



TECHNOLOGIES AS DETERMINANTS FOR INFORMATION SERVICE DELIVERY: COLLEGE OF HEALTH SCIENCE BENUE STATE UNIVERSITY IN PERSPECTIVE

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Abstract

A survey investigating technologies as determinants for information service delivery, was carried out in October 2019 at the College of Health Science, Benue State University. The purpose was to identify technologies in use for information service delivery in the medical library; determine the competencies of medical librarian and library staff in the use of the modern technologies and identify challenges associated with technologies as determinants for information service delivery. This study applied descriptive survey methods to a population of 15 inclusive of a medical librarian and other professional staff. Instruments for the study were an observation check list which had about 24 technological items and a structured questionnaire titled "Modern Technologies as Determinants for Information Service Delivery" (MOTDISD) which captured demographic details of medical librarian and other staff of the medical library. Fourteen were returned valid for data analysis representing a return rate of 93%. The data collected were analyzed using descriptive statistics (Mean and standard deviation). We found that: Benue State Medical Library to some extent has a few forms of modern technologies for health information service delivery. The challenges were inadequacies in modern technologies, inadequate Information and Communication Technology (ICT) infrastructures and inadequate training on use of ICT for the medical library staff. Recommendations were provision of adequate number of modern technologies for easy accessibility, improvement in networking area radius that will enhance access and retrieval of information; and training and retraining of the medical library personnel for optimum information service delivery.

Keywords: Modern Technologies, Determinants, Information, Service Delivery and College of Health Sciences

Introduction

The emergence of modern technologies for information service delivery in medical libraries is seen as undergoing a transformation in the areas such as mode of service deliveries to the team of medical students and users of medical libraries. Application of modern technologies is championed by the advancement of use of Information and Communication Technologies (ICTs) which invariably cut across

computing systems, multimedia technologies as well as other allied electronic systems which are used as determinants to effectively disseminate health information services to users of medical libraries. Ikolo&Nongo, (2021) describe the gap in medical knowledge acquisition by medical librarians and recommend the need to train staff of medical libraries through affordable on-the-job training.

According to Zakari and Nongo (2016), the roles of medical college librarian in dissemination of information are inevitably tied to the objectives of its parent institution. In the same vein, Adekunle, Omoba and Tella (2007) revealed that, training and knowledge are the *sine qua non* of a positive attitude toward ICT. In this era, when new technologies are introduced almost daily, it is essential for librarians to keep up with ICT developments.

Benue State University Medical College Library was provided for under the establishment of the Law regulating Statutes of Colleges of Medicine in Nigeria. This medical library is a specialized type of library, which is designated to serve consultants, medical students, lecturers, technologists and the College of Health Sciences community. There are precisely about eight (8) other faculty and departmental libraries servicing staff and students in the various faculties within the university. The modern technologies used in medical libraries in this era of 21st century are seen holistically as support or aid to educational, economic, and political development within the confines of medical education and the establishment of medical libraries are to meet health information needs for the purpose of teaching, learning and research (BSU College Status 2015).
Modern Technologies.

The era of information society and information landscape has progressively evolved (Onah, Igu and Akinlolu (2021), while tracing the digital evolution of libraries. It is becoming a misnomer in the 21st century for medical libraries to operate in the traditional mode without any form of ICT accoutrements which has become the determinants for disseminating information services effectively.

Therefore, modern technologies should, and would, display large bibliographic databases as well as public access and retrieval systems which form part of any contemporary medical library. According to Anyaoku (2014), the most essential requirement for medical college library is E-Collections, E-Library and medical resources websites. These electronic information resources could be accessed by either computers or other devices. For example, 3D printers, cloud computing, Internet of Things, (IoT)s book delivery robots and Smart devices. This study adopted the Technology Acceptance Model (TAM) 2 & 3 by Venkatesh 2003.

The TAM is an information system theory that models how users come to accept and use a technology. The medical librarian and the staff of the medical

library would require expertise in use of modern technology to accelerate the easy dissemination of health information resources to the increasing users of the library. Importantly, we must show relevance in using the trends of technology for posterity even when the shelves are gone. The relevance of this theory is that, the librarians' who are the service providers decision to reject or to accept and embrace the trending technology for sharing information resources is basically dependent on their skills, competencies and expertise in its use. A librarian assigned to the medical library maximally facilitates access, plays a critical distinctive and dynamic role ensuring easy computer-held information resources to users and satisfying the needs of the medical students, (Akidi and Osedo, 2021). Figure 1 is the diagram showing its core determinants of user behaviour.

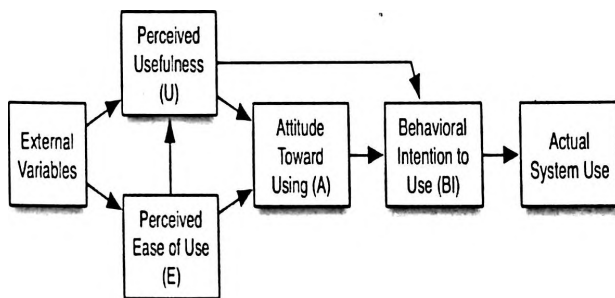


Figure 1: Technology Acceptance Model 2 & 3: Venkatesh 2003 showing the core determinants of user behaviour

Determinants for information resources service delivery

This study is looking at the level of competency in use of technologies as determinants for effective medical service information delivery. The level of technology advancement necessity has made libraries to undergo technological transformation hence the dawn to electronic information era. Therefore, Benue State Medical librarians therefore, require good digital knowledge, skills and competencies to function in medical library within the purview of technological infrastructure and its paraphernalia (Akidi and Osedo 2021). Ultimately, competencies are a basis for skill standards that specify the level of knowledge, skills, and abilities required for success in the workplace as well as potential measurement criteria for assessing capacity to perform a task (Umar 2021).

According to Ugbah, (2022) happiness can also help to shape service

quality outcomes, productivity, and even performance. However, our focus in this research is the ability of the medical library staff to present the best global information service delivery devoid of unprofessional behaviour or lack of attendance to information service delivery required by the medical library users.

Furthermore, internalization of technology competencies amongst medical library staff is pertinent. They must go an extra mile to develop and acquire knowledge through attendance at conferences, workshops, or seminars in areas of formal or informal training or education on ICT and its related programmes such as library networking connectivity, intranet, extranet, library cybersecurity digital savvy on both hardware and software technological skills. (Nongo, 2021).

Medical information sources are in many formats for easy access and retrieval. The information and communication technology resources will include Internet access, computer networks which includes local area network (LAN) Metropolitan Area Network (MAN) and Wide Area Network (WAN) and other related services. ICT resources are instructional resources which are consulted in medical college library for medical information service delivery (Nongo, 2020)

Modern technologies may be a determinant factor for information service delivery in modern medical libraries. The implication been that information organization, management, storage, search and retrieval have also changed with the advent of modern technologies. This is meant to ease access to, and management of information resources to meet the needs of the growing number of medical students, consultants and researchers. In essence, all the available information resources now exist in other forms and formats besides the traditional print media. Unagha and Unegbu (2015) describe how exploring, accessing, processing and utilization of information that are available in the “electronic environment” now requires the deployment of technologies such as; 3D printers, (IoT)s smart phones, book delivery robots, cloud computing and other tools used significantly for medical library services. It is also pertinent to note that these modern technologies have changed the perception of medical libraries patrons towards expecting perfect information service delivery.

Statement of the problem

Benue State University College of Health Science (CHS) has a medical library which is located close to the students' hostels on the college campus. It has a seating capacity which could accommodate about 80-100 medical students inclusive among those using the e-library space. The College of Health Science admission ratio has increased due to the growing demand from its neighbouring States; to the North axis is Nasarawa States, Jos Plateau States and to the East is Enugu and West Kogi States while the South is Taraba State. Due to the rise in

population, there is need to incorporate the use of current trend of technologies to serve the growing information needs of the millennials enrolled to study medicine and other basic medical sciences as well as the staff who would need to upgrade and re-train to meet the growing medical information demands. Effective health information delivery requires the services of a medical librarian with modern technology savvy who could efficiently deliver services via the many formats or sources of health information. That there remains a gap between expectations and reality as well as between functional and non-utilized available modern technologies is indeed the focus of this study.

Objectives of the study

I carried out the following objectives;

- i. To identify modern technologies in the medical library.
- ii. To determine ICT competency level of the medical library staff and the medical librarian.
- iii. To identify challenges in incorporating modern technologies into the medical library services.

Methods

The study adopted a descriptive survey of a population of 15 comprising medical librarian and the other professional staff of medical library. Instruments for the study; an observation check list and questionnaire titled "Modern Technologies as Determinants for Information Service Delivery" (MOTDISD), were distributed physically by the researchers. This data comprises of information used earlier in 2019. Fourteen valid questionnaires were returned for data analysis representing a return rate of 93%. The data collected were analyzed using descriptive statistics of mean (x) and standard deviation (SD). The objectives were analyzed based on challenges being incurred or experienced in incorporating modern technologies into the library services performed in medical library in Benue State College of Health Science.

Findings

I found that, there are more functional modern technologies in the CHS medical library at an average rate of 30% while the non-functional modern technologies are as low as 20% being the first objective of this study. While in the second objective of this study, which is the competency level in use of technologies by the medical librarian, shows a higher level at 54% than the other staffers of the medical library which is lower at 46%. This finding corroborates with Akidi and Osedo 2021; study, which recommended good digital knowledge skills and competencies to function in medical library. Competency skills in the use of

modern technologies are drivers for blended librarianship practice and that projects effective service delivery in medical library. It implies that medical library staff should endeavour to further learn and relearn through attendance of workshops and conferences to acquire modern training and develop themselves for effect library service delivery.

Figure 2: Challenges by barrier

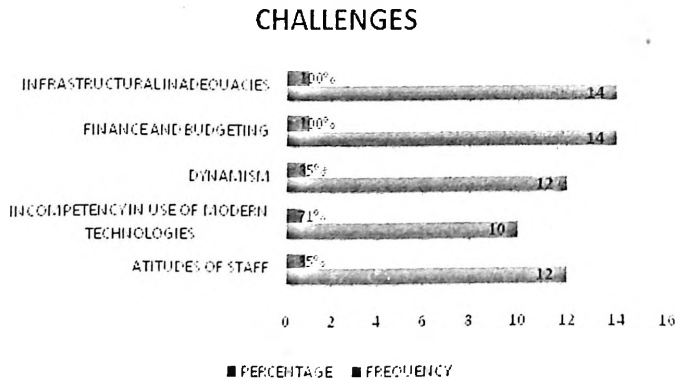


Fig 2 represents the challenges encountered in the utilization of modern technologies in the medical library of the CHS. It shows that the highest challenges are; finance and infrastructural inadequacies at 14 (100%) respectively. The competency level is at 10 (71%) which implies that most of the staff have one form of technology skill. However, the dynamism in modern technologies is at a high rate of 85% which implies a challenge signified in the attitudes of the staff who may require training in the application of these modern technologies for effective service delivery. This supports the assertions of Adekunle, Omoba and Tella (2007) which affirms that, training and knowledge are the *sine qua non* of a positive attitude toward ICT. In this era, when new technologies are introduced almost daily, it is essential for librarians to keep up with ICT developments.

Discussion

The results of the findings as shown in figure 2 above revealed that about 30% of modern technologies that are functional. This finding agrees with Anyaoku (2014) who asserted that most modern technologies in college of medicine are among others; e-collections, PC computers, stand alone computers, 3D printers,

Hinari (also known as Research4Life) databases, smart devices etc. College of Health Sciences subscribes, to data bases inclusive of Hinari, and other health sciences databases, it has acquired standalone computers and a good fraction of these computers are functional. The study further revealed that, medical librarian and medical library staff competency in use of modern technologies is necessary to meet the millennials health information requirement for academic purposes in the medical college. This assertion is also in agreement with Onah, Igu and Akinlolu (2021) which states that, this era of information society and information landscape has progressively evolved. It is a misnomer in the 21st century for medical libraries to operate in the traditional mode without any form of ICT accoutrements which has become the determinants for disseminating information services effectively. The study revealed major challenges such as; financial and infrastructural inadequacies in the use of modern technologies which have been the determinants for effective health information delivery.

Challenges

The digital age has produced challenges for both medical college libraries and staff in colleges of health sciences; the sheer volume of information available in e-books, databases, and other digital materials has spurred innovation in the systemic organization, management and distribution of medical library resources both in print and e-copies to respective sections of the medical library. Below are some of the challenges in using technologies as determinants to effective service delivery; techno-phobia, lack of computer application skills, traditional librarians mindset on technologies, negative perception of digital world or literacy to mention just a few. These challenges calls for a total a total revamp in attitudinal shifts from negativism to positivism of embracing modern technologies. This spurs the need for an embedded librarian serving in the medical library. According to Abba, Manjack and Ya'u (2022) an embedded librarian is one who is integrated into an online class for a period of time who also supports the students in their research processes. An embedded librarian also explores health Information websites due to digital revolution. The challenge herewith is the ability to explore those available different search strategies to fill or bridge the gaps of users who are in search of the facets of health information resources. Another factor is incompetency of staff or lack of technical know-how of modern technologies. Most library staff have challenges in operating modern technologies effectively and efficiently which is a great threat to delivery of the information services. Particularly, the dynamism of these modern technologies is a major factor that breeds incompetency of use or operation. It is paramount for a medical librarian to have exposure to modern technologies thereby indulge on self

sponsorship to workshops and conferences to gain current knowledge trends in use of modern technology and makes her versatile in equipping herself with the necessary skills not only in librarianship but also garnering experience in simple or advance searches and knowledge of other alternative methods to search databases on health websites which possess the skills to uploading information or activation of the Institutional open educational resources for CHS Medical Library.

Finance and budgeting is a major infrastructure factor which if not considered from the onset, thwarts the plans and progress of delivering health information services in the college of health sciences medical library. This study, suggests that a proposal be presented to the college management to include in her capital project, library budget and the necessity to release funds to finance purchase of modern technologies.

Recommendation

- i. Provision of adequate number of modern technologies for easy accessibility by a good number of users of the medical library in the college.
- ii. Improvement in radius of Internet connectivity networking that will enhance access and retrieval of information by students of the institution.
- iii. Medical library staff require training and retraining in the use of modern technologies for effective service delivery and versatility in use and competency level.
- iv. Improve funding to the CHS by way of increasing approval, autonomy of budgeting/funding and implementation.

Conclusion

Modern technologies are evolving in this era of 21st century, Benue State College of Health Sciences library should thrive and move with the trends of modern technologies to meet best global practices. This study concludes by reiterating the need to revamp in technological infrastructures as well as offer capacity building training exercise for the medical librarian and her staff to acquire skills in this era of innovative technologies to be able to access and retrieve information effectively using modern technologies for positive and successful delivery of information in whatever formats they may appear for the benefit of the user community.

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