Library Participation in Health Misinformation Governance: Value, Barriers, and Implementation Pathways (Postprint)

Authors: Deng Shengli, Sun Jinjie

Date: 2023-04-01T15:51:25+00:00

Abstract

[Purpose/Significance] The proliferation of false health information related to public health emergencies necessitates that libraries, as public cultural service institutions, proactively engage in service, leverage existing health information resources to participate in false health information governance, and fulfill their social responsibilities. [Method/Process] Through web-based research and literature review methods, and using COVID-19 false health information as a case study, this paper summarizes the value of library involvement in COVID-19 false health information governance, analyzes the hindering factors encountered by libraries in information resource organization, professional services, and health information literacy education when participating in false health information governance, and proposes implementation pathways for such participation. [Results/Conclusion] Library participation in false health information governance facilitates service innovation and enables libraries to play their information service role in major public health emergencies.

Full Text

The Value, Barriers, and Implementation Paths of Library Participation in Fake Health Information Governance

Deng Shengli[1], **Sun Jinjie**[2]
[1]Center for Studies of Information Resources, Wuhan University, Wuhan 430072
[2]Wuhan Library, Wuhan 430015

Abstract:
[Purpose/Significance] Fake health information related to public health emergencies is proliferating. As public cultural service institutions, libraries need to take initiative in serving the public by leveraging existing health information resources to participate in fake health information governance and undertake

social responsibility. [Method/Process] Using network research and literature review methods, and taking fake health information about COVID-19 as an example, this paper summarizes the value of library participation in COVID-19 fake health information governance, analyzes the barriers faced by libraries in organizing information resources, professional services, and health information literacy education, and proposes implementation paths for library participation in governance. [Result/Conclusion] By participating in fake health information governance, libraries can facilitate service innovation and enhance their information service role in major public health emergencies.

Keywords: library health information services; fake health information governance; health information; infodemic; COVID-19
Classification Number: G251
DOI: 10.13266/j.issn.0252-3116.2022.09.002

1 Introduction

1.1 Research Background The Healthy China strategy proposed in the 19th Party Congress report explicitly requires popularizing health knowledge, improving health literacy, and perfecting health services. As public service institutions, libraries have accumulated experience in promoting health information and improving health information literacy. Following the COVID-19 outbreak, what spread alongside the virus were not only death, fear, and economic stagnation, but also exponentially proliferating fake health information about COVID-19, covering virus origins, disease transmission pathways, prevention and treatment, diagnosis and medication, recovery, and sequelae. It can be said that while fighting the pandemic, we are also battling an "infodemic" [1]. The American Library Association's *2017 ALA White Paper* enumerated numerous efforts libraries can make to address fake information [2], and IFLA's *IFLA Trend Report 2017 Update* also raised questions about how libraries can leverage their competitive advantages to help users cope with fake information [3].

1.2 Literature Review Foreign scholars have noted that distinctions between "fake news," "disinformation," and "misinformation" remain somewhat ambiguous [4], with terms like "fake news," "rumors," "alternative facts," and "false information" frequently appearing in literature to refer to fake information. Some scholars have also described fake information from different perspectives (see Table 1). These descriptions are not mutually exclusive; their meanings overlap, and such information suffers from inaccuracy, misleading content, improper narrative, or complete fabrication. Fake health information refers to information about health knowledge, technology, skills, concepts, and behaviors that is false. This paper uses fake health information during the COVID-19 period as an example, which encompasses knowledge about the COVID-19 virus, disease transmission prevention, diagnosis and treatment, and other related content.

In terms of fake health information governance, scholars in journalism and communication have studied the dissemination and governance of fake health information on social media, proposing governance recommendations from legal regulation, public opinion early warning, technical identification, positive publicity, and media literacy perspectives [10-11]. In computer science, Yu Zhangxian et al. [12] effectively identified fake health information through deep learning. In library and information science, Zhang Shuai [13] constructed a feature list for social media fake health information, providing a useful reference for judgment. Deng Shengli et al. [14] proposed three insights for reducing the harm of fake health information to middle-aged and elderly people in public health emergencies: government agencies should focus on response methods and speed for fake health information, cooperate with stakeholders to enhance debunking effectiveness, and improve health information literacy among middle-aged and elderly people. Ma Chao [15] analyzed the content characteristics of debunking information from 10 types of debunking entities from the perspective of collaborative governance of health rumors, explored the advantages of each entity's information dissemination, and proposed that Weibo is the absolute channel for spreading debunking information.

Some LIS scholars have also focused on library health information services. Zhou Xiaoying [16] argued that public libraries should practice health information services from national, social, user, and library perspectives, opening a new field for public library services. Xu Zhongyang et al. [17] noted that libraries need to strengthen their focus on medical libraries, explore health information literacy education, improve health information librarian systems, and enhance practical application research. Shi Yanxia et al. [18] found that some urban public libraries provided contactless health information services through independent and cooperative service models during the pandemic. Overall, research on library health information services focuses on introducing foreign developments and domestic status, with limited research on content construction and business expansion, and even less on libraries and fake health information.

In recent years, some studies have proposed ideas for library participation in fake information governance. Song Junyu et al. [19] believed that the breadth and depth of participation in fake news governance demonstrates libraries' social value. Zhou Yaqi et al. [20] proposed, from the perspective of the COVID-19 pandemic, that libraries should incorporate fake information governance as an important part of emergency services, suggesting five ways for libraries to participate: cross-industry collaborative governance systems, media literacy education, emergency service mechanisms for fake information in public emergencies, integrating governance with reading promotion, and cross-platform fake information retrieval systems. Chu Jihua et al. [21] analyzed libraries' functions and positioning in the current fake information governance system, compared domestic and international practices, and identified gaps in China regarding attention, cross-institutional cooperation, and participation intensity. User health information literacy levels are crucial in library fake health information governance. Zhou Xiaoying et al. [22] proposed that in complex information environments,

the ability to correctly judge and select information is particularly important. Deng Shengli et al. [23] argued that library participation in public health information literacy promotion is driven by government policy, public demand, function expansion, and platform advantages. Li Zhen [24] believed that information literacy education and fake information governance are two sides of the same coin in library services, and that libraries should be community-based in conducting effective public information literacy education.

2 The Value of Library Participation in COVID-19 Fake Health Information Governance

New York University professor B. Paul believes that compared with addressing fake information in U.S. elections, tackling the COVID-19 information crisis is undoubtedly more aggressive [25]. Libraries at home and abroad have actively participated in COVID-19 fake information governance, and the value demonstrated in their efforts has been recognized by the public.

2.1 Information Dissemination: Authority Dispels Falsehood In the internet era, while people lament "Truth Decay" and increasingly distrust expert knowledge and news media, libraries' reputation has remained largely unchanged [26]. During the COVID-19 pandemic, libraries became windows for disseminating authoritative health information. As early as late January 2020, Wuhan Library sensitively recognized that the battle of "information epidemic prevention" was underway. On January 25, it proactively contacted Guangdong Science and Technology Publishing House to launch the electronic version of *COVID-19 Infection Protection* on its WeChat public account—the first domestic epidemic prevention book. Subsequently, Wuhan Library and district libraries launched various authoritative health information resources including *COVID-19 Prevention Manual*, *COVID-19 Infection Protection Handbook*, *28 Questions on COVID-19 Prevention*, public welfare courses on epidemic safety, and related knowledge competitions [27], becoming one of the channels for the public, especially Wuhan residents at the epicenter, to obtain authoritative epidemic prevention information and health resources. The National Library also launched a "Special Resource Collection on Fighting COVID-19" during the epidemic, containing books, lecture videos, and resource collections on virus knowledge, protective measures, disease treatment, prevention and control management, and mental health, effectively integrating health information resources and serving as a reliable window for people to comprehensively and objectively understand COVID-19. It can be said that libraries are not only authoritative centers for social public affairs communication but also become authoritative sources for knowledge dissemination due to librarians' mastery of effective information collection and organization methods [28], playing a unique role in disseminating correct health information and dispelling fake health information during the pandemic.

2.2 Information Propagation: Professional Response to Falsehood Fake health information left people defenseless during the pandemic. Libraries attempted to break through the encirclement of unhealthy information through professional services, conducting health information review, releasing professional health information in response to public concerns, and interrupting the transmission paths of fake health information. In February 2020, Shanghai Library received multiple inquiries from readers about the book *Empirical Basic Theory and Application of Traditional Chinese Medicine*, which allegedly predicted the pneumonia outbreak ten years earlier. Reference librarians conducted professional exhaustive searches, proving that the book did not exist and that a similar paper also made no epidemic predictions [29]. After the library published the review results, the rumor collapsed. Shanghai Library's WeChat public account articles such as "Do You Really Know How to Disinfect?" and "Are We Ready for the Patent Issues Surrounding Remdesivir?" also provided professional science popularization from expert perspectives, directly addressing public concerns. Additionally, on March 5, 2020, Shanghai Library, together with four other libraries and the Reading Marathon Organizing Committee, hosted the "My Battle Against COVID-19" online reading marathon flash competition, where 15,545 readers read Zhang Wenhong's popular *Professor Zhang Wenhong's Advice on COVID-19 Prevention and Control* together [30], using reading activities to attract readers' attention to libraries' positive health information, broadening health information dissemination channels, and preventing further spread of fake health information.

2.3 Information Literacy: Education to Identify Falsehood The "infodemic" has refocused LIS scholars' attention on health information literacy issues. Huang Ruhua from Wuhan University published "On the Urgency of Information Literacy Education from the Perspective of Major Public Health Emergency Response" on People's Daily Online [31]; Deng Shengli published "Governing Epidemic Prevention Rumors and Building a Clear Cyberspace" on People's Forum Online [32]; and Wang Jingxia from National Defense University published "Defeating the 'Infodemic' Requires Improving Public Media Information Literacy" in *Library Gazette* [33]. As a type of information literacy, health information literacy is a task libraries undertake to improve public health information literacy and promote library participation in fake health information governance.

Domestic libraries' health information literacy enhancement focuses on providing health information services. For example, during COVID-19 prevention and control, the Medical Information Institute/Library of the Chinese Academy of Medical Sciences provided health information services through emergency public medical information resource guarantees, establishing a comprehensive COVID-19 prevention and control service platform, pushing epidemic developments and health science popularization, and releasing health science content through media and press conferences [34]. Foreign libraries have practiced health information literacy earlier, but also mainly provide health information-related services.

In the process of governing fake health information, users' awareness of their cognitive biases does not mean these biases are eliminated [35]. In other words, cognitive biases are systematic. To govern rampant fake health information, libraries cannot assume that simply disseminating correct health information will completely solve the problem. Instead, like governing fake information in general, they should teach users how to search for, select, evaluate, and utilize health information, identify fake health information, and improve health literacy and critical thinking skills.

3 Barriers to Library Participation in Fake Health Information Governance

Based on domestic and international library practices in governing fake health information and the current state of health information services, this section summarizes barriers from three aspects: health information resources, health information services, and health information literacy education, providing references for libraries to break through bottlenecks in governing fake health information.

3.1 Issues in Library Health Information Resource Construction and Use

3.1.1 Underutilization of Print Health Resources Rich print resources are a library advantage, with extensive print health information collections providing foundational conditions for health information services. According to Shanghai Library's adult print book borrowing rankings, in the medicine and health category in 2021, the top-ranked book *A Brief History of the Human Body* was borrowed 267 times, while the 60th-ranked book was borrowed 65 times [36], indicating overall increased borrowing in this category and rising public demand for print medicine and health resources after the pandemic. During its closure, Taiyuan Library launched the "Taiyuan Library Express" service, allowing readers to select books from home and have them delivered by JD.com. During the February-March 2020 closure period, borrowing volumes and user numbers through this service multiplied, reaching a peak of 1,908 volumes and 798 users in March [37]. This demonstrates that readers' demand for print books did not decrease due to closure. Notably, in 2020, due to the pandemic and stay-at-home orders, most libraries nationwide saw stagnant print book borrowing, including Shanghai Library, which has been a service leader. Libraries' insufficient proactive use of contactless print resource services during public health emergencies meant that print health resource advantages were not fully leveraged.

On the other hand, libraries have not sufficiently organized and mined their rich print health information resources. During the pandemic, Tianjin Medical University Library published *Medical Frontiers—COVID-19 Special Issue*, and Liaoning Provincial Library used ancient book illustrations to compile two is-

sues of *Classical Epidemic Prevention Posters*. However, Zhou Yunyi et al. [38] surveyed public library WeChat emergency information services in China's "15 major cities" during COVID-19 and found that popular articles mainly consisted of announcements, resource pushes, science education, reader interaction, and promotional content, lacking originality and depth. Libraries possess rich medical and epidemic prevention print resources, especially medical libraries whose extensive medical collections are treasure troves of health knowledge and excellent materials for digital content creation. Yet few libraries have utilized these print advantages to promote deep reading and thinking for health knowledge dissemination. Print resources offer high accuracy, credibility, and systematicity, particularly advantageous for building complete knowledge systems and cultivating critical thinking compared to fragmented online information. How libraries can leverage print resource advantages to promote health knowledge is a problem that needs solving in current fake health information governance.

3.1.2 Weak Self-construction of Electronic Health Resources During COVID-19, only a few libraries built their own special epidemic prevention resource databases. The National Library established the "Special Resource Collection on Fighting COVID-19: Services Continue, Battle Ongoing" and the "China's Battle Against COVID-19 Memory Project: All-People War, Shared Knowledge." Taiyuan Library began collecting literature, audio-visual materials, and physical objects related to the "battle against COVID-19" as early as February 2020, becoming the first provincial/municipal library nationwide to complete content construction for a "COVID-19 database" [39]. Zhejiang Library established a "Reading Classics, Fragrant Books Against COVID-19" special database, providing authoritative information, short videos, think tanks, and hero promotion. However, the vast majority of libraries' special resource content was provided by digital resource vendors or publishers, most commonly including resources like Tuchuang Software and Zhangyue's "Reading Against COVID-19," CNPIEC's "COVID-19 Bookshelf," Bokan audiobooks related to the epidemic, Wanfang's COVID-19 special topic, Chaoxing's public welfare knowledge base, and Chinese Online's "All-People Fight COVID-19, 'Fragrant China' Salutes Wuhan." Libraries' large-scale procurement of these databases not only led to duplicated electronic resources across libraries without distinctive features but also weakened libraries' capacity for original health information resource creation.

More concerning is that some purchased health database resources are completely free to the public, with some content even being university professors' papers or library lecture videos that libraries own intellectual property rights to. This not only results in low-value purchases but also increases libraries' costs in governing fake health information. Additionally, without self-built health knowledge databases, libraries must balance interests with multiple data and system vendors to prevent monopolies and price discrimination, often cooperating with multiple companies simultaneously. Since products and services differ across vendors, accessing their resources requires different methods, increasing

the difficulty for libraries to organize and utilize digital resources in fake health information governance.

3.2 Issues with Smart and Professional Health Information Services

3.2.1 Need for Enhanced Smart Health Information Services The Bruno Kessler Foundation's research shows that in March 2020, an average of 46,000 new posts containing misleading information about the COVID-19 pandemic appeared daily on Twitter [40]. Library participation in fake health information governance requires stronger and smarter service capabilities, broader information service scope, faster response speed, more targeted measures, and more personalized service methods.

During the pandemic, Wuhan Library's digital resources received 5.14 million visits from February to June 2020, with downloads increasing by 75.3% year-over-year. Tsinghua University Library's digital resource visits in February 2020 were three times those of the same period in 2019 [41], with online health information visits and resource downloads also increasing. However, library data, whether print or digital, are merely ordinary data without big data characteristics [42]. Using ordinary data through traditional manual methods to govern fake health information in massive information environments is clearly insufficient. Libraries need to accelerate big data resource and service capacity building, clarify which big data health information resources to store, and utilize big data technology and modern AI to organize health information resources precisely and efficiently through visualization and personalization, truly making library health resources big data-based and health information services smart.

Many libraries have rich and colorful health information service content and forms, adopting modern communication methods and establishing health information columns. Zhao Ruihan et al. [43] investigated health information services on websites of 31 provincial public libraries in China and 36 U.S. state capital public libraries, finding that both Chinese and American public libraries provide services through health information on homepage or dedicated columns, with WeChat, Weibo, TikTok, Facebook, and Twitter as promotional platforms. However, lacking big data and cutting-edge technology support, services suffer from insufficient targeting and immediacy, making libraries' information service capabilities and influence weaker than government and corporate information service entities in fake health information governance. In a 2018 survey on public library health information service status in China, only 31.5% of respondents indicated awareness of library health information services [44]. Libraries' online information and offline activities have small audiences, are easily replaceable, and have limited influence, with innovative services like personalized services, subject services, mobile libraries, and smart libraries not functioning effectively, affecting libraries' participation in fake health information governance.

3.2.2 Need to Strengthen Librarians' Professional Service Capabilities Library health information resource construction, health information consultation, health training, and reading activities all depend on professional librarians. In fake health information governance, whether providing correct health information or identifying fake health information, health and medical professional librarians' expertise and health information service capabilities are valuable and demonstrate libraries' professionalism. During the pandemic, librarians' biggest challenge in facing massive public health inquiries was limited understanding of health information resources, making it difficult to determine which materials to use to answer readers' health questions [45]. Currently, the situation of library health information consultation services in China is not optimistic, with some libraries explicitly stating they do not provide health-related consultation due to the lack of health and medical professional librarians [46].

Currently, medical literature promotion and health lectures have become regular services in many libraries, with frequent exchanges with medical institutions and health commissions during activities. However, these activities involve professional health and medical knowledge with strong specialization. Due to the lack of health and medical professional librarians, libraries have to hire external professionals to support and participate in activities [47]. It can be said that cultivating their own health and medical professional librarians is an essential human resource element for libraries to conduct professional health information services and improve fake health information governance effectiveness.

3.3 Issues with Health Information Literacy Education

3.3.1 Librarians Underestimate the Complexity of Fake Health Information Governance Librarians' proposed information literacy solutions do not fully consider the characteristics of fake information, oversimplifying, unifying, and generalizing fake health information governance in practice. El RAYESS et al.'s survey of information literacy levels among undergraduates at Notre Dame University in Lebanon showed that gender, student category, fact-checking, and information sources had little impact on correctly evaluating information, while the college of study had more significant impact on identifying fake information [48]. However, such influencing factors have not attracted sufficient attention from librarians, with few libraries strictly setting different fake health information literacy education curricula and training programs according to different populations' health literacy levels. Additionally, some librarians believe that fake health information can be stopped simply by having "basic evaluation skills" or adopting "some simple practices" [49], ignoring not only the objective reality that fake health information is difficult to eradicate but also that people do not always process fake health information rationally and objectively, but rather mostly blindly and irrationally.

3.3.2 Defects in Fake Information Guidelines One of the main ways libraries participate in fake information governance is by providing information

literacy guidelines or skill checklists. Many libraries updated their guidelines or checklists after the pandemic, but numerous problems exist in practice. On one hand, guidelines may provide examples of fake health information but lack proven effective solutions for how to use guidelines in information activities. On the other hand, guidelines may not be updated timely, ignoring important characteristics of fake health information in different contexts and failing to meet current social needs. For example, IFLA's "How to Spot Fake News" [50], released in 2017, has not changed significantly since its release and has failed to keep pace with changes in the COVID-19 fake health information environment and characteristics, providing targeted guidance and feasible identification suggestions.

In the process of conducting health information literacy education to govern fake health information, how to help librarians comprehensively understand fake health information, use guidelines to improve public judgment of fake information, and use governance practices as vivid teaching case materials are current tasks facing library health information literacy education.

4 Implementation Paths for Library Participation in Fake Health Information Governance

Against the backdrop of rampant fake health information, public demand for authoritative health information has increased, and the authenticity and reliability of library information have gained further recognition and importance. Facing numerous challenges and barriers, library participation in fake health information governance requires upholding fundamentals while innovating, leveraging inherent advantages, and building smart, professional, leading, open, autonomous, and efficient library health information services. Libraries should cultivate health and medical professional librarians to exert greater strength and influence in fake health information governance.

4.1 Leverage Resource Advantages and Build Authoritative Resource Databases Accelerating the transformation of digital health resource construction from purchasing to self-building and proactively conducting information organization to build distinctive and authoritative health information resource databases is significant for fake health information governance. Self-built databases offer multiple values: libraries can select, verify, and evaluate health literature using their unique standards, achieving print-digital health information integration and ensuring authentic sources and accurate content, which leverages libraries' information resource advantages; simultaneously, libraries build their own professional core competitiveness, master dominance in health resource construction and information organization, and provide possibilities for big data-based health knowledge discovery and utilization. Self-built health databases can also effectively reduce dependence on external vendors, solving cross-database retrieval difficulties caused by different service providers.

IFLA provided "Key Resources for Libraries in Responding to the Coronavirus

Pandemic" during COVID-19, creating and integrating global library information during the pandemic to meet the public's potential needs for libraries [51] and becoming an authoritative and convenient window for understanding global library services during the pandemic. Although IFLA's "key resources" are not databases in the objective sense, this attempt demonstrates that the international library community has recognized the significance and value of self-built databases.

4.2 Integrate New Technologies to Provide Smart Health Information Services The "14th Five-Year Plan" explicitly proposes developing "smart libraries." National Library Director Rao Quan noted that "library smartification cannot be achieved by purchasing one or two devices; it should be a process of comprehensively reshaping libraries' resources, spaces, services, and even business management activities using intelligent technology" [52]. Online and offline collection resources, user behavior records, and library space equipment data are valuable data for library knowledge recommendation and intelligent services, as well as the big data foundation for libraries to conduct smart services and govern fake health information. Libraries need to deeply mine and organically organize their data. Using modern technologies such as deep learning, AI, and data mining to provide smart health knowledge retrieval, health information push, and personalized customized services around fake health information governance can not only bring diverse health information service experiences to the public, enhancing service breadth and depth, but also improve user stickiness and fake health information governance effectiveness.

The WHO Information Network for Epidemics achieves authoritative information sharing through technology: when searching "coronavirus" on Google, the public can obtain trustworthy latest reports with links to authoritative information from WHO and the CDC, all marked with bright red labels, offering beneficial inspiration for library participation in fake health information governance. Libraries cannot fight alone in fake health information governance but must use new technologies, methods, and approaches to cooperate with multiple stakeholders for collaborative governance. Collaborating with commercial information service providers like Baidu and Google to optimize fake health information identification technology can jointly and efficiently advance governance. Partnering with medical institutions, health commissions, CDCs, and medical universities should involve not only "sending out" library resources but also "bringing in" their latest research progress to conduct targeted science popularization and personalized customized services for different population segments. Platforms like TikTok, WeChat, and Douyu Live are also excellent health information promotion platforms. By leveraging technology and other entities' strengths, libraries can achieve 1+1>2 effects, allowing them to provide smart health information services while high-quality and efficiently advancing fake health information governance.

4.3 Emphasize Health Information Services and Cultivate Innovative, Multi-skilled Health/Medical Professional Librarians With the rapid and deep development of digital society, digital services tend to be universal and diverse, and the digital divide has shifted from "access divide" to "capability divide" [53]. The ability to use digital resources has become one of the important capabilities in the information age. Conducting fake health information governance work has brought opportunities for libraries to cultivate innovative and multi-skilled health/medical professional librarians. As guides for public information search and utilization, librarians need knowledge, skills, and experience in governing fake health information, including the ability to conduct professional health information evaluation and mining in massive data, effectively extract and promote valid health information, and educate people on how to evaluate health information authenticity. Library administrators and the library community should emphasize health information services, actively integrate into the "Healthy China" strategy, and promote comprehensive quality optimization and improvement in health-related academic research, reading promotion, reference consultation, technical services, and health information literacy education. Improving librarians' professional levels in governing fake health information requires focusing on diversity and specialization in health/medical professional librarian backgrounds during recruitment, while providing training opportunities to enhance professional librarians' comprehensive understanding of fake health information, maintain keen judgment and insight, and strengthen professional service capabilities.

4.4 Provide Regular Health Science Popularization Activities to Improve Public Health Literacy in Practice Integrating health science popularization with reading promotion and leveraging libraries' role as lifelong reading and learning venues can incorporate health promotion into libraries' regular business. It is necessary not only to provide professional health knowledge related to different groups' interests and needs but also to provide systematic and periodic information literacy courses on health information search and discrimination capabilities. Only through simultaneous improvement of health knowledge and health information literacy can we effectively change the public's thinking habits of simple attribution analogy, "defining before understanding," and replacing objective evidence with subjective imagination, fundamentally improving fake health information governance effectiveness from cognitive roots.

In practice, libraries need to conduct regular health science popularization for users through various entertaining and novel teaching forms and regular activities to expand health information literacy education influence. For librarians, they need help to objectively understand fake health information characteristics, understand cognitive patterns and complex information environments, and deeply recognize the barriers and complexity of governing fake health information. They should improve and update library fake health information governance guidelines, use governance practices as vivid teaching case materials, and strengthen health information review awareness based on verification culture,

gradually permeating the concept of focusing on health information authenticity into daily life.

References

[1] Chicago Public Library. Avoid the infodemic: sorting through fact and fiction on COVID-19[EB/OL].[2022-04-01]. https://www.chipublib.org/blogs/post/avoid-the-infodemic-sorting-through-fact-and-fiction-on-covid-19/.

[2] American Library Association. 2017 ALA white paper[J]. Library and Information Science Research, 2017, 10(2): 3-13.

[3] IFLA. IFLA trend report 2017 update[EB/OL].[2022-04-01]. https://trends.ifla.org/files/trends/assets/docu

[4] Lazer D, Baum M, Grinberg N, et al. Combating fake news: An agenda for research and action[EB/OL].[2021-12-10]. https://www.sipotra.it/wp-content/uploads/2017/06/Combating-Fake-News.pdf.

[5] Hara N, Fichman P, Meyer E, et al. A social informatics perspective on misinformation, disinformation, deception and conflict[J]. Proceedings of the Association for Information Science and Technology, 2019, 56(1): 538-540.

[6] Farkas M. Beyond fake news: determining what sources to trust[EB/OL].[2022-01-20]. https://americanlibrariesmagazine.org/2018/06/01/beyond-fake-news/.

[7] Finley W, McGowan B, Kluever J. Fake news: an opportunity for real librarianship[J]. ILA reporter, 2017, 35(3): 8.

[8] Oltmann S M, Froehlich T J, Agosto D E. What do we do about "fake news" and other forms of false information: the roles of the organization of false information, professional ethics and information literacy?[J]. Proceedings of the Association for Information Science and Technology, 2018, 55(1): 719-721.

[9] Wang Haixia. Deceptive information: research progress and prospects[J]. Information and Documentation Services, 2021, 42(5): 32-41.

[10] Zeng Xiangmin, Wang Zi. Research on the diffusion mechanism and network governance of fake health information in health communication[J]. Modern Communication (Journal of Communication University of China), 2019, 41(6): 34-40.

[11] Yang Yang, Wen Jiayuan. Error correction of fake health information in WeChat Moments: research on the influence of platforms, strategies, and topics[J]. Journalism & Communication, 2020, 27(8): 26-43, 126.

[12] Yu Zhangxian, Mao Yuqing, Hu Kongfa. Fake health information identification based on deep learning[J]. Software Guide, 2020, 19(3): 16-20.

[13] Zhang Shuai. Feature identification of fake health information on social media[J]. Library and Information Service, 2021, 65(9): 70-78.

[14] Deng Shengli, Li Yajing. Research on middle-aged and elderly people's coping behavior with fake health information in public health emergency contexts[J]. Information and Documentation Services, 2021, 42(2): 43-51.

[15] Ma Chao. Research on the category composition and community structure of health rumor debunking communities: from the perspective of multi-stakeholder collaborative governance of rumors[J]. Journal of Intelligence, 2019, 38(1): 96-105.

[16] Zhou Xiaoying. Health services: opening a new field for public library services[J]. Journal of Library Science in China, 2019, 45(4): 61-71.

[17] Xu Zhongyang, Shi Yanxia, Shang Shan. Research review on library health information services under the "Healthy China" background[J]. Library, 2020(7): 38-44.

[18] Shi Yanxia, Liu Yanan. Content analysis of contactless health information services in public libraries[J]. Journal of Sichuan Library Science, 2021(6): 37-42.

[19] Song Junyu, Meng Xiangbao. The value, types, and strategies of university library participation in fake news governance[J]. Library and Information Service, 2021, 65(13): 3-11.

[20] Zhou Yaqi, Jing Qing, Niu Yu. Research on library participation in fake information governance under the "All-People War Against COVID-19" background[J]. Library and Information Service, 2020, 64(15): 177-183.

[21] Chu Jihua, Liu Chunhong, Lu Yao, Chen Yanfang. Comparison and enlightenment of domestic and foreign library practices in fake information governance[J]. Information Studies: Theory & Application, 2021, 44(5): 140-145.

[22] Zhou Xiaoying, Song Dan, Zhang Xiumei. National strategy research on health literacy and health information communication and utilization[J]. Library and Information, 2015(4): 2-10.

[23] Deng Shengli, Fu Shaoxiong. Library participation in public health information literacy promotion: driving factors, foreign practices, and reflections[J]. Library and Information Knowledge, 2018(2): 5-13.

[24] Li Zhen. Two sides of the same coin in library services: public information literacy education and fake information governance[J]. Library, 2021(4): 39-46.

[25] Consumer Reports. Fight against coronavirus misinformation shows what big tech can do when it really tries[EB/OL].[2022-04-01]. https://www.consumerreports.org/consumer-protection/fight-against-coronavirus-misinformation-shows-what-big-tech-can-do/.

[26] Johnson B. Information literacy is dead: the role of libraries in a post-truth world[J]. Computers in libraries, 2017, 37(2): 19-.

[27] Li Jingxia, Li Zhenwu. Questioning and reflection on library professionalism in the new era: taking Wuhan area public libraries' anti-COVID-19 practices as an example[J]. Journal of Library Science in China, 2020.

[28] Chen Chuanfu, Feng Changyang, Chen Yi. Exploration of regular transformation development models for libraries facing comprehensive well-being[J]. Journal of Library Science in China, 2016(1): 4-20.

[29] A so-called divine prediction about the "epidemic": how do we verify a book's authenticity?[EB/OL].[2022-03-12]. https://www.thepaper.cn/newsDetail_{{{forward}}_{{6065494}}

[30] Drinking from the same river, reading the same book: "My Battle Against COVID-19" online reading marathon flash competition express[EB/OL].[2022-01-20]. https://www.shkp.org.cn/Detail_{{{forward}}_{{6065494}}}.

[31] Huang Ruhua. On the urgency of information literacy education from the perspective of major public health emergency response[EB/OL].[2022-03-12]. https://baijiahao.baidu.com/s?id=1660011661761550881.

[32] Deng Shengli. Governing epidemic prevention rumors and building a clear cyberspace[EB/OL].[2022-03-12]. http://www.rmlt.com.cn/2020/0409/575781.shtml.

[33] Wang Jingxia. Defeating the "infodemic" requires improving public media information literacy[N]. Library Gazette, 2020-04-10(5).

[34] Liu Liangliang, Ren Huiling. Practice and reflection on medical library public health information literacy education in public health emergencies[J]. Library Journal, 2020, 39(7): 104-113, 123.

[35] Trout J D. The empathy gap: building bridges to the good life and the good society[M]. New York: Viking, 2009.

[36] Shanghai Library borrowing rankings - adults[EB/OL].[2022-01-20]. https://library.sh.cn/#/index/libraryList.

[37] Taiyuan Library 2020 annual report[EB/OL].[2022-01-20]. http://59.49.96.132/web/information/6406.

[38] Zhou Yunyi, Zhang Lei. Research on library WeChat emergency information services under the COVID-19 environment: taking public library WeChat accounts in China's "15 major cities" as examples[J]. Journal of Library Science, 2020, 42(12): 7-12.

[39] Building a monument for 2020! The nation's first local library "COVID-19 database" has taken shape[EB/OL].[2022-01-20]. https://mp.weixin.qq.com/s/8Q32cwUp76Lp69BKD1OvQA.

[40] Hollowood E, Mostrous A. Fake news in the time of C-19[EB/OL].[2022-01-20]. https://members.tortoisemedia.com/2020/03/23/the-infodemic-fake-news-coronavirus/content.html.

[41] Wang Xiaoqiong, Zhu Haitao. The game between university libraries and data providers in extraordinary times: taking the COVID-19 pandemic as an example[J]. Journal of Library Science, 2020, 42(11): 7-12.

[42] Cheng Huanwen, Liu Jiaqin. The mission, problems, and directions of library science research[J]. Library and Information Service, 2020, 64(1): 20-24.

[43] Zhao Ruihan, Wang Xiaojing. Comparative research on health information services in Chinese and American public libraries[J]. Library Work and Study, 2021(9): 3-10.

[44] Jin Yan, Zhang Qiyuan. Investigation and analysis of public library health information service status in China[J]. Library and Information Knowledge, 2018(2): 24-31, 23.

[45] Tan Dajun. Exploration of health information librarian roles in American public libraries[J]. Library Tribune, 2018, 38(12): 168-175.

[46] Wu Xiaoxian, Zhai Meng, Gao Can, Pan Huiling, Kang Fangfang, et al. Discussion on public library health information services during COVID-19[J]. Chinese Journal of Traditional Chinese Medicine Library and Information Science, 2021, 45(5): 26-29.

[47] Li Aiming, Wu Zuan. Research on public library health information services under the COVID-19 background: taking health information services on WeChat public platforms of 12 prefecture-level public libraries in Hubei Province as examples[J]. Journal of Academic Library and Information Science, 2020, 38(6): 23-26, 44.

[48] El RAYESS M, Chebl C, Mhanna J, et al. Fake news judgment[J]. Reference services review, 2018, 46(1): 146-129.

[49] Cook N A. Post truth, truthiness, and alternative facts: information behavior and critical information consumption for a new age[J]. The library quarterly, 2017, 87(3): 211-221.

[50] IFLA. How to spot fake news[digital image][EB/OL].[2022-04-01]. https://www.ifla.org/publications/node/11174.

[51] IFLA. COVID-19 and the global library field[EB/OL].[2022-04-01]. https://www.ifla.org/covid-19-and-libraries#actions.

[52] Rao Quan. Review and prospect: problems and reflections on library transformation development[J]. Journal of Library Science in China, 2020, 46(1): 4-15.

[53] Cyberspace Administration of China. Digital China construction development process report (2019)[R/OL].[2022-03-15]. http://www.gov.cn/xinwen/2020-09/13/content_{5543085}.htm.

Author Contributions:

Deng Shengli: Proposed the research topic and ideas, designed and improved the research plan, wrote and revised the paper.

Sun Jinjie: Participated in research plan design, collected and analyzed data, wrote and revised the paper.