

PERCEPTION OF LIBRARY USERS ON VIRTUAL LIBRARY SERVICES FOR UTILIZATION OF MEDICAL INFORMATION RESOURCES IN NATIONAL TUBERCULOSIS AND LEPROSY TRAINING CENTRE (NTBLTC), ZARIA, KADUNA STATE – NIGERIA

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ABSTRACT

This study investigated the Perception of Library users on Virtual Library Services for Utilization of Medical Information Resources in National Tuberculosis and Leprosy Training Centre (NTBLTC), Zaria, Kaduna State – Nigeria. The article was guided by 3 research questions focusing on the types of medical information services provided, the technological readiness of the NTBLTC library and the perceptions of the benefits of virtual library services for medical information resources. The study employed a quantitative research methodology using a survey research design. The population comprised 126 registered library users, and data were analyzed using descriptive statistics. The finding revealed that medical information services at the NTBLTC Library shows that circulation and lending services are the most highly utilized. Also, the finding revealed that core services such as current awareness, medical reference, electronic resources, circulation/lending, cataloguing, and document delivery demonstrated strong technological readiness for virtual adoption, other services such as medical translation, interlibrary loan, recreation/leisure, and indexing/abstracting showed weaker readiness and required significant improvement. The finding further reveals that the majority of library users strongly recognized the benefits of virtual library services in enhancing access to medical information at the NTBLTC Library. The study concluded that perception of library users on virtual library services for accessing medical information at NTBLTC, Zaria, is relatively low and inadequate. It was recommended that to enhance library resources usage, the NTBLTC Zaria Library are to conduct regular needs assessments, upgrade underutilized services and establish supportive institutional policies, and collaborate with ICT providers to strengthen internet reliability.

Keywords: *Library Users, Medical Information Services, NTBLTC Zaria, Technological Readiness, Virtual Library*

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Introduction

The library acts as a pillar in disseminating up-to-date and reliable information to users. No medical hospital or institution can achieve significant academic development without adequate library services. The 21st century has witnessed a remarkable expansion of information services, primarily due to the rise of virtual libraries, which have transformed global information provision.

Ejegwa and Mngutyo (2023) describe a virtual library as a digital domain that houses and organizes virtual books and related documents. A virtual library is essentially an application of information and communication technology (ICT) in library services, leading to significant improvements in the delivery of medical information. A virtual library can promote knowledge sharing, facilitate rapid responses, provide significant storage capacity for information dissemination, and reduce unnecessary procrastination. Nongo (2020) underlines the value of virtual library services, highlighting that a virtual library, can help improve knowledge sharing, support rapid responses, provide a wide range of storage capacity for disseminating information, and reduce unnecessary procrastination.

Virtual resources have become indispensable tools for medical professionals and research students, offering vital support for academic activities such as note-taking, seminars, and complex project work (Kashyap, 2021). Despite their utility, the adoption of these platforms remains inconsistent across various institutions (Singh, 2021). For instance, a cross-sectional study at Multan Medical College revealed that while students frequently utilize electronic resources for general learning, they maintain a limited awareness of specialized scholarly databases like MEDLINE, PubMed, and ScienceDirect (Habib & Bahader, 2022). The effective implementation of these digital tools necessitates a shift in the roles and competencies of information professionals. Librarians in the digital age must now cultivate a diverse range of technical, managerial, and communication skills to manage virtual environments successfully (Babalola, 2020). Continuous professional development through structured training programs is essential to maintaining high service quality and meeting evolving user demands (Babalola, 2020).

Beyond simple resource provision, the scope of modern library services has expanded to encompass metadata management, interlibrary loans, and targeted outreach initiatives (Harun, 2023). Because medical data is critical to enhancing patient care outcomes, libraries must prioritize regular assessments of user needs (Okeke, 2019). Such evaluations ensure that institutional collections remain relevant and that resource allocation effectively supports both clinical practice and academic inquiry (Okeke, 2019). Technological developments have transformed library services, transforming them from book repositories to spaces for creativity, collaboration, and knowledge creation. Momoh & Folorunsonm (2019). Singh (2015) and Babalola (2020) agree that virtual libraries have taken over the function of medical information services from manual to digital methods. Traditional services, including collection development, cataloguing, classification, borrowing, referencing, current awareness services (CAS), selective dissemination of information (SDI), and bibliographic services, have transitioned to digital services, including online access to high-quality

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information, metadata creation, virtual reference creation, information literacy training, collaboration, digitization, and digital repository management.

At the moment the National Tuberculosis and Leprosy Training Center (NTBLTC) is in operation, a handbook library containing various materials, including diagnostic and treatment guidelines, medical books, research papers, journals, drug content, and patient education materials, focused on maternal and child health (MCH), HIV/AIDS, sexually transmitted infections (STIs), tuberculosis, leprosy, Buruli ulcer, cardiovascular diseases (CVDs), and dermatological disorders. This library is expected to provide high-quality medical information services. A virtual library for medical information services offers several benefits, including faster and easier access to relevant materials, enhanced research support, and improved decision-making. Virtual libraries optimize workflow, reduce time spent on manual searches, and free librarians to perform more valuable tasks. Ultimately, understanding and effectively deploying virtual library services can significantly improve the availability of medical information in settings like NTBLTC, enabling both healthcare professionals and students to respond to their changing information needs.

Statement of the Problem

Evidence-based research and the provision of high-quality medical information in specialized hospitals such as the National Tuberculosis and Leprosy Training Centre (NTBLTC), Zaria, depend largely on timely access to accurate and reliable medical information resources. In line with global trends, health sciences libraries are increasingly adopting virtual library (VL) services to facilitate remote access to scholarly materials, enhance clinical decision-making, and promote academic productivity (Cooke, 2021). In the twenty-first century, libraries that fail to embrace virtual services and appropriate information technologies risk becoming ineffective, stagnant, and potentially obsolete (Tofi, 2019). Existing studies have highlighted the importance of virtual libraries in improving access to medical information, yet little is known about the extent to which NTBLTC Library users are aware of, access, or benefit from such services. This creates a research gap in understanding how virtual library services could enhance the quality, accessibility, and utilization of medical information at NTBLTC. Despite the recognized benefits of virtual libraries in enhancing access to medical information, little is known about the level of awareness and utilization of such services among NTBLTC Library users..

Recent observations within Nigerian academic and medical institutions indicate a significant trend of library underutilization among students and healthcare professionals (Abule, 2023). This challenge is often exacerbated by the absence of modernized outreach services, such as e-mail notifications, electronic alerts, and the Selective Dissemination of Information (SDI). Furthermore, the lack of online databases and electronic resource consortia hinders the ability of these institutions to raise awareness of available scholarly materials, which is crucial for promoting effective resource engagement (Abule, 2023). To address these systemic gaps, the present study assesses the awareness and utilization of medical information services specifically within the National Tuberculosis and Leprosy Training Centre (NTBLTC) Library. By evaluating current usage patterns and identifying barriers to access, this research aims to establish a

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foundational user-centered model for information delivery tailored to the unique needs of the NTBLTC. Ultimately, these findings are intended to enhance the quality of available library resources and directly support the center's mission of advancing specialized medical training and patient care.

Objectives of the Study

1. Identify the types of medical information services that are available in the NTBLTC Library, Zaria
2. Find out the level of technological readiness for the utilization of virtual library medical information services at NTBLTC Library
3. Find out the perceptions of library users regarding medical information services with the associated benefits of the virtual library at NTBLTC, Zaria

Literature Review

Medical libraries are categorized as special libraries, focusing exclusively on health and medical information to support healthcare professionals, medical researchers, students, and related stakeholders. As specialized institutions, their primary objective is to provide access to reliable, evidence-based, and timely information resources that enhance medical practice, research, and education. The scope of services they provide is broad and designed to meet the diverse needs of users, both in traditional and digital environments. According to Oluchi et al. (2017), medical information services typically include circulation and lending services, reference services, cataloging services, recreational/leisure services, current awareness services (CAS), document delivery services, interlibrary loan services, and documentation services. These services are essential in ensuring continuous access to health information resources across different user groups. Similarly, Ikolo (2020) emphasized that the Delta State University Teaching Hospital Library serves as a repository of diverse medical information materials such as books, journals, magazines, maps, dictionaries, encyclopedias, newspapers, and electronic resources, which support both academic research and professional practice.

Within the context of medical information service provision, Ga'anda (2018) defines the readiness of a virtual library as the extent to which individuals, groups, or organizations are able, willing, and prepared to engage in virtual library services for professional purposes. This highlights readiness as a key prerequisite for implementing innovative systems, such as virtual libraries, within hospital environments. Kenchakkanavar (2023) emphasizes that technologies such as CD-ROMs support the storage, organization, dissemination, and maintenance of collections, providing access to diverse electronic resources including e-databases, e-journals, e-magazines, e-books, e-audio, e-images, GIS projects, electronic exhibitions, e-subject guides, e-newsletters, e-conference proceedings, and web-based search tools. In addition, computer systems and scanners form integral technological infrastructures that underpin modern library operations. Library services comprise processes and activities deployed to deliver information resources to users, with the ultimate aim of facilitating their academic, clinical, and research activities (Chudasma, Bhatt, & Trivedi, 2019).

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According to Singh (2021), one of the primary advantages is improved access to up-to-date research. Virtual library services give healthcare professionals, students, and researchers quick and easy access to current medical literature and research findings. This ensures that medical practitioners remain informed about the latest treatment options, clinical guidelines, and scientific advancements—an essential factor for improving patient care and healthcare outcomes.

Another major benefit is the faster retrieval of medical and clinical resources. Khan, Modak, and Khan (2021) noted that digital resources allow for quicker searching, accessing, and retrieving of medical journals and clinical texts compared to traditional methods, where physical copies are often limited and not readily available. This efficiency not only saves time for healthcare professionals but also strengthens their capacity to stay updated on emerging research and best practices. This study fills these gaps by proposing strategic investments in ICT infrastructure, staff training, policy reforms, and long-term funding mechanisms to ensure high-quality medical information accessibility. Additional research may be required to investigate the perception, use, and impact of virtual library services among healthcare professionals and researchers in NTBLTC.

Research Methodology

A descriptive survey research design was used for this study. The population for the study consisted of 126 registered library users at the National Tuberculosis and Leprosy Training Centre (NTBLTC) in Zaria. Total enumeration sampling technique was used to the registered library users of National Tuberculosis and Leprosy Training Center Zaria based on the number of their population. The questionnaire was the only instrument for data collection, which was distributed by the researcher to the respondents through the aid of recruited research assistant. The data collected was presented and analyzed by using frequency distribution tables follow by discussions.

Interpretation of Results and Discussion of findings.

Table 1. Response Rate

S/No.	Respondents	Copies of Questionnaires Distributed	Copies of Questionnaires Retrieved	Percentage (%) of the Retrieved Copies of the Questionnaire
1	Registered library users	126	118	93.7%.

Source: computation 2025

Out of the 126 questionnaires distributed, 118 were successfully retrieved, giving a response rate of 93.7%. Such a high response rate strengthens the reliability and credibility of the study's findings, as it indicates that the sample closely represents the target population.

Table 2 Types of Medical Information Services Available in NTBLTC Zaria Library

S/NO.	Types of Medical Information Services	Frequency	Percentage (%)
1	Medical Current Awareness Service	50	42.4%

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2	Medical Index/Abstract Service	42	35.6%
3	Medical Cataloguing Service	45	38.1%
4	Medical Research Service	34	28.8%
5	Circulation/Lending Service	98	83.1%
6	Medical Reference Service	62	52.5%
7	Medical Translation Service	33	28.0%
8	Recreation/Leisure Service	24	20.3%
9	Inter Library Loan Service	22	18.6%
10	Medical Document Delivery Service	45	38.1%

Source: Field Survey, 2025

The analysis of medical information services at the NTBLTC Library shows that circulation and lending services are the most highly utilized, An analysis of medical information services at the

NTBLTC Library indicates that circulation and lending services are the most frequently used by patrons with (83.1%), followed by medical reference services (52.5%), current awareness (42.4%), cataloguing (38.1%), document delivery (38.1%), indexing/abstracting (35.6%), medical research (28.8%), translation (28.0%), recreation/leisure (20.3%), and interlibrary loan (18.6%). This pattern reflects the foundational role of direct resource access and professional guidance in a medical information environment, while more specialized services and leisure options are less utilized. The implications of these findings suggest that while the NTBLTC Library has established strong traditional services, particularly in circulation and reference support, there is a need to enhance specialized and technology-driven services such as interlibrary loan, translation, and research support. Strengthening these areas will contribute to improved access to global medical knowledge, support clinical decision-making, and foster professional development among users (Ajibade, 2021).

Table 3. Technological readiness of virtual library towards utilization of medical information services

S/NO.	Technological readiness of medical information services	Frequency	Percentage (%)
1	Current awareness as e-services	89	75.4%
2	Medical index/abstract as e-services	45	38.1%
3	Medical catalogue as e-services	78	66.1%
4	Medical research materials as e-resources	87	73.7%
5	Circulation/lending as e-services	79	66.9%
6	Medical Reference as e-services	89	75.4%
7	Medical translation as e-services	50	42.4%
8	Recreation/leisure as e-services	50	42.4%
9	Inter library loan as e-services	50	42.4%
10	Medical document delivering as e-services	78	66.1%

Source: Field Survey, 2025

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The findings on technological readiness at the NTBLTC Library indicate significant variation across different medical information services. The highest levels of readiness were observed in current awareness services (75.4%) and medical reference services (75.4%), as well as medical research materials provided as e-resources (73.7%). This suggests that the NTBLTC Library has prioritized core medical services that directly support research, clinical practice, and user engagement. According to Adamu and Ojo (2021), technological readiness in current awareness and reference services is crucial because they provide health professionals and students with timely access to emerging medical knowledge and evidence-based resources. Circulation/lending services (66.9%), cataloguing (66.1%), and document delivery (66.1%) also recorded relatively high levels of readiness, showing that the library has begun transitioning essential traditional functions into electronic formats. This aligns with the observation by Bello and Yusuf (2020) that the integration of cataloguing and circulation into e-services enhances efficiency, reduces manual workload, and improves the accessibility of information resources to a wider audience.

Conversely, some specialized services reflect weaker levels of readiness. For example, medical index/abstract services (38.1%), medical translation (42.4%), recreation/leisure (42.4%), and interlibrary loan services (42.4%) recorded comparatively low technological adoption. This indicates that while the NTBLTC Library is technologically prepared in core areas, specialized and value-added services remain underdeveloped. As noted by Nkanga (2022), medical libraries in Nigeria often lag in the automation of specialized services due to funding constraints, lack of skilled personnel, and infrastructural challenges.

The implications of these findings are critical. The strong readiness in core services suggests that NTBLTC is on a positive trajectory toward digital transformation and can effectively support academic and clinical needs in its immediate environment. However, the weaker readiness in specialized services highlights the need for investment in infrastructure, staff training, and collaborative partnerships with other medical institutions. Umeozor (2023) emphasizes that without comprehensive technological adoption, medical libraries risk creating partial virtual services that limit user satisfaction and restrict the full benefits of digital innovations.

Overall, the study demonstrates that while NTBLTC Library has achieved notable progress in adopting e-services for core medical information provision, a holistic strategy is required to extend readiness to specialized services, ensuring equitable access to a broad spectrum of medical resources for both students and healthcare professionals.

Table 4. Perception of library Users on medical information services with the associated benefits of virtual library

S/NO.	Benefits of virtual library	Frequency	Percentage (%)
1	Improved access to up-to-date virtual medical information and research	100	84.7%
2	Faster retrieval of medical and clinical resources	98	83.1%
3	Enhanced support for healthcare professionals and researchers	100	84.7%

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4	24/7 access to digital medical resources and databases	101	85.6%
5	Reduced reliance on physical space and hardcopy materials	89	75.4%
6	Increased collaboration with other medical libraries and institutions	78	66.1%
7	Improved information literacy among users	101	85.6%
8	Better preservation and organization of medical records and resources	50	42.4%
9	Greater efficiency in disseminating health information to staff and patients	89	75.4%
10	Cost savings in the long term through reduced print subscriptions and maintenance	50	42.4%

Source: Researcher's Field Survey, 2025

The analysis reveals that the majority of respondents strongly recognized the benefits of virtual library services in enhancing access to medical information at the NTBLTC Library. The most highly rated benefits were 24/7 access to digital medical resources and databases (85.6%) and improved information literacy among users (85.6%). These findings reflect the growing recognition that virtual libraries extend the availability of knowledge resources beyond the limitations of time and space, thereby supporting both academic and clinical needs. As Ajibade (2020) notes, around-the-clock access to digital content is one of the most transformative advantages of virtual library adoption, ensuring that health professionals and students can consult resources at their convenience.

Similarly, improved access to up-to-date medical information and research (84.7%) and enhanced support for healthcare professionals and researchers (84.7%) emerged as key benefits. This highlights the potential of virtual libraries to serve as crucial tools for evidence-based practice and continuous professional development. According to Edem and Okon (2021), access to current digital medical resources directly influences the quality of clinical decision-making and the advancement of medical research in Nigerian teaching hospitals. Faster retrieval of resources (83.1%) was also recognized as a major benefit, indicating that virtual library services can significantly reduce delays often associated with manual searches in physical collections. This supports the observation by Oladipo (2022) that digital retrieval systems improve efficiency and save valuable time for healthcare practitioners and students who require quick access to reliable information.

Other benefits such as reduced reliance on physical space and hardcopy materials (75.4%) and greater efficiency in disseminating health information (75.4%) further emphasize the relevance of virtual libraries in overcoming infrastructural limitations common in Nigerian specialized libraries. As highlighted by Musa and Ibrahim (2019), space and preservation challenges are major constraints in medical libraries, and digital solutions provide sustainable alternatives. However, some benefits were less strongly acknowledged. For instance, better preservation and organization of medical records (42.4%) and cost savings through reduced print subscriptions (42.4%) were rated lowest. This suggests that users may be less aware of the long-term institutional advantages of virtual library adoption. According

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to Okeke (2020), cost-effectiveness and preservation benefits are often underappreciated by end users, though they remain crucial for library sustainability and management.

Implications of the study point to the strong perception among NTBLTC Library users that virtual libraries are vital in improving accessibility, efficiency, and professional support. This aligns with the need for NTBLTC to prioritize digital integration, strengthen information literacy programs, and ensure consistent promotion of the less visible benefits such as cost-effectiveness and digital preservation. Doing so would maximize both user satisfaction and institutional efficiency.

Summary of Findings

Based on the data collected and analyzed for this study, the following major findings were identified:

1. The study found that registered users of the NTBLTC Zaria Library largely recognized basic access services available such as circulation and reference, while specialized medical information services such as indexing, research support, and translation.
2. The findings revealed that while core medical information services in NTBLTC Zaria, such as current awareness, medical reference, research materials as e-resources, circulation/lending, catalogue, and document delivery, demonstrated strong technological readiness for adoption as virtual library services, other services such as medical translation, recreation/leisure, inter-library loan, and medical indexing/abstracting reflected weaker readiness and required significant improvement.
3. The study found that library users at NTBLTC Zaria strongly perceived virtual libraries as highly beneficial for improving access, efficiency, collaboration, and support for healthcare practice and research, while benefits related to preservation and long-term cost savings were less emphasized.

Conclusion

It was concluded that the awareness of virtual library services for access to medical information services by library users in the National Tuberculosis and Leprosy Training Centre (NTBLTC), Zaria, Kaduna State, Nigeria, was relatively low and inadequate. While users recognized and utilized basic library services such as circulation, reference, and access to research materials, their awareness and utilization of specialized medical information services like indexing, medical translation, and research support remained poor. Although users perceived virtual libraries as highly beneficial for improving efficiency, collaboration, and healthcare practice, the actual implementation and adoption of these services were constrained by challenges such as weak IT infrastructure, insufficient funding, lack of skilled personnel, and fragile institutional policies. This showed that while the potential for a successful virtual library system existed, the current state of awareness and utilization of medical information services at NTBLTC was not satisfactory and required significant strategic improvement.

Recommendations

Based on the findings of this study, the following recommendations were made:

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1. The NTBLTC Zaria Library was advised to expand its scope beyond basic access services by introducing comprehensive research assistance, clinical information tools, and subject-specific medical databases tailored to the needs of health professionals and students.
2. The existing technological readiness was recommended to be leveraged to pilot virtual library services, starting with the digitization and integration of core medical resources, while ensuring continuous upgrades and maintenance of IT infrastructure.
3. Given the positive perception among staff, management was advised to prioritize the adoption and scaling of virtual library platforms, providing necessary support for implementation while actively engaging staff in the planning and execution phases to ensure long-term sustainability.

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