

MAPPING GLOBAL RESEARCH TRENDS ON HEALTHCARE SATISFACTION AND FUNDING MECHANISMS: A DECADE-LONG BIBLIOMETRIC ANALYSIS (2015–2024)

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ABSTRACT

Introduction: Patient satisfaction, funding mechanisms, and health workforce performance are three critical pillars of modern healthcare systems. In a rapidly changing global context, evaluating research trends in these areas is essential to inform evidence-based policies and sustainable financing strategies. This study, thus, aims to explore the thematic evolution of global research on healthcare satisfaction and funding mechanisms over the period 2015–2024.

Methods: This research employed a bibliometric approach by analyzing 185 scientific articles indexed in the Scopus database between 2015 and 2024. The analysis was conducted using VOSviewer software to map keyword co-occurrence, temporal trends, and density visualization of research topics.

Results: Findings revealed a significant shift in global research focus across three main phases. In the early phase (2015–2017), research centered on clinical aspects and patient satisfaction. The middle phase (2018–2021) shifted toward managerial and organizational issues, particularly job satisfaction among healthcare workers. The latest phase (2022–2024) was dominated by themes related to public policy, financial management, and the role of government. Keywords such as patient satisfaction, healthcare quality, and human emerged as central nodes, while topics like government, therapy, and healthcare facility remained peripheral, indicating key research gaps.

Discussion: The results underscore that healthcare quality is influenced not only by clinical interactions but also by macro-level policies, financial governance, and workforce well-being. The study highlights the need for greater focus on developing country contexts, such as Indonesia, particularly in evaluating systems like JKN and INA-CBGs. Equitable, adaptive, and forward-looking financing approaches are essential to building resilient and inclusive healthcare systems.

Keywords: Bibliometric; Healthcare; Funding; Satisfaction; Health Services; Health Policy.

1. INTRODUCTION

Remuneration signifies a mechanism that embodies or translates macro-financing policies into micro-level provider behavior. The remuneration system serves as a set of incentives that directly shape clinical decisions, influence the efficiency of service delivery, and ultimately determine the quality of care patients receive. A physician's motivation to perform more actions, focus on prevention efforts, or prioritize certain qualities depends heavily on the compensation or reward system. An appropriate remuneration model is, as such, key to implementing a functioning health financing system and impacts the overall sustainability of the system⁽¹⁾⁽²⁾. In this regard, the modern healthcare paradigm has evolved from the Triple Aim to the Quintuple Aim. The latest framework adds two crucial dimensions: improving the well-being of the healthcare workforce and advancing health equity. This change reflects the understanding that patient experience is inseparable from the condition of the healthcare provider. A workforce experiencing burnout, for instance, will not be able to provide empathetic and quality care. A healthcare system can also be said to be successful if it is able to provide good outcomes for vulnerable groups and places equity at the core of quality⁽³⁾.

Furthermore, the relationship between government financing healthcare services and citizens' responsiveness to services is robust. Cross-country data analysis consistently exhibits that public healthcare spending (funds derived from taxes or mandatory social insurance) positively correlates with patient satisfaction. In comparison, private healthcare spending, particularly high out-of-pocket (OOP) payments, consistently demonstrates a negative relationship with patient satisfaction⁽⁴⁾. OOP costs create financial barriers to accessing care. Patients may delay or even forgo seeking necessary care due to the risk of being unable to afford it. High OOP costs can lead to catastrophic financial hardship, pushing families into poverty. This is not only a source of dissatisfaction but also a direct violation of the WHO's "financial equity" goal⁽⁵⁾. A landmark study uncovered that transitioning from a predominantly OOP system to a government-funded system resulted in greater improvements in healthcare than transitioning to a Social Health Insurance system. This is likely due to the higher costs of implementing social health insurance and its limited coverage, which may not immediately reduce the OOP burden for the entire population⁽⁶⁾.

Upfront public funding (through taxes or social insurance) effectively separates the behavior of receiving care from the behavior of paying for it at the time of service. This removes a source of anxiety and dissatisfaction for patients. Public funding pools risk across the population and, over time, transforms healthcare from an expensive and intimidating consumer good into a right or social security⁽⁷⁾. Measured satisfaction reflects not only the quality of clinical care but also the psychological security provided by the system's funding model. This is an important perspective for policymakers, whose goal is not only to fund services but also to provide financial peace of mind. In various journals, healthcare services adapt to local cultures and use customer satisfaction indices as benchmarks⁽⁸⁾.

The funding system significantly influences satisfaction, both for providers and recipients of healthcare services, particularly in Indonesia, which has begun implementing national healthcare funding⁽⁹⁾⁽¹⁰⁾. Various healthcare funding systems are used by governments worldwide, depending on local conditions and regulations⁽⁸⁾. A systematic review in the United States demonstrated that the bundled payment system, which is actually based on the previously applicable fee-for-service system, resulted in high satisfaction, with reduced funding and treatment episodes and comparable clinical outcomes. It was also shown that bundled payment was not associated with decreased service quality, with indicators such as emergency incidents, mortality, and readmission rates⁽¹¹⁾.

Given the diverse range of research and research outputs from various articles, it is interesting to identify patterns/trends that frequently emerge across publication sites. Bibliometric reviews on remuneration systems, funding, healthcare, satisfaction, coverage, and other topics rarely address such a situation in Indonesia. Keywords like BPJS (Social Security Agency) and INA-CBGs (Indonesian Case Base Groups) are still difficult to find on journal sites worldwide. This bibliometric review, therefore, aims to provide a comprehensive overview of global research trends and the relationship between healthcare, satisfaction, and funding.

This research aims to answer the following problems:

RQ.1. Analyzing research trends related to healthcare worker satisfaction, performance, and healthcare funding based on bibliometric studies.

RQ.2. Identifying patterns of relationships between these factors to provide data-based recommendations for healthcare policy development.

RQ.3. Examining the implications of this research for improving healthcare workers' well-being and the effectiveness of the healthcare funding system.

Hence, with a systematic bibliometric approach, the study contributes to understanding the interplay between health worker satisfaction, performance, and funding.

2. LITERATURE REVIEW

In the performance of complex health systems, three key pillars (the Triple Aim) are identified as interdependent frameworks: patient satisfaction, health financing and economics, and health outcomes. Bibliometric analysis of various research papers shows that the global research community is intensively examining these three pillars, citing their central role in determining the effectiveness and sustainability of health services. Firstly, patient satisfaction has evolved from being a mere add-on to a core component of service quality. Patient satisfaction is now recognized as a critical determinant of the financial health of a health care organization⁽¹²⁾. This reflects a paradigm shift in which patient perceptions and experiences are central to managerial strategy⁽¹³⁾.

Secondly, health financing and economics form the operational backbone of any health system. Its primary goal is to effectively use public resources to achieve healthy, productive, and quality lives for people. In an environment characterized by resource scarcity, the discipline of health economics provides an indispensable analytical tool to guide allocation decisions, ensuring that every dollar invested delivers maximum value to patients and society at large⁽¹⁴⁾. Lastly, health outcomes are the ultimate goal of any healthcare intervention and system. Measured through various indicators, such as life expectancy, hospital readmission rates, and health-related quality of life (HRQoL), health outcomes provide the most fundamental measure of a system's success in carrying out its primary mission, i.e., improving and maintaining population health⁽¹⁴⁾.

Furthermore, patient satisfaction is a patient's affective and cognitive reactions to various aspects of their healthcare experience. It measures the extent to which their expectations and needs are met during interactions with the healthcare system. Satisfaction is also a relative and subjective concept, heavily influenced by an individual's perceptions, expectations, and prior experiences⁽¹²⁾.

Consistently, bibliometric analyses highlight several factors as critical determinants of patient satisfaction. Among the most important are the quality of medical care itself, the effectiveness of patient communication, and patient demographics such as age. Other process factors that frequently emerge as significant determinants include short waiting times, staff attitudes and empathy, and the extent to which patients are involved in decisions regarding their care⁽¹²⁾. Bibliometric studies reveal that patient satisfaction is a dynamic and rapidly growing area of research. There is increasing scientific focus, with most publications appearing in the last decade, indicating that it is a progressively relevant issue in contemporary healthcare management⁽¹²⁾.

In the results shown, the United States is the largest producer and leading research collaboration partner, leading in both absolute publication volume and total citations. The United Kingdom ranks a strong second⁽¹³⁾. Canada,

despite its lower publication volume, leads in the average number of citations per article, indicating that Canadian research has a very high scientific impact and is significantly influential in this field⁽¹³⁾.

UK institutions also demonstrate strong dominance. The University of Manchester and the London School of Hygiene and Tropical Medicine are highly productive and influential, leading the way in terms of both the number of articles published and the total number of citations received⁽¹³⁾. Consistent with this institutional dominance, the most prolific authors, such as P. Bower and M. Roland, are from the UK, further strengthening the country's position as a leader in patient satisfaction research. High-impact research on patient satisfaction is frequently published in leading journals, such as *Social Science and Medicine*, *BMC Health Services Research*, and *Health Policy*. The majority of these core journals are based in the UK, reflecting the country's research focus⁽¹³⁾.

One of the most profound findings from the longitudinal bibliometric analysis is the evolution of research themes. Keyword analysis from 2000 to 2010 revealed a predominance of clinical and functional themes, such as "human" and "outcomes." However, in 2011–2020, a seismic shift occurred, in which the keyword "perception" transitioned from a peripheral theme to a central, foundational one. This shift signified a fundamental shift in how the research community defines and measures quality, from focusing on objective clinical outcomes to a strong recognition of the importance of subjective patient experiences and opinions⁽¹³⁾.

3. MATERIAL AND METHOD

This study employed a bibliometric approach to analyzing publication trends related to the relationship between healthcare worker satisfaction, performance, and healthcare funding. This method allows for numerical/statistical data-based assessments of the number of publications, citation frequency, publication trends, and patterns of interrelationships between the topics studied. The data sources for this study were obtained from the Scopus database, using three main keywords: "healthcare," "funding," and "satisfaction" from 2015 to 2024. The search process was conducted with certain limitations, such as publication year, document type, and scientific field, to ensure the relevance of the collected data.

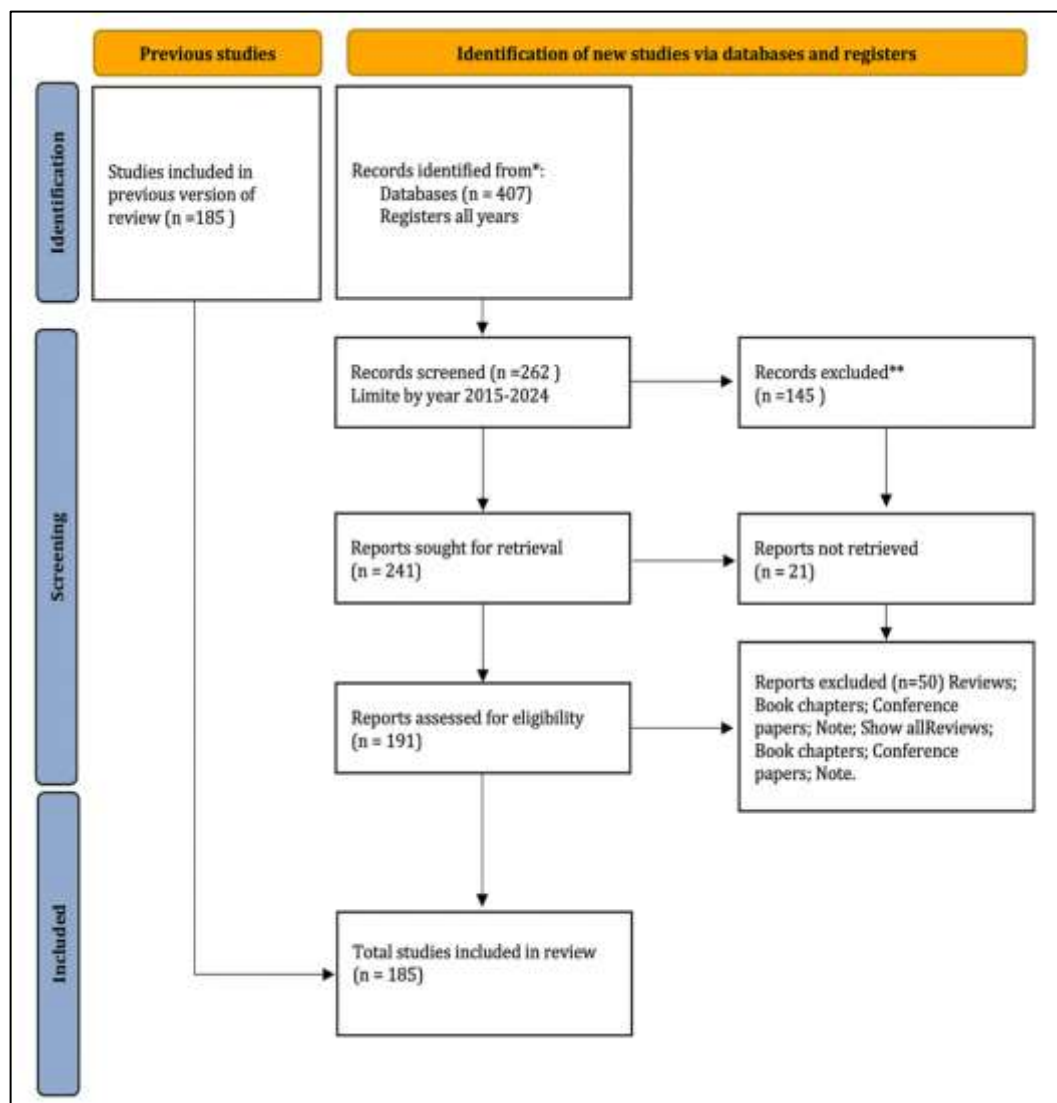


Figure 1. Stages in data collection (Source: Adoption from (15))

Figure 1 schematically illustrates the article collection process, primarily providing guidance for reporting systematic reviews (the PRISMA 2020 statement). Using the inclusion and exclusion criteria, the final result was 185 articles that met the research methodology.

3.1. Inclusion and Exclusion Criteria

Table 1. Inclusion and Exclusion Criteria

Inclusion	Exclusion
1. Publication Time Range: Only publications within a specified time range were retained. Of the initial 407 records, after filtering by year, only 262 were retained.	1. Publication Outside the Specified Timeframe: Articles falling outside the established annual limits were eliminated (The initial 145 entries did not meet this criterion).
2. Subject Segment: Articles relevant to medicine, nursing, health professions, business, management, and accounting were retained.	2. Irrelevant Topics: Articles that did not fall within the primary subject categories (e.g., fields unrelated to health or health management) were excluded. In this step, 50 entries were removed from the dataset.
3. Document Type: Only documents in the form of scientific articles were included.	3. Inappropriate Document Types: Editorials, letters to the editor, conference abstracts without full text, and reports that did not meet academic standards were excluded.
4. Language Considerations: Only articles meeting the requirements, namely in English, were used.	4. Articles not available in English were excluded from the analysis.

3.2. Analysis Techniques

Bibliometric analysis in this study was conducted utilizing the VOSviewer application with several analysis units, including Network Visualization, which was used to visualize relationships between frequently cited keywords. Furthermore, Overlay Visualization provides a temporal perspective on research trends by showing changes over time. Finally, Density Visualization visualizes data density based on the frequency of occurrence of a keyword, thus enabling the identification of dominant keywords and research gaps.

4. RESULTS

4.1. Annual Scientific Publication Trends (2015-2024)

Figure 2 depicts the annual trend reflecting fluctuations in the number of publications between 2015 and 2024.

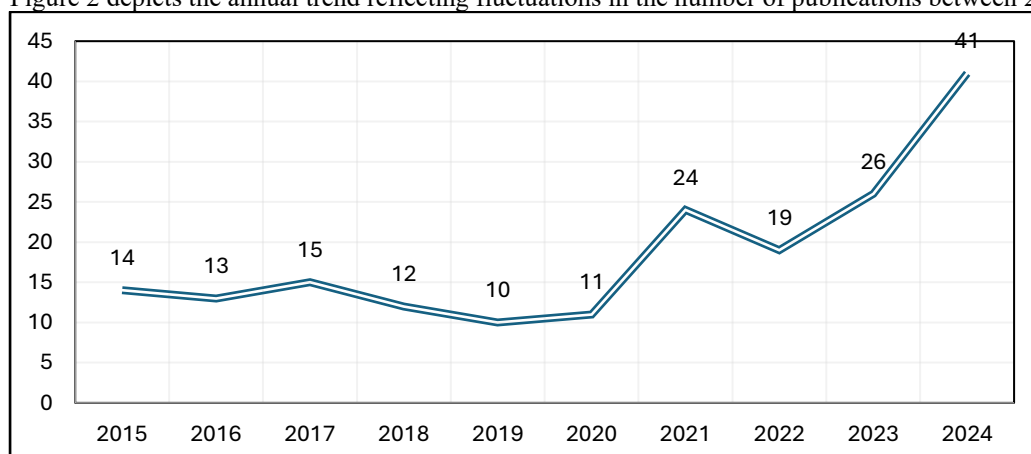


Figure 2. Document frequency in years (source: Scopus)

Global research trends from 2015 to 2024 reveal significant insights into satisfaction and healthcare funding mechanisms. Research shows that the greater the public healthcare coverage, the higher the level of public satisfaction⁽¹⁶⁾. This is evident in several countries. In Qatar, for example, satisfaction with the healthcare system increased between 2012 and 2014, particularly in terms of service provision and management. However, certain groups, such as men and workers, still expressed dissatisfaction⁽¹⁷⁾. Meanwhile, in China, public satisfaction increased significantly from 2006 to 2019, influenced by improvements in financial protection and perceived quality of healthcare services⁽¹⁸⁾.

Satisfaction with healthcare services is strongly influenced by various factors, such as personal experience of receiving care, age, gender, and income level⁽¹⁹⁾. Publicly funded healthcare systems tend to achieve higher satisfaction levels, although they can also widen the gap in satisfaction between high- and low-income groups. In the UK, general practices receiving greater funding positively impacted patient satisfaction, particularly in terms of access to care and the professionalism of providers⁽²⁰⁾. Similarly, in Spain, increased public investment in the healthcare sector was shown to improve patient satisfaction, with women responding more sensitively to these improvements than men⁽²¹⁾.

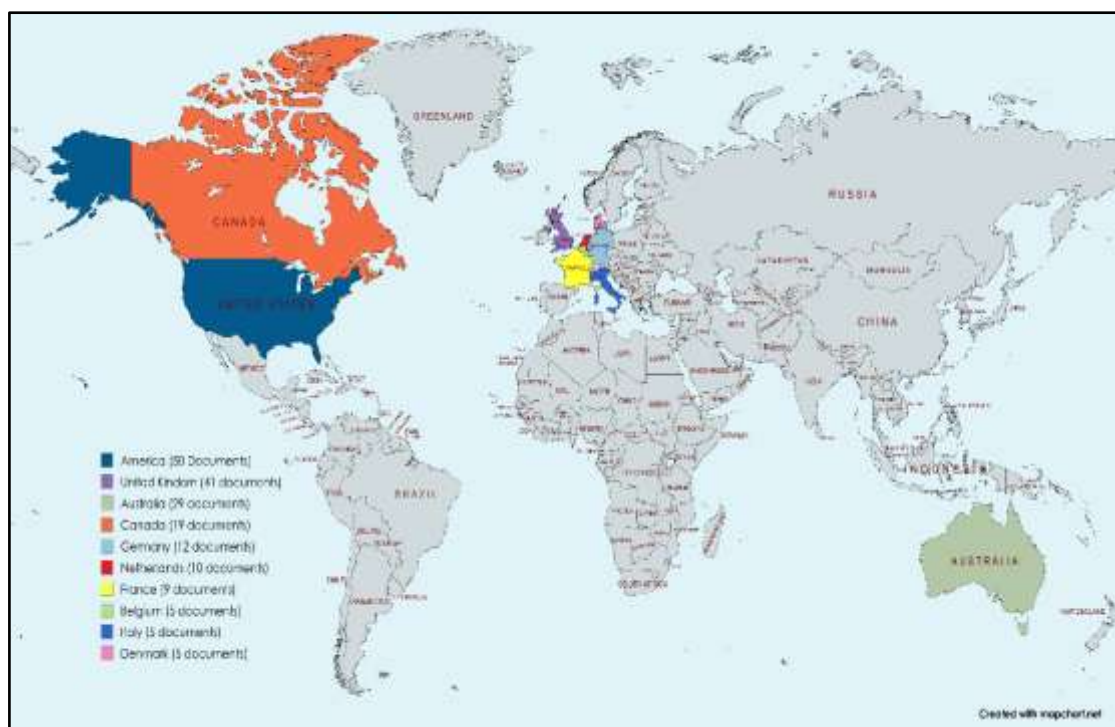
Several innovative funding models have been introduced to address the challenges of healthcare funding. One of these is the P4 treatment approach, which is predictive, preventive, personalized, and participatory⁽²²⁾. This model aims to shift the focus from disease treatment to health promotion, supported by interconnected health technologies. Furthermore, social health insurance (SHI) is considered more efficient, equitable, and sustainable than direct spending mechanisms or private insurance⁽²³⁾.

The issue of centralization and decentralization of health financing is also a significant concern in global research⁽²⁴⁾. In Russia, decentralization policies initially increased regional disparities in health care financing. Although recentralization efforts initially reduced these disparities, recent trends indicate that disparities are starting to increase again.

Overall, global research trends indicate that satisfaction with healthcare services is not solely determined by the quality of medical care but is also strongly influenced by how the system is funded, user experience, and public policy commitment to long-term investment. A comprehensive and innovative approach to healthcare financing and policy is essential to building equitable, resilient, and community-focused healthcare systems.

4.2. Top Ten Countries Publishing Articles on Healthcare Service Satisfaction and Funding Mechanisms

Figure 3. Publication trends on healthcare service satisfaction and funding mechanisms



The top ten countries worldwide publishing articles matching these keywords are illustrated in Figure 3. The United States ranks first with 50 articles. In the United States, satisfaction with the healthcare system is measured through the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS), a national survey published since 2008 and contributing to payment incentives through the Hospital Value-Based Purchasing program. Key factors contributing to satisfaction include the quality of medical staff communication, facility cleanliness, staff responsiveness, and patient discharge arrangements. In terms of funding mechanisms, Medicare and Medicaid are the backbone of public financing. Medicare accounts for approximately 37% of all healthcare spending in the US and over 60% of all hospital care. Both play a crucial role in funding hospitals and ensuring the provision of healthcare services⁽²⁵⁾. Medicare/Medicaid has adopted value-based plans (APMs), prioritizing outcomes and efficiency over service volume. This model strengthens the partnership between hospitals and insurance companies, optimizing patient care coordination.

The United Kingdom operates its public healthcare system through the National Health Service (NHS), widely recognized as a universal, publicly funded healthcare system⁽²⁶⁾. Patient satisfaction with the NHS is generally

considered quite good, but financial pressures, increasing demand, and limited service capacity are beginning to impact public perception⁽²⁶⁾. The main challenge is maintaining service quality amidst budget constraints.

Australia exhibits consistently strong health system performance across a range of indicators, often outperforming Canada. Key strengths include a more coordinated federal government role⁽²⁷⁾ and a national pharmacy scheme that makes access to essential medicines more affordable⁽²⁸⁾. Patient satisfaction rates in Australia are high, largely due to relatively easy and widespread access to health services⁽²⁹⁾. Canada's health system, on the other hand, offers comprehensive coverage and strong public funding, making it relatively cheaper and more equitable than that of the United States. However, waiting times for non-emergency services remain a major complaint, particularly for elective procedures and specialist consultations. Patient satisfaction levels in Canada tend to be comparable to those in the US, although there is variation between regions and between studies⁽²⁷⁾. Experts suggest that strengthening the role of the federal government and implementing a national pharmacy scheme, such as in Australia, would improve efficiency and the overall patient experience.

Furthermore, several European countries exhibit diverse approaches to healthcare delivery, with varying levels of patient satisfaction. In Germany, patient satisfaction is systematically measured using the Inpatient Satisfaction Scale, which assesses four main aspects: physician care, nursing care, service facilities, and secondary care facilities⁽³⁰⁾. Despite this instrument's high reliability, satisfaction with primary healthcare in Germany is relatively low compared to other countries, influenced by factors such as patient age, visits to specialists, and access to a general practitioner.

In contrast, the Netherlands stands out as a country with very high levels of public trust and satisfaction with its healthcare system. The public is satisfied with the quality of care, access to doctors, and the professionalism of medical personnel⁽³¹⁾. Denmark shows a similar pattern to the Netherlands, with high public trust and strong satisfaction with the effectiveness and reliability of its healthcare system⁽³¹⁾.

Italy also recorded good satisfaction levels, particularly in primary health care⁽³²⁾. Unlike Germany, Italy demonstrated a positive relationship between service structure and patient satisfaction, particularly through the presence of adequate general practitioners and effective care management. Meanwhile, France and Belgium, although not detailed, are known to have systems based on social solidarity with extensive coverage and strong public funding, which contribute to user satisfaction.

Table 2. Number of Articles per Publisher (source: Scopus)

No	Publisher	Number of Articles
1	eClinicalMedicine	10
2	BMJ Open	9
3	BMJ Health Services	8
4	International Journal of Environment Research and Public Health	3
5	BMC Musculoskeletal Disorders	3
6	Human Reproduction	3
7	Healthcare Management Forum	2
8	Advances in Therapy	2
9	The Lancet Regional Health – Western Pacific	2
10	Lancet Psychiatry	2

A bibliometric analysis of the top ten journals publishing articles on healthcare satisfaction and mechanisms reveals a concentration of publications in journals focused on evidence-based healthcare, policy evaluation, and patient experiences within the healthcare system. Scopus data shows that eClinicalMedicine is the most productive publisher with 10 articles, followed by BMJ Open (9 articles) and BMJ Health Services (8 articles). These three journals are widely recognized for their interdisciplinary reach and support the research publication assessing the effectiveness of healthcare services and patient perceptions of the healthcare system.

Other journals such as IJERPH, Healthcare Management Forum, and Lancet Regional Health – Western Pacific also make significant contributions, particularly in highlighting the context of healthcare services in various countries and how funding systems and service accessibility influence patient satisfaction. This demonstrates that studies related to satisfaction are not limited to patient-clinician interactions but also involve comprehensive structural and policy analysis of healthcare services.

Several specialized journals, such as BMC Musculoskeletal Disorders, Human Reproduction, and Lancet Psychiatry, contribute articles relevant to specific clinical service contexts, yet still address aspects of user satisfaction and service effectiveness from a patient perspective. This reflects the cross-cutting nature of issues of

satisfaction and healthcare mechanisms and can arise across various medical and healthcare management disciplines.

4.3. Visualization of Concept Maps and Keyword Relationships in Healthcare, Funding, and Satisfaction Studies (2015–2024)

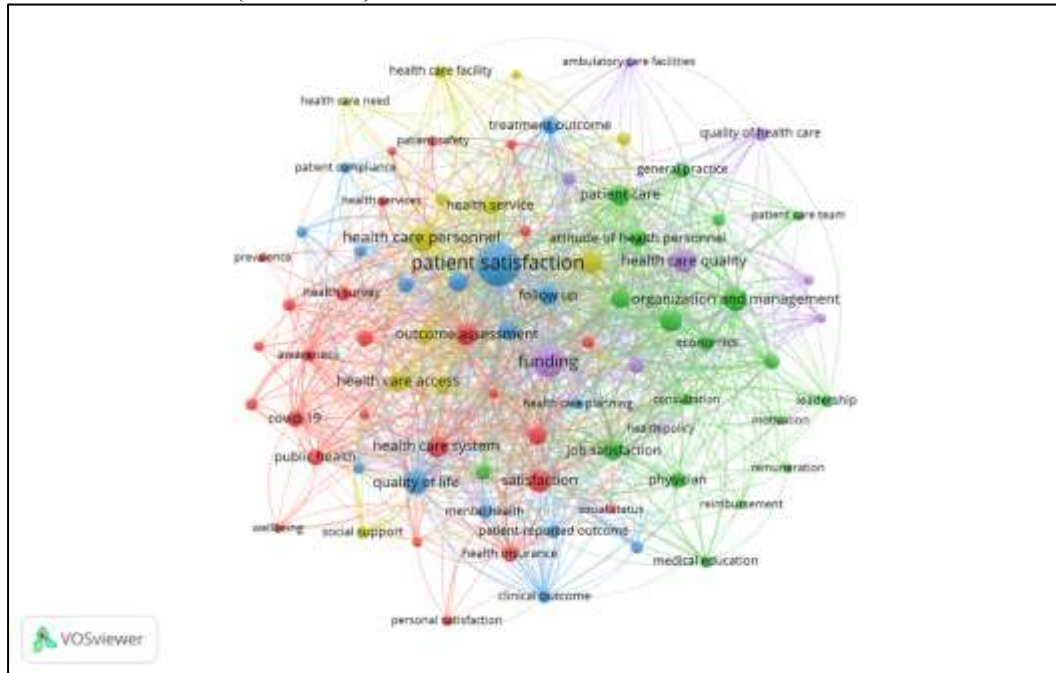


Figure 4. Trends in publication of concept maps of healthcare, funding, and satisfaction studies from 2015 to 2024.

The VOSviewer output of the concepts studied in published articles is visualized (Figure 4). The bibliometric visualization depicts a concept map of published studies on satisfaction, healthcare services, and healthcare funding from 2015 to 2024. This visualization was generated using the VOSviewer tool with keyword-based co-occurrence analysis, which provides an overview of the concept map of published research in Scopus. The concept of patient satisfaction is frequently studied in the obtained publications, which is related to many other concepts, such as the concept of human, healthcare quality, primary healthcare, healthcare personnel, and many other concepts depicted by the results of this bibliometric visualization. The following is an explanation of the co-occurrence visualization.

Table 3. Keyword Cluster Mapping

Cluster	Keyword	Occurrences	Total Strength	Link
Blue (Cluster I)	patient satisfaction	96	1737	
	health care personnel	38	781	
	follow up	19	409	
	quality of life	29	565	
	health care system	21	413	
	health care access	21	403	
Red (Cluster II)	public health	14	218	
	COVID-19	14	268	
	awareness	8	174	
	health insurance	13	277	
	social support	10	181	
	wellbeing	5	93	
Green (Cluster III)	funding	47	881	
	economics	13	242	
	organization and management	29	520	
	job satisfaction	19	361	
	leadership	8	141	

	remuneration	5	91
Yellow (Cluster IV)	treatment outcome	16	314
	patient care	22	485
	clinical outcome	10	213
	physician	14	239
	general practice	12	213
Purple (Cluster V)	health care quality	29	536
	primary health care	27	529
	quality of health care	11	196
	health care planning	7	157
	general practitioner	8	196

4.4. Temporal Visualization of Keywords in Publications on Patient Satisfaction, Healthcare Worker Performance, and Healthcare Funding (2015–2024)

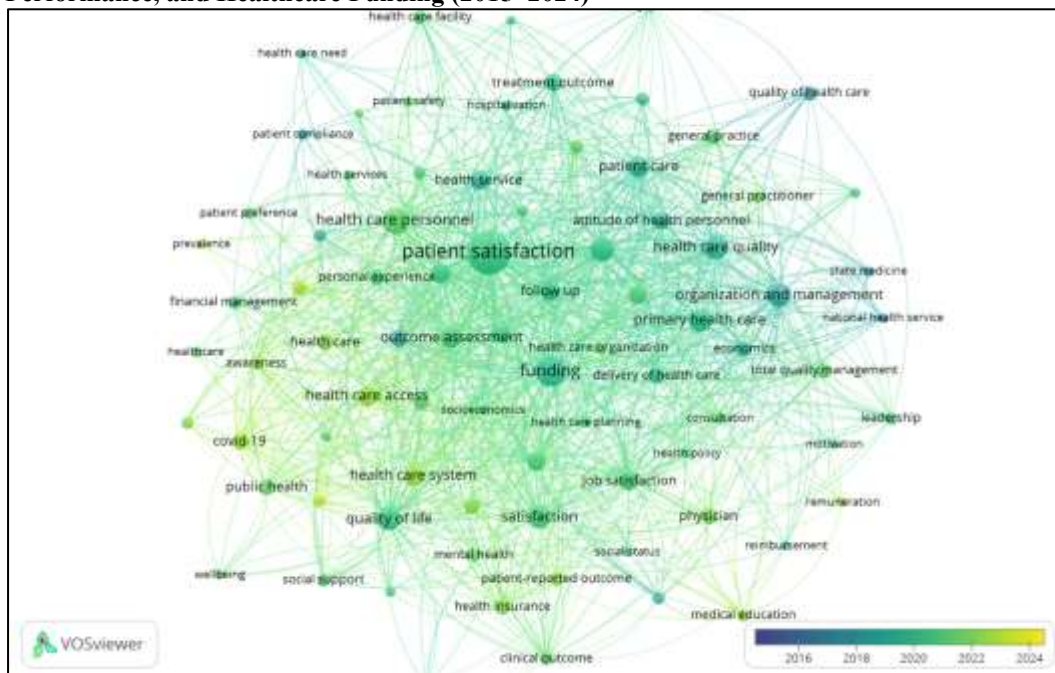


Figure 5. Publication trends of studies on satisfaction, health worker performance, and health service funding (2015–2024) (source: Scopus)

Figure 5 displays a bibliometric visualization depicting the publication trends of studies related to satisfaction, health services, and health service funding from 2015 to 2024. This visualization was generated using the VOSviewer tool with keyword-based co-occurrence analysis, which provides a comprehensive overview of the development of research focus over time.

Trend-wise, dark blue indicates publications dominated by publications from 2015–2017, where research topics focused more on fundamental issues, such as patient satisfaction, primary healthcare, and healthcare personnel. The primary focus of research during this period was how patient satisfaction is influenced by the quality of healthcare services and the direct role of healthcare workers in primary care settings. MyHill et al., who studied the use of supplemental educational materials for acne patients receiving specific therapies, examined patient satisfaction⁽³³⁾.

Research on managerial (organization and management, healthcare quality) came in second, as did Payne et al., who studied integrated palliative care services in the United Kingdom⁽³⁴⁾. The concept of funding (healthcare cost, funding, and health service), along with the theme of quality and health services, were themes that rarely appeared during this period, as did Brooke et al., who studied the National Health Service in the United Kingdom⁽³⁵⁾.

Entering the 2018–2021 period, marked by the green color, there was a shift in topics towards more complex issues, such as healthcare worker job satisfaction, organization and management, and healthcare service quality. This period showed a deeper focus on internal organizational factors and managerial relationships that influence the performance and job satisfaction of healthcare workers. Research looked not only at service outputs but also at the process of managing healthcare workers within the health system. Research on funding discussed funding with patient satisfaction, cost-effectiveness analysis, healthcare systems, job satisfaction, healthcare personnel, healthcare policy, and others. Bhamra et al. studied the impact of the Corona Virus 19 pandemic on professional

life and professional practice⁽³⁶⁾, while Soffe et al. investigated the development and implementation of patient funding⁽³⁷⁾.

In 2022–2024, as indicated by the dominant color yellow, there is a tendency for increased studies on policy and financial aspects, such as financial management, healthcare policy, and government (the role of government). In addition, topics such as therapy and healthcare access have emerged as new concerns, indicating an integration between funding, public policy, and healthcare worker performance in influencing overall patient satisfaction. The themes of funding, healthcare quality, cost-effectiveness analysis, healthcare costs, healthcare policy, perception, and job satisfaction are present in several studies. While Hussain et al. examined healthcare satisfaction in Qatar⁽³⁸⁾, Young et al. studied the practice of specialist medical teams concerning perception⁽³⁹⁾.

Therefore, these findings confirm the publication trend over the past decade, indicating a shift from a clinical approach focused on the direct relationship between healthcare workers and patients to a systemic approach that considers organizational management, funding policies, and government involvement. These findings denote the need to strengthen healthcare human resource management integration with sustainable funding policies to improve healthcare worker performance and satisfaction in the future.

4.5. Topic Density Visualization: Satisfaction, Healthcare Services, and Funding (2015–2024)

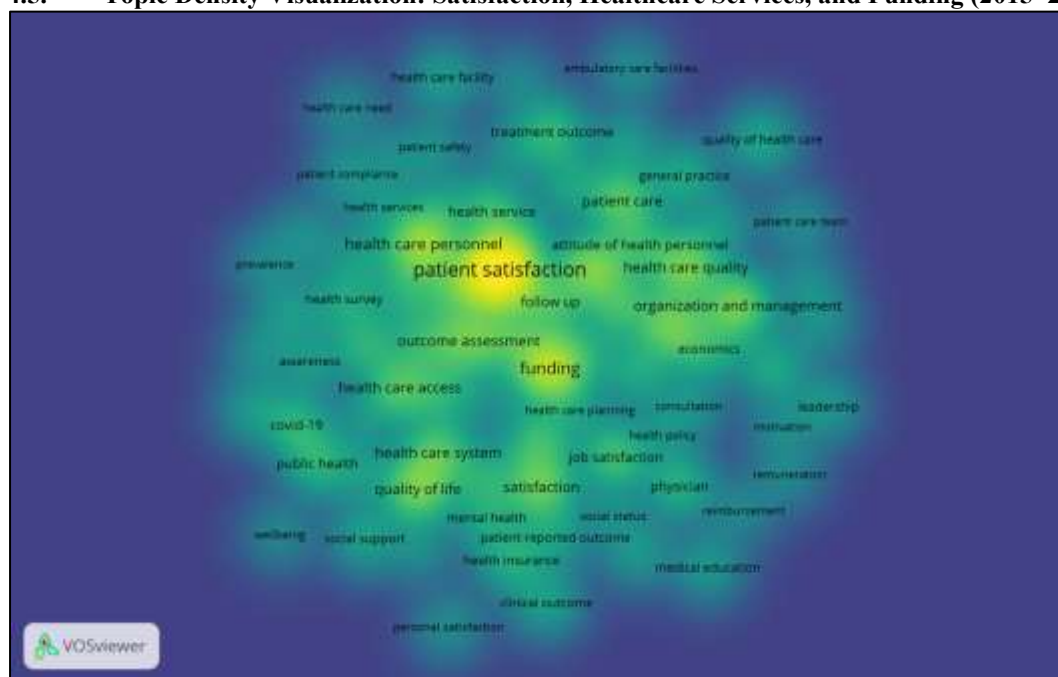


Figure 6. Visualization of the publication density of studies on satisfaction, health services, and funding

Figure 6 is a visualization of the density of published research according to keywords from 2015 to 2024. The density of research publications discussing the themes of human, healthcare quality, and patient satisfaction is colored yellow, meaning they are widely researched. In comparison, themes regarding government, healthcare organizations, healthcare facilities, therapy, and others, which occupy the peripheral areas of visualization, are still relatively rarely researched. This provides information on the opportunity for research publication on these themes.

5. DISCUSSION

This section discusses and interprets bibliometric findings based on the established research questions. Using a network and temporal visualization approach, the discussion is directed toward understanding the direction of research development, patterns of interrelationships between key themes, and conceptual and practical implications for the healthcare system.

5.1. Research trends related to healthcare worker satisfaction, performance, and healthcare funding over the past decade (2015–2024)

Based on Figure 2, the trend of scientific publications on satisfaction with healthcare services, healthcare worker performance, and funding mechanisms shows fluctuating growth but a significant increase at the end of the decade. One explanation for this trend is the increasing need for a sustainable and equitable financing system. Martinussen and Rydland (2022) emphasize that high public service coverage is positively correlated with levels of public satisfaction. This is evident across various countries. In Qatar, satisfaction increased along with improvements in service management aspects, although inequalities were still felt by workers and men⁽¹⁷⁾. In

comparison, in China, increased satisfaction was associated with financial protection and perceptions of service quality⁽¹⁸⁾.

Other determinants, such as age, income, and patient experience, also shape satisfaction variables⁽¹⁹⁾. Countries with strong public funding systems tend to produce higher satisfaction, although disparities between groups remain challenging. For instance, in the UK, more heavily funded general practice has been shown to be positively associated with access and professionalism of services⁽²⁰⁾, whereas in Spain, increased public investment has had a significant impact, particularly for women⁽²¹⁾.

In the context of research funding, Health Policy and Systems Research (HPSR) remains under-recognized, with only about 2% of total global funding covering this component. Nevertheless, evidence-based policy interventions are crucial for addressing crises like the pandemic. Some countries, such as Canada through the CIHR, have made progress by supporting research on equity and infectious diseases⁽⁴⁰⁾, but European Union policies, such as the Horizon Scheme, have actually cut health research funding⁽⁴¹⁾. Meanwhile, Iran faces structural issues such as financial instability that threaten the sustainability of its health reforms⁽⁴²⁾.

Responses to these challenges have given rise to innovative funding model approaches, such as P4 Medicine (Predictive, Preventive, Personalized, Participatory)⁽²²⁾ and the Social Health Insurance (SHI) system, which are considered fairer and more efficient⁽²³⁾. The issue of centralization is also a concern. In Russia, decentralization initially exacerbated regional disparities in financing, while recentralization did not sufficiently stabilize disparities⁽²⁴⁾.

In terms of contributing countries, the United States dominates global publications in this area, primarily through systemic measures such as HCAHPS and Medicare and Medicaid financing schemes that are oriented towards value and efficiency⁽²⁵⁾. This is followed by the United Kingdom with its universal NHS system, Australia and Canada with their federal approach and national pharmacy systems, and European countries, such as Germany, the Netherlands, and Denmark, which offer unique decentralized approaches with varying levels of patient satisfaction⁽²⁶⁾⁽²⁷⁾⁽³⁰⁾⁽³¹⁾. These countries are an important base for publications because the complexity of their health systems allows for multidimensional exploration in research.

Meanwhile, in terms of journals or publication sources, this research trend is spread across various international journals focusing on public health, primary healthcare, and health policy and systems management. According to Table 2, journals such as *eClinicalMedicine*, *BMJ Open*, and *BMJ Health Services Research* are the primary publication channels for this topic, demonstrating the scientific consistency and relevance to the global research agenda.

Thematically, the literature shows that satisfaction with healthcare services is closely linked to the extent of public funding, trust in service institutions, and bureaucratic efficiency. For example, in Qatar and China, satisfaction increased with improvements in the provision and financial protection systems⁽³⁸⁾⁽⁴³⁾. In the UK and Spain, the extent of public funding contributed to positive patient perceptions, with different sensitivities between men and women⁽²⁰⁾⁽²¹⁾. Research also reveals that aspects of user experience, such as age, gender, and socioeconomic status, remain strong predictors of service satisfaction⁽⁴⁴⁾.

In the realm of funding, trends display minimal allocation for Health Policy and Systems Research (HPSR) globally, only about 2% of total funding⁽⁴⁵⁾, even though this approach is crucial in designing evidence-based interventions. Initiatives such as P4 treatment and social insurance schemes (SHI) are beginning to emerge as more sustainable and equitable funding models⁽²²⁾⁽²³⁾. However, challenges remain, such as inequalities due to decentralization in Russia⁽²⁴⁾ and bureaucratic instability in the case of Iran⁽⁴²⁾.

5.2. The pattern of relationships between satisfaction, health worker performance, and funding mechanisms in a global literature review

The conceptual network visualization (Figure 4) and density (Figure 6) exhibit that patient satisfaction, healthcare quality, and human resources are the main nodes that are closely interconnected. This relationship indicates that service quality is inseparable from the conditions of healthcare workers and how the system supports them. Equity theory explains that the imbalance between input (e.g., hard work) and output (e.g., delays in BPJS claims) can reduce motivation and job satisfaction. In Indonesia, the phenomenon of late payments by BPJS has created a perception of injustice that impacts work morale⁽⁴⁶⁾.

The relevance of the Theory of Hope is evident in expectations regarding the remuneration system. If expectations are unmet, morale and institutional loyalty will decline⁽⁴⁷⁾. Meanwhile, the Theory of Planned Behavior explains that attitudes, subjective norms, and perceptions of control influence work intentions. In a rigid administrative system, health workers' intentions to maintain service quality are hampered⁽⁴⁸⁾.

5.3. The implications of the results of this study for improving the welfare of health workers and the effectiveness of the health service funding system

The findings show that themes such as government, therapy, and healthcare facilities are still relatively under-researched (located in the peripheral areas of the density visualization), thus indicating an important research gap that needs to be filled, especially in the context of developing countries like Indonesia.

The well-being of healthcare workers is determined not only by financial aspects but also by systemic support, such as clear policies, access to fair incentives, and transparent organizational management. Financing system reforms such as performance-based remuneration, strengthening efficient claims systems, and government involvement in quality assurance are implicit recommendations from this latest research trend.

These findings also underscore the importance of integrating health human resource management, fiscal policy, and national financing systems, such as JKN and INA-CBGs, which are rarely discussed in international literature.

6. CONCLUSION

This study, employing a bibliometric approach, has successfully provided important insights into the dynamics and direction of global research developments in the areas of healthcare service satisfaction, funding mechanisms, and healthcare worker performance from 2015 to 2024. Analysis of 185 scientific articles shows that research on this topic has undergone significant thematic evolution and is divided into three main phases. In the early phase (2015–2017), the primary focus was on the quality of direct patient care. In the middle phase (2018–2021), the focus shifted to managerial and organizational aspects, highlighting the importance of working conditions and healthcare worker satisfaction in supporting service quality. Meanwhile, in the most recent phase (2022–2024), research trends are dominated by policy and financial issues, shifting research approaches toward a more structured, public policy-based health system and long-term financing. Furthermore, publications are dominated by developed countries like the United States and the United Kingdom, while developing countries like Indonesia remain limited.

Moreover, temporal visualization and keyword networks utilizing VOSviewer reinforce the findings, demonstrating a close relationship between patient satisfaction, healthcare quality, and human resources as dominant nodes in the research map. Meanwhile, the density visualization indicates that topics such as government, therapy, and healthcare facilities remain relatively under-researched (located in peripheral areas), highlighting an important research gap to be filled in the future, particularly in the context of developing countries. Further, the results of this study demonstrate that satisfaction with healthcare services is closely related to the scope of public services and how these systems are funded. Countries such as Qatar, China, the United Kingdom, and Spain demonstrate that public investment significantly improves public satisfaction, although the challenge of inequality across social groups remains. Factors such as age, gender, income, and patients' personal experiences significantly influence perceptions of services. On the other hand, issues such as Health Policy and Systems Research (HPSR) have received relatively little funding attention globally, despite their proven importance, particularly in responding to crises like the COVID-19 pandemic. Also, innovative financing models, such as the P4 Medicine approach and Social Health Insurance (SHI), are emerging as more equitable and sustainable alternative solutions. Globally, a comprehensive and innovative approach to financing and policy is key to building resilient, equitable, and community-focused healthcare systems.

Overall, this study demonstrates that the quality of healthcare services is not solely determined by patient-provider interactions but is also significantly influenced by policy effectiveness, funding efficiency, and supportive management systems. Hence, the findings have broad theoretical and practical implications, including the need for integration between health human resource management, fiscal policy, and financing mechanisms, such as the National Health Insurance (JKN) and the INA-CBGs (Indonesian Case Base Groups). Further research is required to explore financing models and policies that are equitable, adaptive, and locally relevant to support a resilient, inclusive, and sustainable healthcare system.

Limitation

This study has several limitations. First, geographical representation is still skewed since the literature analyzed mostly originates from developed countries, so the local context of developing countries is not optimally accommodated. Second, themes directly related to the financing system in Indonesia, such as BPJS and INA-CBGs, rarely appear in international publications. Third, the scope of the analysis is limited to the Scopus database. Furthermore, the bibliometric method used is primarily descriptive, thus unable to explain the causal relationships between the studied variables in depth.

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