Research Trends and Hotspots of Internet Hospitals: A Bibliometric Study

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Abstract

To analyze the development trajectory and frontier trends of Internet hospitals globally through bibliometric analysis. Methods Relevant literature from the China National Knowledge Infrastructure (CNKI) and Web of Science Core Collection databases (up to March 2025) was retrieved. CiteSpace and Tableau were employed for visualizing author-institution collaboration networks, keyword co-occurrence clustering, and burst detection. Results A total of 649 articles were included. Domestic research was led by core authors such as Guangjun Yu and Yongkang Wu, with institutions like Huazhong University of Science and Technology as key contributors. Overall, the literature centers on platform construction, operational management, user service optimization, and regulatory mechanisms. The evolution of research themes demonstrates a progression from construction pathways to service models, quality optimization and intelligent transformation. Conclusion Internet hospitals are transitioning from the exploratory phase to a stage of systematic and intelligent development. Advancing their high-quality development will require integrated efforts in theoretical construction, methodological innovation and institutional system design.

Keywords

Internet hospital, Bibliometrics, Visual analysis, Research hotspots, Research status.

1. Introduction

Internet hospitals are integrated medical service platforms. They rely on network information technologies to deliver online consultation, prescription, payment, and drug delivery [1]. According to the 54th Statistical Report on China's Internet Development by the China Internet Network Information Center (CNNIC), as of February 2024, 30 provinces had established provincial-level internet healthcare supervision platforms. More than 2,700 internet hospitals had been officially approved nationwide. This marked a 58.80% increase compared with 2021.

At the same time, digital technologies such as artificial intelligence and cloud computing are rapidly entering the healthcare sector. In China, more than 30 generative Artificial Intelligence (AI) large models tailored for healthcare have been released. They serve pharmaceutical companies, doctors, and patients. Their applications extend to drug research and development, intelligent diagnosis and treatment, medical research, and health management [2].

Several scholars have reviewed the development of internet hospitals. However, research hotspots and frontiers are changing. This shift is driven by evolving policy environments and the growing use of digital technologies such as artificial intelligence.

Therefore, this study builds on existing research and applies bibliometric methods. We use tools such as CiteSpace to conduct a visual and objective analysis of literature on internet hospitals published between 2015 and 2025. The study summarizes the current research status and emerging frontiers of internet hospitals. It also provides references for further research and practical development in this field.

2. Materials and Methods

2.1. Data Sources and Search Strategy

This study used the China National Knowledge Infrastructure (CNKI) and the Web of Science Core Collection as data sources. In Chinese, the search terms were "互联网医院," and "互联网+医院." The document types included academic journals and dissertations. In English, the search terms were "Internet hospital," and "Internet + hospital." The document types included Article and Review Article, with the language restricted to English [3].

The search covered publications up to March 10, 2025. After screening (see Figure 1), 649 papers were included. Among them, 613 were Chinese (94.50%) and 36 were English (5.50%).

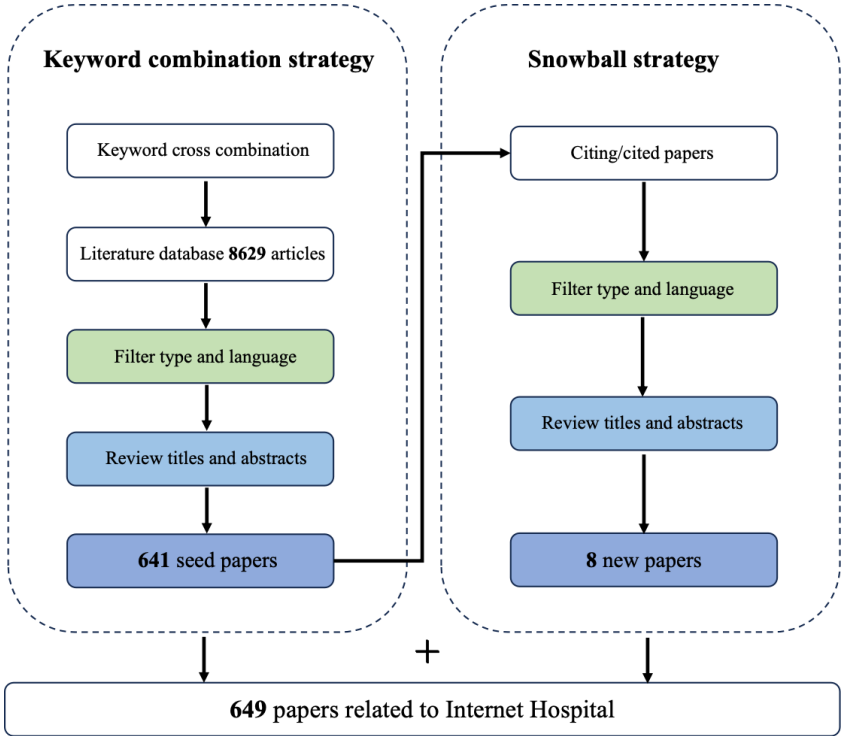

Figure 1: Literature screening flow chart

2.2. Research Methods

This study used Excel to generate statistical charts of publication years and source journals, showing the publication trends in the field of internet hospital research. Tableau 2024.3 was applied to visualize the spatial distribution of institutional affiliations. CiteSpace 6.3.R1 Basic was used for visual analyses of author and institutional collaboration, as well as keyword co-occurrence networks [4].

3. Results

3.1. Bibliometric Analysis

3.1.1. Analysis of Publication Date and Journal

Based on the retrieved literature, research on internet hospitals began in 2015. From 2015 to 2025, the annual number of publications generally showed an increasing trend. According to publication volume, internet hospital research in China can be divided into three stages. Exploratory Development Stage (2015-2019): The concept of internet hospitals emerged domestically. Early research was limited, but the number of publications steadily increased. Accelerated Development Stage (2020-2022): The COVID-19 outbreak at the end of 2019 acted as a catalyst for the development of internet hospitals. Publication volume surged, exceeding 130 papers in 2022. 2023-Present: Research on internet hospitals remains active. However, compared with the pandemic period, the annual publication volume shows a declining trend. The annual number of publications corresponds closely with the development of internet hospitals in China over different periods [5] (see Figure 2).

The analysis identified 196 journals that published research on internet hospitals. Journals with more than 20 publications include Chinese Digital Medicine, Chinese Hospitals, Modern Hospital and Journal of Medical Informatics (see Figure 3). Most journals belong to the medical and health science category (75.41%), followed by journals in economics and management sciences (10.65%) and other categories.

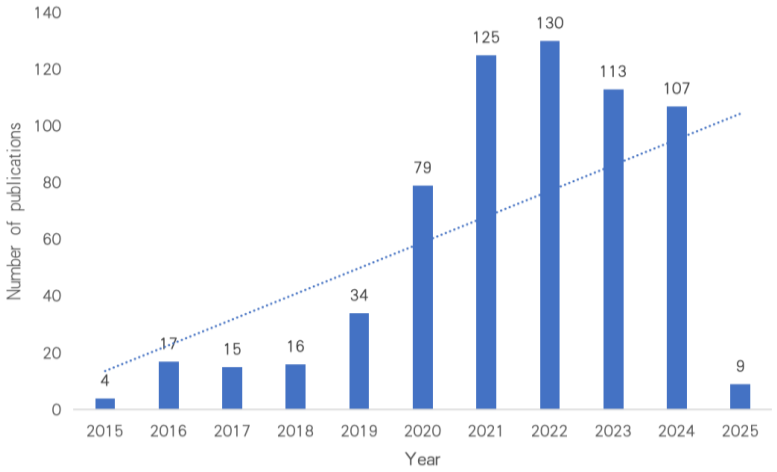

Figure 2: Annual publication volume of research papers

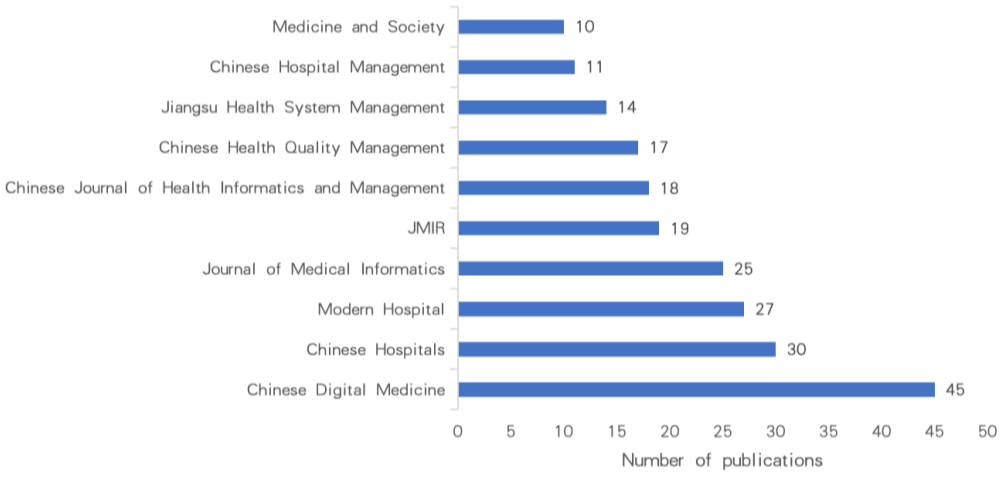

Figure 3: Top 10 journals in terms of publication volume

3.1.2. Analysis of Authors

Author analysis can identify leading researchers in the field of internet hospitals and the strength of collaboration among authors.

In the co-authorship network of Chinese publications (see Figure 4), there are 225 nodes and 202 edges, with a network density of 0.0080. The most prolific author is Guangjun Yu from the School of Public Health, Shanghai Jiao Tong University, with eight publications. His research on internet hospitals began in 2020 and focuses on drug delivery, cloud pharmacies [6], operational models [7], risk management, and value chain-based collaborative service systems [8]. Prominent collaborative teams include the Guangjun Yu team and the Yongkang Wu team [9], while other author groups show only limited collaboration.

In the co-authorship network of English publications (see Figure 5), there are 158 nodes and 351 edges, with a network density of 0.0283. Most authors published only one or two papers. No author stands out with a high publication volume, and the collaboration intensity among scholars is generally low.

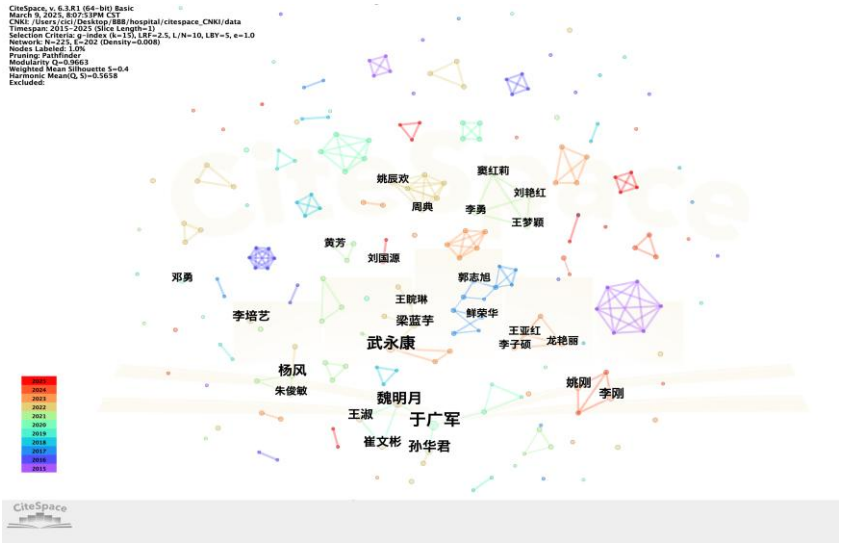

Figure 4: Cooperation with Chinese publishing authors

Figure 5: Cooperation with English publishing authors

3.1.3. Analysis of Institutions

Institutional analysis helps to understand the distribution and development of organizations in the field of internet hospitals.

Figure 6 shows that, among Chinese publications, Huazhong University of Science and Technology has the highest number of publications (9), followed by Nanjing Medical University School of Health Administration (7), West China Hospital of Sichuan University (5), Fuzhou General Hospital (7), and Guilin Medical University School of Humanities and Management (5).

Figure 7 shows that, among English publications, Sichuan University (4) and Peking Union Medical College (3) are the most active institutions. Research on internet hospitals in China is mainly concentrated in universities and their affiliated hospitals. However, the institutional network shows low centrality, and the connections between institutions are weak, with a network density of 0.0045.

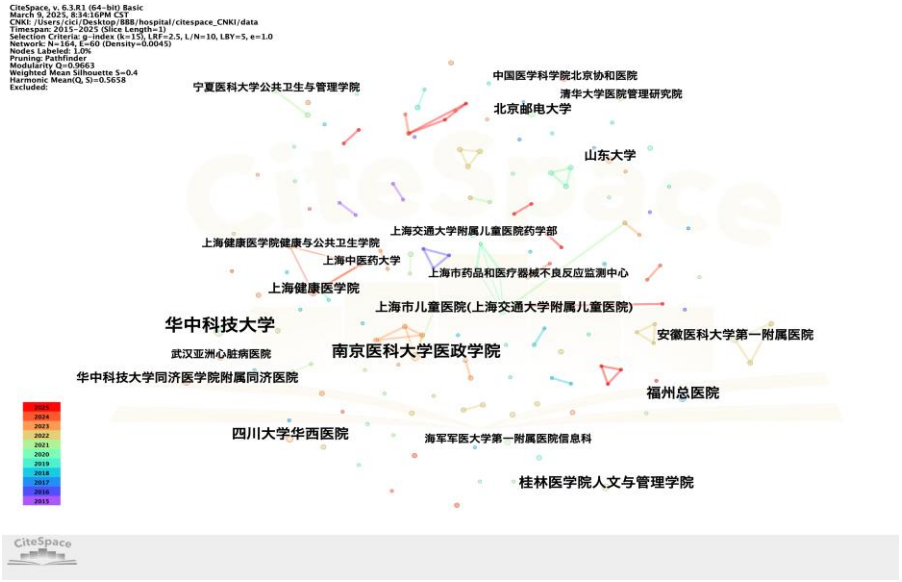

Figure 6: Cooperation with Chinese publishing institutions

Figure 7: Cooperation with English publishing institutions

3.1.4. Analysis of Publishing Regions

Based on the first author's institutional location, a spatial distribution analysis was conducted for 614 Chinese and English publications with location information using Tableau 2024.3 (see Figure 8).

The results show that research on internet hospitals exhibits significant spatial heterogeneity. Most studies are concentrated in China, forming an East-strong and West-weak gradient.

Eastern coastal cities constitute the core research areas, with Shanghai (97, 15.80%), Beijing (83, 13.50%), Guangzhou (33, 5.40%), and Nanjing (32, 5.20%) together accounting for 39.90% of publications. Fuzhou, Tianjin, and Hangzhou form secondary research clusters (18-21 publications each). Publications from central cities are moderate, with Wuhan (41), Chengdu (35), and Hefei (18) having relatively high output.

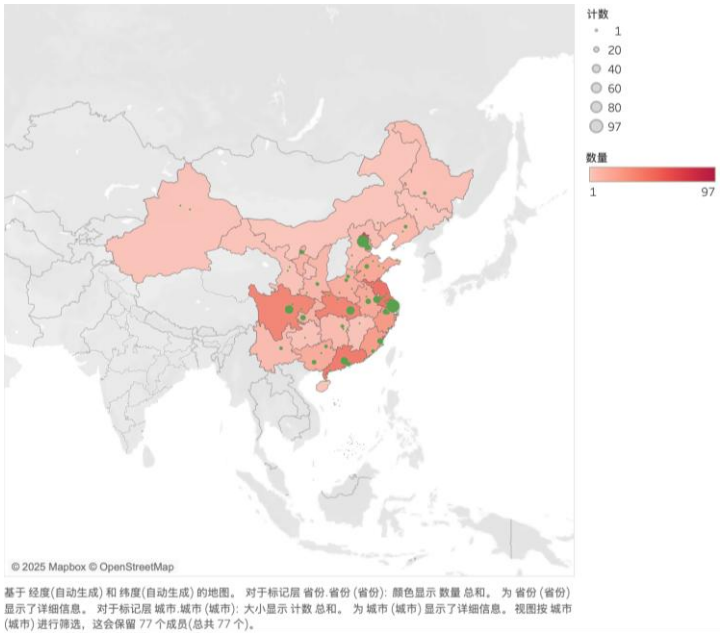

Figure 8: Regional distribution of literature

3.2. Research Hotspots and Frontiers Analysis

3.2.1. Keyword Co-Occurrence Analysis

Keyword co-occurrence analysis can identify the core keywords in internet hospital research and the relationships among them. Keyword frequency refers to how often a keyword appears in the literature. Keyword centrality indicates the extent to which a keyword connects other keywords.

Based on the co-occurrence networks of Chinese and English keywords (see Figures 9 and 10), the search terms “互联网医院” (Internet hospital), “互联网+”(Internet plus) and “互联网医疗” (Internet medical) were excluded. Table 1 shows that the most frequent Chinese keywords are “公立医院” (public hospital), “医疗服务” (medical service), “影响因素” (influence factors), “服务质量” (service quality), and “分级诊疗” (hierarchical diagnosis and treatment). High-centrality English keywords include “impact” (0.54), “adoption” (0.48), “digital health” (0.37), “acceptance” (0.37), and “medical service” (0.24).

The keyword co-occurrence analysis indicates that research on internet hospitals mainly focuses on medical services in public hospitals. Further studies emphasize factors influencing medical services, adoption, and service quality.

Table 1: Co-occurrence of high-frequency keywords in literature (top 10)

Number	Chinese literature keywords	Frequency	Centrality	Number	English literature keywords	Frequency	Centrality
1	Internet hospital	411	0.76	1	internet hospital	25	0.80
2	Internet medical	30	0.04	2	digital health	5	0.37
3	Internet plus	29	0.99	3	health	4	0.26
4	public hospital	27	0.06	4	telemedicine	4	0.23
5	Internet	19	0.31	5	acceptance	3	0.37
6	medical service	19	0.09	6	medical service	3	0.24
7	Internet diagnosis and treatment	18	0.17	7	impact	3	0.54
8	influence factors	14	0.06	8	internet hospitals	3	0.20
9	service quality	13	0.10	9	drug delivery	2	0.08
10	hierarchical diagnosis and treatment	11	0.01	10	adoption	2	0.48

Figure 9: Chinese keyword co-occurrence map

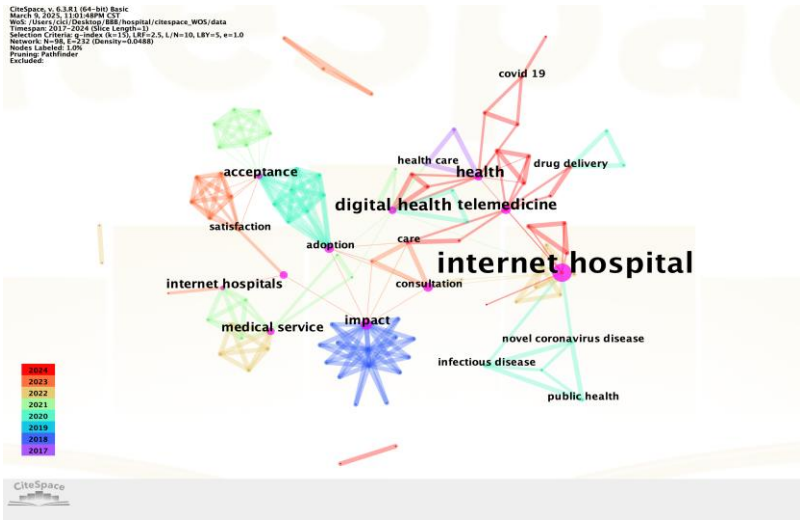

Figure 10: English keyword co-occurrence map

3.2.2. Keyword Burst Analysis

Burst keyword analysis identifies keywords in the field of internet hospitals that show a significant increase in frequency during specific periods. This allows for examining the temporal evolution of research hotspots.

In Chinese publications, 11 burst keywords were identified (see Figure 11). “互联网+” (Internet plus) and “医院” (hospital) had long durations, while “互联网” (Internet), “医院” (hospital), “远程医疗” (telemedicine), and “医院管理” (hospital management) exhibited high burst strengths, all above 2.2. From 2022 to 2025, research focus shifted to “指标体系” (indicator system), “使用意愿” (willingness to use), “医院管理” (hospital management), and “分级诊疗” (hierarchical diagnosis and treatment).

In English publications, only three burst keywords were identified (see Figure 12), with “medical service” (1.26) showing the highest burst strength. In recent years, “medical service”, “acceptance”, and “consultation” have emerged as new burst keywords.

These results indicate that optimization of medical services, improvement of operational management, and hierarchical diagnosis and treatment in internet hospitals will be key research trends in the near future.

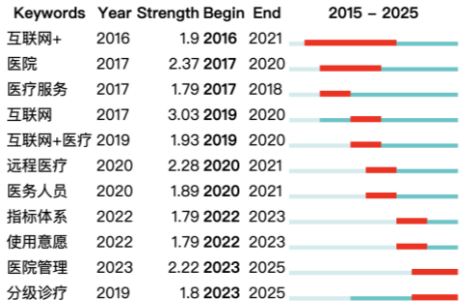

Figure 11: Top 11 Chinese keywords with the strongest citation bursts

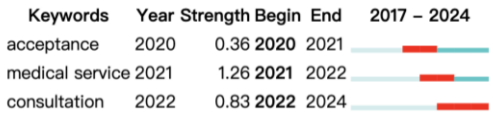

Figure 12: Top 3 English keywords with the strongest citation bursts

3.2.3. Keyword Cluster Analysis

Keyword cluster analysis groups keywords in large text datasets based on semantic similarity, helping to identify research themes or core concepts in the field of internet hospitals. Using burst keyword analysis, 12 clusters were obtained for Chinese keywords and 11 clusters for English keywords.

This study selected the top 10 Chinese clusters with the largest node counts (Figure 13) and the top 8 English clusters (Figure 14). Both sets of clusters showed modularity values $Q > 0.7$ and average silhouette values $S > 0.9$, indicating high clustering similarity and well-focused research themes [3].

The top 10 Chinese keyword clusters are: #0 Internet diagnosis and treatment, #1 Internet +, #2 Indicator system, #3 Drug delivery, #4 Satisfaction, #5 Online diagnosis, #6 Internet medical care, #7 Internet, #8 Healthcare personnel, #9 Data security. The top 8 English keyword clusters are: *0 Patient word-of-mouth, *1 Pandemic, *2 Digital health, *3 Health care access, *4 Medical service, *5 Modeling, *6 Unified Theory of Acceptance and Use of Technology (UTAUT), *7 Direct-to-consumer telemedicine.

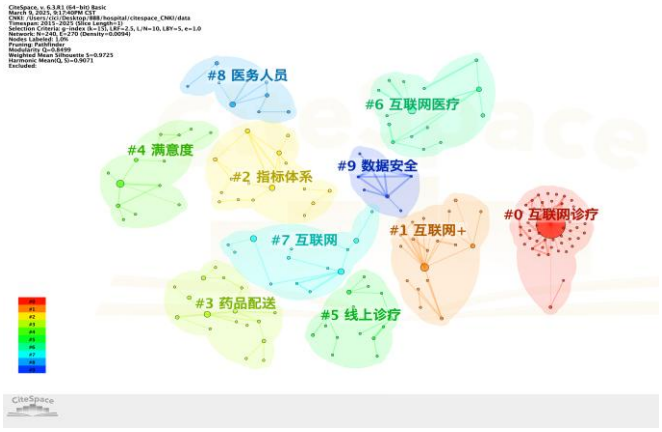

Figure 13: Chinese keyword co-occurrence clustering network

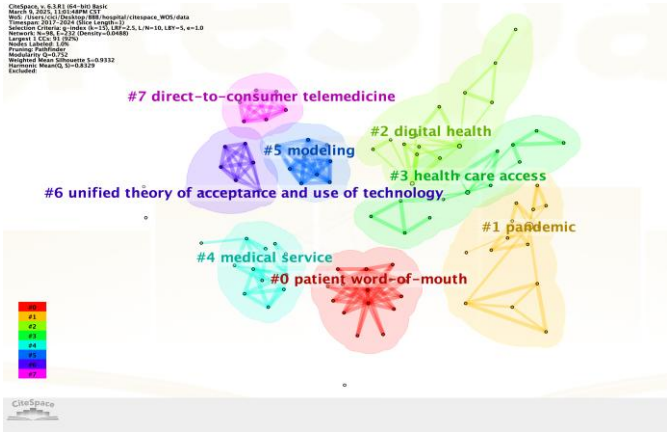

Figure 14: English keyword co-occurrence clustering network

4. Discussion

Based on keyword co-occurrence, burst and cluster analyses, internet hospitals have gradually evolved in recent years from a policy-driven model to a service optimization-oriented model, serving as an important component of China's digital healthcare development. Research themes have expanded from platform construction and development (#0, #1, #3, #6, #7, *1, *3, *7) to operational management (#5, #8, *2), user-driven service optimization (#2, #4, *0, *4, *5, *6), and information security and regulatory mechanisms (#9). This evolution follows a clear trend of "construction path - service model - quality optimization - intelligent transformation."

4.1. Research on Construction and Development of Internet Hospitals

With the ongoing digital transformation of the healthcare system, internet hospitals in China have gradually progressed from pilot explorations to a standardized stage. As an information platform connecting medical institutions, healthcare personnel, and patients, internet hospitals play a crucial role in alleviating uneven distribution of medical resources, optimizing healthcare processes, and building new medical service systems. In this context, in-depth research on the development of internet hospitals is valuable for improving medical service systems and enhancing hospital competitiveness.

Existing studies have mainly focused on construction pathways, organizational models, service functions, and policy frameworks of internet hospitals. Yu et al. [10] described the establishment, operational model, distinctive services, main achievements, and future development of Shanghai's first children's internet hospital. Xing et al. [11] analyzed internet hospital construction and challenges in Tianjin's physical hospitals. In recent years, the

application of internet hospitals in public hospitals has expanded, giving rise to new construction models, including Traditional Chinese Medicine internet hospitals [12], cloud pharmacies [6], service systems [8], payment mechanisms and medical insurance reimbursement [13], and hierarchical diagnosis and treatment [14].

Despite these advancements, many challenges remain. Scholars have reported structural issues, such as incomplete drug delivery mechanisms, unclear first-visit thresholds, lack of information system interoperability, difficulties in implementing medical insurance settlement policies, and ambiguous medical liability boundaries [15]. Theoretically, current research mainly addresses public hospital transformation, specialty development, service extension, and integration with medical insurance systems. However, most studies focus on descriptive outcomes and lack systematic comparisons of operational effectiveness across different construction models.

4.2. Research on Operation and Management of Internet Hospitals

With the normalization of internet hospital applications, platform resource allocation efficiency and system operation mechanisms have gradually become key concerns. Research on operational management is crucial for understanding organizational mechanisms and governance efficiency in internet hospitals. It provides important support for process optimization, collaborative mechanism building, and resource integration.

Current research on internet hospital operational management mainly focuses on three dimensions: operational models, management, and optimization. Regarding model evolution, operational modes have developed from three traditional early models [16] to later explorations such as the "government + medical institutions + third-party organizations" model [17] and the "Internet + healthcare + pharmaceuticals" model [18]. These models are increasingly moving toward multi-party collaboration and refined management.

In the management dimension, chronic disease management is a key burst topic. Chronic diseases have become a major public health issue. Developing an integrated online-offline chronic disease management model [19] allows continuous patient care and meets patients' medical needs. However, challenges remain, including aging-friendly adaptation, data privacy, and exclusion from medical insurance [20].

In terms of operational optimization, studies focus on reconstructing bidirectional referral mechanisms, adjusting outpatient structures, optimizing payment mechanisms, and refining service delivery [21]. Zhai et al. [22] proposed increasing the proportion of online outpatient services in internet hospitals and simulated actual operations using Simulink. They found that the optimized process could provide broader service coverage at lower cost.

Although a preliminary framework has emerged, most studies remain at the level of experience summary and policy analysis, lacking empirical support based on big data and system simulation.

4.3. Research on Medical Services and User Behavior of Internet Hospitals

Medical services and user behavior are key dimensions for evaluating the functionality and service effectiveness of internet hospitals. Research in these areas helps reconstruct doctor-patient relationships, improve information transparency, and enhance service satisfaction. It also provides data support and theoretical foundations for service optimization, population segmentation, and the implementation of intelligent healthcare.

Early studies focused on users' awareness [23] and willingness to use [24] internet hospitals, often using questionnaires and theoretical models to explore overall perceptions and influencing factors. As the industry has entered a standardized stage, research has shifted toward constructing medical service indicator systems [25], evaluating satisfaction, and optimizing services to improve internet hospital performance. It is noteworthy that no standardized evaluation system for internet hospitals exists. Existing studies often rely on

offline medical standards, insufficiently considering dimensions unique to online healthcare, such as interactive experience and technological reliability. Studies on service satisfaction have addressed improving online consultation processes through doctor-patient communication efficiency [26], enhancing inclusivity for elderly users [27], and validating process standardization using simulated patients [28].

With the breakthrough development of generative artificial intelligence, large models have begun clinical deployment. Applications in diagnostic Q&A and decision support are emerging, highlighting user demand for personalized and intelligent services. Internet hospitals are gradually transitioning from auxiliary service platforms to intelligent service systems.

Theoretically, most research still relies on offline service management frameworks, such as KANO, Lean Six Sigma [29], and SERVQUAL, for service optimization. Few studies explore the potential of AI technologies [30, 31] to enhance services. Moreover, most research emphasizes subjective measures of user willingness or satisfaction, lacking empirical analysis based on actual service usage data.

4.4. Research on Information Security and Supervision Mechanism of Internet Hospitals

Information security is not only related to patient privacy protection and data asset security but also involves ensuring the legality of medical activities, system reliability, and public trust. Current research mainly focuses on topics such as cybersecurity, medical supervision, risk management, and data security, but the literature remains limited.

Wei et al. [32] proposed a blockchain-based model for secure sharing of patient electronic medical records, offering new ideas for future secure and open sharing of healthcare data centered on electronic medical records. Zhang et al. [33] identified challenges in internet hospital supervision, including inconsistent admission standards, deficient process management mechanisms, and difficulties in defining medical liability.

Currently, under the context of data sharing and AI-assisted decision-making, the prescription generation capability of intelligent diagnostic systems in internet hospitals has extended beyond traditional medical practice boundaries. Ensuring patient privacy, standardizing responsibility for intelligent diagnosis and treatment, and addressing related information security and legal-ethical issues have become central topics in institutional innovation for internet hospitals.

5. Suggestions

5.1. Promoting Differentiated Development and Institutional Improvement

At the development level, internet hospitals should focus on differentiated exploration and improving institutional mechanisms. Medical resources vary across regions and specialties. Therefore, diversified internet hospital development should be promoted according to local conditions. For example, primary healthcare institutions can leverage regional internet hospitals to achieve resource sharing, and specialty internet hospitals, such as Traditional Chinese Medicine and pediatrics, should pursue differentiated construction.

The formulation of medical information interaction standards for internet hospitals at different regional levels should be accelerated to enable interoperability of medical records, imaging, and laboratory results across institutions. At the scientific management level, considering the challenges in internet hospital development, comprehensive systems should be established, including admission criteria, operational procedures, evaluation frameworks, and regulatory mechanisms, to ensure healthy and orderly growth of internet hospitals.

5.2. Optimizing Operational Processes and Data-Driven Management

At the operational management level, internet hospitals should focus on standardizing diagnostic and treatment processes and improving operational efficiency. Standardized service measures should be established for online consultations, offline referrals, payment and refund processes, and service complaints to identify patient needs, enhance service efficiency, and ensure continuity between online and offline services.

Operational monitoring, data collection, and analysis systems should be implemented. System modeling can simulate operational data dynamically, perform input-output analyses, and enable comparative studies of different operational models. Optimization strategies can then be evaluated empirically to assess work efficiency, effectiveness, and service quality under various models, providing guidance for improving and optimizing internet hospital operations.

5.3. Strengthening User-Oriented Services and Intelligent Optimization

At the level of medical services and user behavior, internet hospitals should focus on service refinement and intelligent development. Platforms should be easy to use and fully functional, emphasizing online consultation efficiency, quality of doctor-patient interaction, elderly-friendly design, and personalized services.

The integration of AI diagnostic technologies into platform construction is encouraged. AI tools can provide consultation and guidance before, during, and after medical visits, enhancing the platform's intelligence. An integrated online-offline service workflow should be established, including online consultation, prescription processing, offline patient visits, discharge follow-up, medication reminders, and satisfaction feedback, to improve patient experience and adherence.

Moreover, data from internet hospital services should be fully leveraged. Techniques such as natural language processing can be used to train large language models for doctor-patient communication, further enhancing the intelligent capabilities of internet hospitals.

5.4. Enhancing Information Security and Service Supervision

At the information security level, internet hospitals should ensure data protection and safeguard patient privacy. On one hand, strict information security policies should be established, clarifying legal responsibilities and risk boundaries for patient medical data. On the other hand, effective security technologies should be implemented, along with a comprehensive information security management and monitoring system. This system should include identity authentication, data encryption, access control, and anomaly detection to ensure traceability and safety of online diagnostic data.

In addition, service quality supervision should be strengthened. Affiliated institutions of internet hospitals should enhance analysis and handling of service complaints to meet patients' reasonable needs. Health administrative authorities should supervise this emerging healthcare service model to ensure patients' rights are protected.

6. Study Limitations

Existing international studies mainly focus on telemedicine, which differs from China's internet hospitals. Therefore, research findings from abroad cannot be fully applied. Meanwhile, national standards and detailed guidelines for constructing internet hospitals in China have not yet been issued. The perspectives and content of this study are based on literature retrieval, healthcare regulations, physical hospital evaluation standards, and practical experiences in internet hospital construction, which may introduce certain limitations.

In addition, the data used in this study were primarily obtained from CNKI and WOS databases. Although these sources are representative, some high-quality literature may not have been

included. Future research could expand retrieval strategies and incorporate additional databases.

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References

[1] Wang, J., Li, G., Wang, Y., Jin, Z.H., Hu, C.P. (2022) Construction of Internet hospital under COVID-19 epidemic [in Chinese]. Chinese Journal of Social Medicine, 39(1): 4-6. https://doi.org/10.3969/j.issn.1673-5625.2022.01.002

[2] China Internet Network Information Center. The 54th statistical report on China's Internet development [R/OL]. (2024-08-29) [2025-03-10]. https://www3.cnnic.cn/NMediaFile/2024/0911/MAIN1726017626560DHICKVFSM6.pdf

[3] Yue, M.K., Li, K., Wu, H.G., Zhou, L.R. (2024) Status quo and trends of health economics research in field of acupuneture and moxibustion at home and abroad: A CiteSpace and VOSviewer analysis [in Chinese]. Shanghai Journal of Traditional Chinese Medicine, 58(1): 8-15. https://doi.org/10.16305/j.1007-1334.2024.2307103

[4] Li, J., Chen, C.M. (2022) CiteSpace: Scientific Text Mining and Visualization [in Chinese]. Capital university of economics and business press, Beijing. https://www.researchgate.net/publication/367530142_CiteSpacekejiwenbenwajuejikeshihua_disanban

[5] Liu, W., Feng, Y.Y., Wang, X.N., Pan, C., Lang, Y., Zhang, Y.J. (2023) Research status and development trend of Internet hospitals in China based citespace and VOSviewer [in Chinese]. Modern Hospitals, 23(07): 1090-1094+1098. https://doi.org/CNKI:SUN:XDYU.0.2023-07-029

[6] Wei, M.Y., Chen, M., Yu, J.B., Xu, D.J., Wang, S., Yu, G.J. (2021) Design and practice of an Internet hospital cloud pharmacy platform based on blockchain [in Chinese]. China Health Resources, 24(03): 219-222. https://doi.org/10.13688/j.cnki.chr.2021.200830

[7] Wu, D.M., Cui, W.B., Yu, G.J. (2021) Analysis on the operation strategy of Internet hospitals in China [in Chinese]. Chinese Hospitals, 25(10): 79-80. https://doi.org/10.19660/j.issn.1671-0592.2021.10.23

[8] Ni, J., Wei, M.Y., Wang, S., Cui, W.B., Yu, G.J. (2023) Construction of Internet hospital service system of Shanghai Children's Hospital based on collaborative innovation of value chain [in Chinese]. Chinese Hospitals, 27(01): 79-81. https://doi.org/10.19660/j.issn.1671-0592.2023.01.22

[9] Zhou, L., Wu, Q.Q., Liao, B.H., Wang, X.Y., Su, N., Yue, R.Z., … Wu, Y.K. (2019) Current situation and development ideas of Internet Hospitals [in Chinese]. Chinese Hospital Management, 39(11): 58-60. https://doi.org/CNKI:SUN:YYGL.0.2019-11-025

[10] Yu, G.J., Gu, S.T., Cui, W.B., Zhu, W.J., Wei, M.Y., Wang, S., … Liu, Y.B. (2020) Practices and explorations on first children's Internet hospital in Shanghai [in Chinese]. China Health Resources, 23(02): 106-109. https://doi.org/10.13688/j.cnki.chr.2020.20231

[11] Xing, Z.Z., Yang, X., Fan, W.H. (2024) Analysis on Internet hospital construction in Tianjin [in Chinese]. China Hospitals, 28(02): 47-50. https://doi.org/10.19660/j.issn.1671-0592.2024.2.12

[12] Hu, T.L., Zhou, B.X., Ling, Z., Chen, Z., Chen, C.Y., Zhu, J. (2022) Study on the construction status and development trend of Internet traditional Chinese medicine hospitals [in Chinese]. Journal of Medical Informatics, 43(09): 7-11. https://doi.org/CNKI:SUN:YXQB.0.2022-09-014

[13] Chen, W.X., Li, N. (2024) Study on configuration strategy and payment schemes of E-visits based on game theory [in Chinese]. Industrial Engineering and Management, 29(04): 67-77. https://doi.org/10.19495/j.cnki.1007-5429.2024.04.007

[14] Jiang, J., Li, Z.G., Zhang, X.J., Liu, H., Chen, Y.X. (2021) Investigation on the construction of Internet plus medical treatment and hierarchical medical system [in Chinese]. Medicine and Philosophy, 42(19): 70-73. https://doi.org/CNKI:SUN:YXZX.0.2021-19-015

[15] Di, T., Yang, J.Y., Liu, M.D., Cui, J.H., Yao, Y.M. (2023) Research on development mode of Internet hospital in China [in Chinese]. Chinese Hospitals, 27(06): 81-83. https://doi.org/10.19660/j.issn.1671-0592.2023.06.22

[16] Wang, M., He, Y., Zhang, K.K., He, D., Yang, L., Yu, G.J. (2020) Comparison on operation modes of Internet hospitals in China [in Chinese]. Chinese Health Resources, 23(02): 110-113. https://doi.org/10.13688/j.cnki.chr.2020.20240

[17] Pei, Y.L., Yao, Y.C., Wang, Y. (2021) Research on the government-dominated Internet hospital operation mode under the background of big data——Based on the practice of Guiyang city [in Chinese]. Health Economics Research, 38(08): 41-44+48. https://doi.org/10.14055/j.cnki.33-1056/f.2021.08.009

[18] Wang, W.J., Zhu, X.Y. (2023) Research on operation mode of Internet hospitals: a supply Chain perspective [in Chinese]. Logistics Technology, 42(03): 15-21. https://doi.org/CNKI:SUN:WLJS.0.2023-03-004

[19] Shi, Y., Liu, G.B., Shen, G.M., Xu, J., Cao, D., Zhai, X.W. (2021) Construction and exploration of chronic disease management service model in Internet hospital for children's hospital [in Chinese]. Fudan University Journal of Medical Sciences, 48(04): 527-531. https://kns.cnki.net/kcms/detail/31.1885.R.20210706.1323.004.html

[20] Li, R.F., Shi, B.Y., Guo, H., Liu, F., Li, T., Li, M. (2023) Research progress of chronic disease management in Internet hospitals [in Chinese]. Chinese Digital Medicine, 18(01): 95-101. https://doi.org/CNKI:SUN:YISZ.0.2023-01-019

[21] Zhang, R.L., Zhang, D.M., Zhang, H., Long, S.Z., Yu, J.R., Zhang, W.J. (2023) Research on the fine operation of Internet hospital departments based on cluster analysis [in Chinese]. Chinese Digital Medicine, 18(05): 79-84. https://doi.org/CNKI:SUN:YISZ.0.2023-05-016

[22] Zhai, Y.K., Li, Z.Y., Qiao, Y., Zhai, M.B. (2024) Optimization of online and offline integrated outpatient processes in Internet hospitals [in Chinese]. Chinese Journal of Management Science, 1-13. https://doi.org/10.16381/j.cnki.issn1003-207x.2024.1571

[23] Kong, F.Y. (2023) A study on doctors' cognition and willingness to use public Internet hospitals ——A case study of a tertiary public hospital in Jinan city [in Chinese] (Master's thesis, Shandong University). Master's thesis. https://doi.org/10.27272/d.cnki.gshdu.2023.003636

[24] Zhang, L.J., Wei, Q., Sun, J.W., Meng, Y. (2022) Research on the preference of doctors in public hospitals to carry out Internet diagnosis and treatment services: Based on discrete selection experiment [in Chinese]. Chinese Journal of Health Policy, 15(11): 39-45. https://doi.org/CNKI:SUN:ZGWZ.0.2022-11-006

[25] Ke, J., Zhang, T., Chen, X.J. (2023) Construction of an index system for Internet hospital follow-up satisfaction based on the Kano model [in Chinese]. China Hospitals, 27(03): 5-9. https://doi.org/10.19660/j.issn.1671-0592.2023.03.02

[26] Hu, F.Y., Chen, D.D., Xu, J.Q., Xu, B., Ying, L., Li, G.J. (2019) Investigation of internet + total customer satisfaction management to improve hospital service quality [in Chinese]. China Hospitals, 23(06): 48-50. https://doi.org/10.19660/j.issn.1671-0592.2019.06.16

[27] Hu, Y.Q., Shao, Z.M., De, J., Tian, X.J., Zhang, Q.Y., Lou, J.Y. (2022) A Comparison of the differences in satisfaction evaluation of Internet hospitals from the perspective of "elderly friendly" [in Chinese]. Journal of Medical Informatics, 43(09): 12-18. https://doi.org/CNKI:SUN:YXQB.0.2022-09-015

[28] Hou, M.C., Li, Z.L., Guo, R. (2022) Subjective and objective evaluation of Internet diagnosis and treatment service quality in public hospitals based on standardized patients [in Chinese]. China Hospitals, 26(07): 29-31. https://doi.org/10.19660/j.issn.1671-0592.2022.7.09

[29] Zhang, C., Xu, J., Li, C.Y., Tao, J., Lu, S., Wang, T., … Chen, Y. (2021) Exploration and practice on process optimization of outpatient service in hospital based on lean six sigma [in Chinese]. China Hospital Management, 41(04): 65-68. https://doi.org/CNKI:SUN:YYGL.0.2021-04-040

[30] Yang, B., Sun, X.H., Dang, J.Y., Zhao, H.Y., Jin, Z. (2023) Named entity recognition method of large language model for medical Question answering system [in Chinese]. Journal of Frontiers of Computer Science and Technology, 17(10): 2389-2402. https://doi: 10.3778/j.issn.1673-9418.2307061

[31] Chen, R.S. (2023) Prospects for the application of healthcare big data combined with large language models [in Chinese]. Journal of Sichuan University (Medical Sciences), 54(05): 855-856. https://doi.org/CNKI:SUN:HXYK.0.2023-05-001

[32] Wei, M.Y., Wang, S., Xu, D.J. (2023) Practice of the secure sharing mode of patient electronic medical records in Internet hospitals based on blockchain [in Chinese]. Journal of Medical Informatics, 44(07): 68-72. https://doi.org/CNKI:SUN:YXQB.0.2023-07-011

[33] Zhang, S.W., Jiang, Q.D. (2023) Study on the supervision mechanism of Internet hospitals [in Chinese]. Health Economics Research, 40(09): 73-76. https://doi.org/10.14055/j.cnki.33-1056/f.2023.09.001