

Literature visualization analysis of Health Information Research in China

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Abstract. Borrowing CiteSpace to analyze the relevant literature in the field of health information included in the core of Peking University and the CSSCI database from 1995 to 2020 in CNKI, and sort out the current development context and research topics in the field of health information in China. The research found: (1) Although an obvious cooperating group of authors has formed, the core author group has not yet been formed;(2) Group research has not yet formed in this field, and the links between institutions are not close;(3) The research hotspots mainly focus on five themes of health information, online health information, information literacy, library, and health communication.

1. Introduction

In recent years, with the continuous development of China's economy and society, people's living standards have gradually improved, and health has become the pursuit of the people ^[1]. In 2016, the State Council announced the "Healthy China 2030" Planning Outline, which clarified a number of plans such as building a health information service system and improving a health information network ^[2]. In order to actively respond to national policies, the provinces and cities have established and improved organizations and institutions based on the needs of the people in order to promote the construction of a healthy China ^[3].

Domestic scholar Liu Yanhua^[4] and others used SciMAT software to cluster analysis of relevant documents in the international health information field from 1923 to 2017 based on the core database of Web of Science, expounding the dynamic evolution path of research topics in the field of international health information; Based on the core database of Web of Science and CNKI, Chen Juan^[5] and others used CiteSpace software to conduct information metrological analysis of relevant literature in the field of health information at home and abroad from 1995 to 2016, and combined domestic and foreign health information. Comparative research on field evolution path and hot frontiers.

Most scholars analyze the current international status of the health information field based on the core database of Web of Science, and lack the analysis and research on the current status of the health information field in the Chinese database. Therefore, based on the analysis tool CiteSpace, 352 journal papers collected from the core of Peking University and CSSCI from 1995 to 2020 were used as the data source, through co-occurrence Atlas, co-occurrence Atlas, research hot spots, etc. to sort out the development context of the field of health information research in China.

2. Data Collection and Research Methods

2.1 Data Collection.

Based on the data of CNKI, "health information" was used as the key word for retrieval, the Journal source was selected "Core of Peking University + CSSCI", sorted according to topic relevance and latest publication time. The documents that meet the requirements were finally screened out of 352 journal articles, and the documents were exported in Refworks format.

2.2 Research Methods.

This article adopts a combination of qualitative and quantitative research methods, based on literature review, takes the literature on health information in CNKI as the data source, and chooses CiteSpace5.0 analysis tool to analyze relevant literature in the field of health information.

3. Result Analysis

3.1 Co-occurrence Spectrum Analysis.

In the author co-occurrence map, the number of nodes N is 419, the number of connections E is 281, and the Density is 0.0032. In terms of the total number of publications, the top authors are Wang Wentao (14 articles), Zhu Qinghua (11 articles), Zhao Yuxiang (9 articles), Zhang Min (8 articles), Song Xiaokang (7 articles), Song Shijie (5 articles) Etc. In addition, an obvious cooperation network led by Wang Wentao and Zhu Qinghua has been formed. Judging from the publication time of the literature, the earlier in-depth researches on health information were Wang Wentao (1995), Zhu Qinghua (1995), Zhao Yuxiang (1995), Zhang Min (1995), Song Xiaokang (1995) Years), Song Shijie (1995), etc. These documents laid an important foundation for the research in the field of health information in China. According to Price Law [6], the core author calculation formula: $M=0.749\sqrt{N_{\max}}$, where N_{\max} is the number of papers published by the most productive author.

The results show that $N_{\max}=14$ and $M=2.80$ obtained from the above formula. According to the principle of rounding up, authors with three or more articles are the core authors in the field of domestic health information. There are 9 core authors in the field of domestic health information in this study, of which Wang Wentao has the most articles, followed by Zhu Qinghua, Zhao Yuxiang, Zhang Min, Song Xiaokang, and Song Shijie. Judging from the time when the author first published the literature, Wang Wentao, Zhu Qinghua, Zhang Min, Song Xiaokang, Song Shijie, Zhao Yuxiang, etc. were published earlier. They are not only the core scholars in the field of health information, but also the origin scholars in the field of health information. The 9 core authors have published 65 articles in total, accounting for only 17.86% of the total number of articles published, which does not reach the index of 50% of the total number of articles proposed by Price.

As a result, although there have been obvious author cooperative groups in the field of health information research in China, a core author group has not yet been formed.

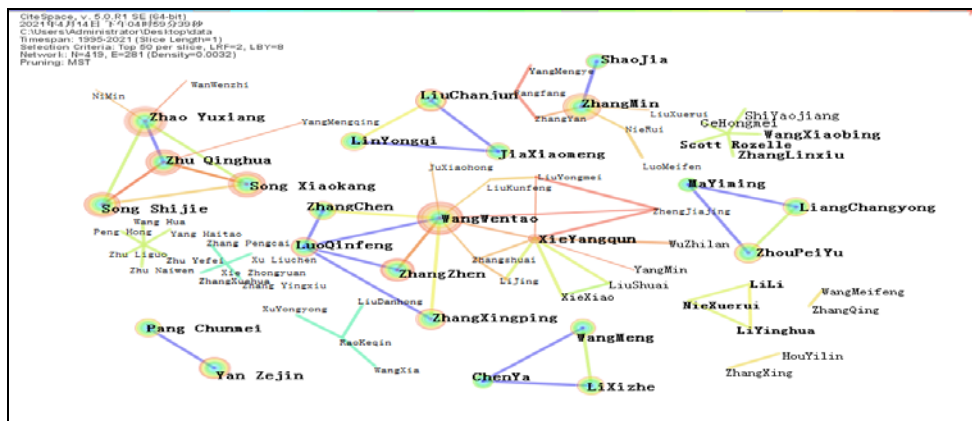


Fig. 1 Author co-occurrence Map

3.2 Institutional Co-occurrence Atlas Analysis.

According to the literature statistics author's institution, analyze the cooperation group and influence of domestic health information field. In the institutional co-occurrence map, the number of nodes $N=264$, the number of connections $E=141$, and the Density=0.0041, In addition, there are obvious cooperative groups with Nanjing University School of Information Management, Wuhan University School of Information Management, Sichuan University School of Public Administration,

Anhui University School of Management and other institutions as the main body, which are consistent with the author cluster in the author co-occurrence map.

In addition, the top six publications in the field of health information are the School of Information Management of Wuhan University (29 papers), the Information Resource Research Center of Wuhan University (22 papers), the School of Information Management of Nanjing University (14 papers), and the School of Management of Anhui University (13 articles), Chongqing Medical University School of Medical Information (11 articles), Jilin University School of Public Health (11 articles), the total number of documents is 100, accounting for only 28.4% of the total number of documents, indicating that the current health information field in China has not yet formed the main group research, the connection between the institutions is not close.

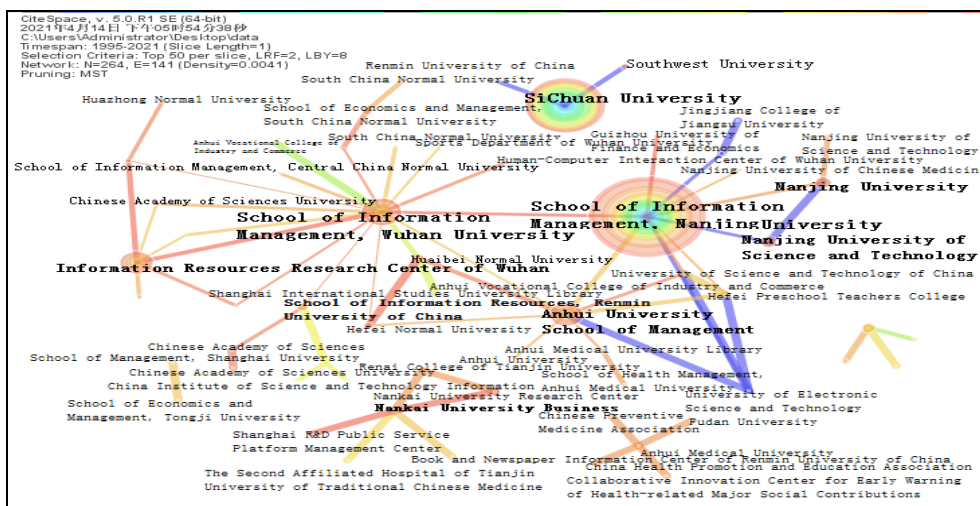


Fig. 2 Institutional co-occurrence Map

3.3 Research Hotspot Analysis.

Clustering is a hot topic formed through condensed summary on the basis of the keyword co-occurrence map, which intuitively reflects the main research field. Through subject clustering of keywords, the field is mainly divided into five themes: #0health information, #1network health information, #2information literacy, #3library, #4healthy communication, etc. It can be seen from Figure 3 that the clustering index Q value=0.7855, where $Q \in [0,1]$, when $Q > 0.3$, it means that the divided subject area map is significant; Mean Silhouette =0.7334, theoretically this value is greater than at 0.5, the clustering result is considered reasonable.

In #ZERO Health Information, it mainly includes keywords such as health information, medical care, evidence-based medicine, and public information. Domestic scholar Wan Wenzhi [7] and others investigated the influencing factors of health information search behavior. The research results show that network environment factors will indirectly affect online health information alternative search behavior.

In #ONE Internet Health Information and #FOUR Health Communication, the main research on the communication mode of health information. The clustering mainly includes keywords such as online health information, information search, health information search, information source selection, information acquisition, big data, and health communication. Among them, domestic scholar Wang Yang [8] and others proposed that the rational use of health information resources can promote the development of health management in China. In addition, related studies have shown that in the research of online health information behavior, there is a certain mechanism of action between online information query behavior and emotion. In the era of big data, "health information + Internet" can promote the development of my country's health industry to a certain extent.

In #TWO Information Literacy and #THREE Library, the research mainly focuses on the needs of health information and research hotspots. The clustering mainly includes keywords such as healthy China, information services, public libraries, research hotspots, research frontiers, health literacy, and

health information needs. Since the 19th National Congress of the Communist Party of China, China has implemented the "Healthy China" strategic deployment to improve people's health Literacy has become a hot spot in today's society. The scholar Cao Haixia of Communication University of China^[9] conducted research on American public libraries, and the results showed that public libraries played an important role in disseminating health literature. Therefore, China should promote the cooperation of relevant agencies to further promote the development of public health information services.

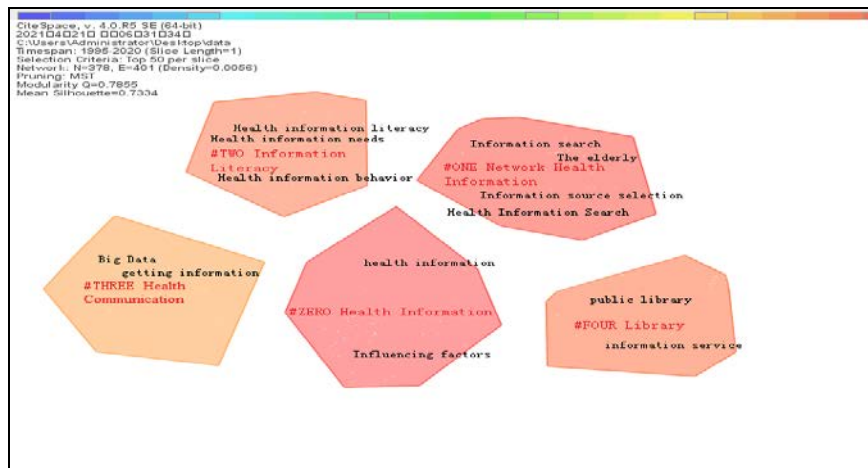


Fig. 3 Keywords cluster Map

4. Summary

Based on the bibliometric analysis, this paper studies and collates the literatures in the field of health information in China. The results show that the overall development level in the field of health information in China is still at the primary stage of development, in addition, the core group of Authors and institutions has not been formed in this field, and the research force is weak. Therefore, education and research on health information should be strengthened to promote the development of health information service.

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