at the center, demonstrating how strategic decisions and institutional design can strengthen or weaken system performance, particularly when facing shocks such as pandemics, conflicts, or capacity crises.

Numerous studies illustrate how governance operates as a power structure that regulates system resilience and performance. Blanchet [26] emphasizes the close relationship between governance and system capacity to manage resilience, while Belloni [3] conceptualize governance, shocks, and resilience as a key analytical framework. Khatri [7] affirm the contribution of governance to the delivery of primary health care (PHC) for universal health coverage (UHC),

and Alqahtani [27] demonstrate the role of governance–risk–compliance as a determinant of systemic impact. Cormack [8] highlights post-COVID governance dynamics in federated systems, whereas Schmitt et al. [5] emphasize institutional learning processes aimed at strengthening governance in Germany. Greener [2] repositions changes in welfare governance as a shift in power regimes within healthcare, while Meessen and Perazzi [28] examine the role of hospital associations in governance before and during the pandemic. At a more "frontline" level, Tuangratananon et al. [9] show how policy and governance responses shaped pandemic management in Thailand, while George et al. [29] underscore the association between governance and service quality in low- and middle-income countries (LMICs).

Artificial Intelligence, Data Governance, and Algorithmic Authority in Healthcare

The emergence of artificial intelligence, datafication, and digital transformation has generated new forms of power, commonly described as algorithmic authority. In this context, governance no longer regulates organizations alone but also governs AI models, data flows, access, auditability, and the accountability of automated decisions. Power increasingly resides in

questions such as "who controls the data," "who defines risk," and "who holds authority over high-risk AI systems." From a public health perspective, digital governance must safeguard safety, equity, and privacy protection, as failures in these domains can exacerbate inequalities and erode public trust.

Empirical evidence demonstrates an expansion of power arenas from clinical regulation toward technological regulation. Reddy[10] frames generative AI as a translational and implementation challenge requiring clear governance, while Owens et al.[30] highlight a "responsibility vacuum" in AI monitoring within healthcare services. Kim et al. [31] present a case study on the establishment of organizational AI governance, and Hassan et al. [11] propose a governance framework for healthcare AI. Bartsch[14] address governance of high-risk AI systems across sectors, while Liao et al.[32] detail governance elements for the safe and equitable deployment of clinical AI. Rees et al.[12] conceptualize information governance as a socio-technical process for building trustworthy AI, whereas Ünver [13] examines fiduciary governance relationships and trust in AI systems. In the data domain, Yao and Liu[16] model the dynamics of healthcare data governance in China, while Ahmed et al.[15] assess the effectiveness of data governance frameworks through ISO, GDPR, and HIPAA standards within blockchain-based ecosystems.

Multi-level Governance, Participation, and Network/Community Power

Power structures in medical systems are also evident in **multi-level relationships** (central–local) and in mechanisms of citizen and patient participation in decision-making. In many cases, power is not centralized but distributed across networks (network governance), including local health councils, consumer partnerships, inter-institutional collaborations, and community governance in fragile settings. From a public health standpoint, participation and co-production are often framed as strategies for the "democratization of power"; however, their effectiveness depends on institutional design and the extent to which local actors are granted meaningful influence over decisions.

Several studies confirm governance as an arena of power negotiation across levels and actors. Natali et al. [17] demonstrate how multi-level governance influences policy design through the EU Recovery and Resilience Facility. Suárez-Herrera et al. [33] compare participatory lessons from local health councils in Brazil and Spain, while Parker et al. [20] develop an evaluation tool to assess the impact of consumer partnerships in healthcare governance. Aggarwal et al. [34] review the role of patients in governing sustainable healthcare systems, and Grob et al. [35] describe patient roles in the governance of learning within learning health systems. In decentralized settings, Dodd et al.[36] analyze governance of community health worker programs in the Philippines. In fragile contexts, Falisse et al. [37] explore community governance of health services in Burundi and the Democratic Republic of Congo. Belrhiti et al.[18] map collaborative governance dynamics within healthcare networks, while Ugyel[38] examines governance networks in public healthcare delivery in the Pacific. Dong et al [39] conclude this body of work with a study of transformation toward integrated healthcare in Ontario, conceptualized as a layered and networked governance process.

Authority, Professional Hierarchies, Legitimacy, and the Politics of Power

Power structures are further embodied in professional authority, organizational hierarchies, and sources of legitimacy that determine who is "entitled" to define health problems and solutions. In modern medical systems, power is not held solely by the state or managers but also by professions (physicians, nurses, pharmacists, social workers), standards of evidence, and epistemic frameworks that regulate what is considered valid knowledge. This theme is particularly relevant for public health because hierarchies and legitimacy shape access, patient experiences, responses to vulnerable groups (migrants, asylum seekers, incarcerated populations), and system reactions to conflict and crisis often revealing unequal power relations.

Numerous studies provide concrete illustrations of authority and hierarchy in practice. Evans [40] serves as a foundational reference through the concept of the "hierarchy of evidence," which influences clinical epistemic authority. Choroszewicz and Alastalo [41] examine professional hierarchies within public–private collaborative data management systems, while Vivier et al. [24] trace shifts in institutional logics and hierarchical or siloed relations in the healthcare sector. Fantus et al. [25] show how hierarchy acts as a "constraint" that generates moral distress among social workers in the U.S. health system. In care relationships, Decataldo [42] analyze communication barriers, authority, and adaptive strategies in NICU settings. Addressing inequality, Power and Baxter [21] examine racialized governance and asylum seeker access to healthcare in England. In conflict-affected regions, Paterson et al.[43] analyze governance cooperation with unrecognized health authorities, while Alkhalil et al.[23] investigate health system legitimacy in fragmented conflict zones. In contexts of state control, Bowstead and Meek [22] explore changes in prison healthcare governance from prisoners' perspectives, and Kratzsch et al. [44] provide evidence on

the role of public authorities in healthcare access for uninsured migrants in German cities.

Regulation, Quality, Accountability, and System Control

Another dimension of power structures emerges through instruments of regulation and performance control, including quality standards, audits, incident reporting, anti-corruption procurement measures, and program evaluation. From a public health perspective, these represent forms of administrative power that determine what is considered good or poor performance, who is monitored, and what consequences follow from non-compliance. This theme also highlights how governance functions as a tool to shape organizational and professional behavior through policies, incentives, and control mechanisms that affect patient safety and public trust.

The following studies illustrate accountability as a concrete exercise of power. Gisler et al. [45] evaluate the quality of outpatient palliative care by involving providers, organizations, and health authorities. Lavallee et al. [46] identify underreporting of adverse events as a signal of accountability gaps toward health authorities. Del Sarto et al. [47] highlight high-level corruption in healthcare procurement as a manifestation of power within contracting authorities, while Karakolias [48] links financial distress in public hospitals to governance attributes. At the level of institutional capacity, Gobezie et al. [49] assess governance practices among public hospital managers in Ethiopia. Regarding quality governance, Martin et al. (2023) propose a new approach to healthcare quality governance at the board level, evaluate the boldness or timidity of Canadian ministries and health authorities in quality planning. Drawing lessons from the pandemic, Nteungue et al. (2024) extract insights on infection prevention and control from the WHO COVID-19 scorecard tool, and apply the "hierarchy of controls" to interpret frontline worker responses. Finally, Escano-Arias et al.[50] synthesize lessons on strengthening local governance for UHC based on the COVID-19 response in Quezon City.

CONCLUSION

This study provides a comprehensive bibliometric overview of the evolution, structure, and thematic orientation of research on power structures in contemporary medical systems from a public health perspective. The findings reveal a rapid growth in scholarly output over the past decade, reflecting increasing academic attention to governance, authority, and institutional dynamics within healthcare systems. Bibliometric patterns indicate that the literature is strongly anchored in health services, public health, and policy-oriented journals, with growing interdisciplinary engagement from social sciences, digital health, and information governance studies.

The analysis highlights governance capacity, stewardship, and institutional authority as dominant and recurring themes, underscoring their central role in shaping health system performance, resilience, and equity. Emerging research trends point to a significant shift toward digital power structures, particularly in relation to artificial intelligence, data governance, and algorithmic authority, signaling a transformation in how power is exercised and regulated within medical systems. However, the findings also reveal notable gaps, including limited empirical research on the impacts of algorithmic decision-making on health equity, accountability, and public trust, as well as underrepresentation of low-resource and fragile health system contexts.

Furthermore, substantial geographical and institutional disparities were observed in research contributions, with scholarly output concentrated in high- and middle-income countries and leading academic institutions. This imbalance highlights the need for more inclusive and globally representative research agendas that incorporate perspectives from low- and middle-income regions and marginalized populations. Overall, this study contributes a structured and evidence-based understanding of how power operates across governance, professional hierarchies, digital infrastructures, and regulatory mechanisms in contemporary medical systems. Future research should integrate bibliometric insights with qualitative and policy-oriented analyses to deepen understanding of power relations and to inform more equitable and accountable health system governance.

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