

The Use of E-journals by Health Researchers: A Case Study of the Nigerian Institute of Medical Research (NIMR)

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ABSTRACT

This study investigated the use of e-journals by health researchers in the Nigerian Institute of Medical Research (NIMR). A descriptive survey method was adopted for the study and a questionnaire was used for data collection. The study population was comprised of fifty-four (54) respondents who are health researchers in the institute. The data collected were presented and analyzed using tables, frequency distribution, simple percentages, and charts. The result of the study revealed that all the respondents are aware of the availability of e-journals and attest to making use of them. The study revealed that electronic journals were mostly used for the purpose of conducting research work and the PDF format was preferred for downloading e-journals. However, it was observed that low Internet connectivity and intermittent electricity supply constitute a major obstacle to the use of e-journals. The study, therefore, recommended that the institute's management invest more resources on network connectivity, particularly its bandwidth, and ensure reliable power supply.

Keywords: Awareness, e-journals, health, researchers, Nigeria

Open Access

Accepted date: June 1, 2017
Received date: April 12, 2017

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1. INTRODUCTION

Journals have a long history in academic and scholarly works not because they serve as the universal means of scholarly communication but as a major means of disseminating current, relevant, and reliable research findings. They are most likely the first to be consulted by scientists or scholars while carrying out research (Omekwu & Atinmo, 1998). This is because journals are perhaps one of the most current vehicles of new ideas, knowledge, and breakthroughs in scientific development. As primary sources of information, they are popular with researchers and scholars who are eager to know contemporary trends in their areas of research interest (Mohammed, 2008).

With the coming of the Internet there is a paradigm shift from the use of printed journals to electronic journals. James (1992), cited in Curran (2002) stated that “the first electronic journals of any kind appeared in the late 1980s and since they preceded both the widespread use of hypertext formats or development of the World Wide Web, simple text-only formats were used.” According to Bhatt and Kumar (2011), an electronic journal is a serial containing research papers, review articles, scholarly communications, issued periodically in electronic form, through the use of computers. Malemia (2014), cited in Tenopir et al. (2003) described the trend of electronic journals as an “evolutionary process” and there has been a gradual increase in the use of electronic journals. They have therefore become an important information format as they are published, distributed, and accessed electronically. To further buttress this point, Navjyoti and Vasishtha (2007) supported this view by saying that e-journals have revolutionized the information seeking activity of researchers, as information is no longer confined within the four walls of a physical building called a library but is virtually omnipresent in the form of e-journals. Hence, health researchers and scholars can remotely access them even from the comfort of their homes, offices, and labs once they are connected to the Internet.

The e-journal has now become major source of meeting the information needs of health researchers, because they require information sources that are easily accessible, relevant, reliable, accurate, and timely which will result to good clinical practice, effectiveness in their job performance, making new innovations, and discoveries of new knowledge, as well as increases

in research output which should be able to guide the process of services rendered: The steps as well as actions taken. One of the unique qualities of e-journals in medical profession as posited by Curran (2002) is that peer review, though cumbersome, is a time-tested, highly regarded process for closely scrutinizing new medical information to assure the medical community that measures have been taken to ensure that the information is valid, of high quality, and medically relevant, bearing in mind that, through electronic journals, health researchers and academics can more easily access important information on recent developments in their field than in the printed format. In addition, the e-journal brings together a world of intellectual scholarship in a particular discipline together, consequently setting a unique standard for teaching, learning, and providing a platform for resource sharing. Open access to e-journal medical information sources has provided the opportunities and platforms for researchers and health workers to engage in the sharing of knowledge for the development of their profession and society at large as they can use each other’s sources, procedures, methods, clinical data, images, and animations. E-journals are ready and reliable channels that scientists and scholars use in communicating their research findings. Without any doubt, they play an important role among health researchers by maintaining community standards on how research and scholarship are being conducted.

Health researchers need information to be able to discharge their duties: Information that is classified as relevant, accurate, and prompt in meeting their requests on a daily basis. This is because their professional needs require information sources that are easily available and trustworthy. Hence the use of e-journals among health researchers becomes imperative. It is against this background that this study intends to investigate the use of e-journals among health researchers in the Nigerian Institute of Medical Research whose primary role is to promote national health and development, through proper dissemination of the results of health research.

2. BACKGROUND

The Nigerian Institute of Medical Research (NIMR) is the foremost research institute in the country. The institute is saddled with the responsibility of conducting

research into infectious and non-infectious diseases in the country. It was established in 1920 with the arrival of a medical team, under the auspices of the Rockefeller Foundation Yellow Fever Commission to the West Coast of Africa. In 1925, another team from the West African Yellow Fever Commission arrived in Lagos to join the team from the Rockefeller Foundation and the research facilities at the centre were expanded. The research centre was named the West African Council for Medical Research in 1954 and metamorphosed into the Medical Research Council of Nigeria in 1960. Through the Research Institute Establishment of the National Science and Technology Act of 1977, the Medical Research Council of Nigeria was renamed the National Institute of Medical Research. The name was further changed in 1993 to the Nigerian Institute of Medical Research. It was transferred as a parastatal under the supervision of the Federal Ministry of Science and technology to the Federal Ministry of Health. The institute has two outstations in New Bussa: Niger State and Maiduguri in Borno State (NIMR Annual Report, 2012).

3. LITERATURE REVIEW

The review of related literature shows that there have been various previous studies conducted on the use of e-journals among different health professionals and academicians that are worth examination in this study. In a study on how medical faculty members use scholarly journals, Tenopir, King, and Bush (2004) found that medical faculty read more journal articles as compared to other scientists. Like other scientists, medical faculty value journal articles and rely on them to do their various jobs. As to knowing whether electronic or prints journals are easily accessible, Sathe, Guise, and Grady (2002) conducted a pilot study at the Vanderbilt University Medical Center (VUMC) and found that users considered electronic journals easier to access and search than print journals. However, Tenopir, King, and Bush (2004) revealed that the medical faculty still rely more on print forms of journals rather than their electronic counterparts, stressing that print journals had higher quality text and figures.

The study of Singh and Gill (2012) investigated the use of e-journals by medical professionals in the Council of Medical Research (ICMR) libraries in Delhi.

The study found that a majority of respondents were aware about the availability of e-journals. It was also observed that a majority of the respondents were using e-journals for purposes of their research work, current information, and for writing articles. In the same vein, Islam, Alam, and Sultana (2011) explored the access and usage of electronic journals in Dhaka University Library (DUL); the results indicated that electronic journals are mostly used for research needs, education, and current information. Because the faculty members are involved in research, they need current, up to date published e-resources on a daily and weekly basis. E-journals are not being popularly used by the students due to insufficient numbers of PCs. More so, many of them do not know how to find the links to e-journals, coupled with a lack of awareness about the services among the users.

Given the amount of information available in the electronic environment, searching for relevant information on the web/electronic environment is often a herculean and frustrating task for both causal and experienced users (Holsher & Strube, 2000). Researchers use a different range of approaches to locate e-journals with the most popular being freely available via search engines. Applying an effective search strategy will retrieve relevant and potentially useful information. Electronic information resources users need to be familiar with the strategies involved during searching processes so as to retrieve desired information without wasting much time. Shukal and Mishra (2011) studied the use of e-resources by research scholars of the institute of Technology, Banaras Hindu, University India. The articles revealed that in most cases research scholars preferred the use of keywords as their search strategy while others prefer subject, author, date of publication, journal title, title of article, and abstract. The skills and strategies applied by individuals, however, may be conditional for information retrieval. In order to successfully find useful information in the electronic environment, users need to consider the usage of their search strategies to generate better information retrieval.

A study of pharmaceutical library users by Chetan (2012) revealed that they search different types of e-journals. A majority of the respondents search e-journals in PubMed, some search e-journals in Google, while others users search e-journals in the Science Direct database and EBSCO database. Only a few

users search MD Consult databases. Various reasons make researchers and academicians embrace the use of electronic journal above the printed format. Electronic journals provide ease of access, convenience of use, and easy retrieval, and can be easily manipulated and saved for future use. More so they are available in full text document format. A number of studies have identified barriers encountered by users when using e-journals; the main barriers to accessing e-journals include: journal subscriptions, computer interfaces, downloading, poor Internet connection, poor searching skills, lack of knowledge about the links to e-journals, and lack of training and orientation programs (Brown, Lund, & Walton 2007; Islam, Alam, & Sultana 2011).

4. OBJECTIVE OF THE STUDY

The main objective of this study is to know the usage of electronic journals among health researchers in the Nigeria Institute of Medical Research. The specific objectives are:

- To find out the level of awareness and extent of use of electronic journal in NIMR;
- To find out the purpose of using e-journals;
- To find out the frequency of usage of e-journals;
- To discover basic search strategies for accessing electronic journals;
- To discover the most used format for using e-journal articles; and
- To ascertain the challenges faced by the users while accessing e-journals.

5. SIGNIFICANCE OF THE STUDY

This study investigated the use of e-journals among health researchers in the Nigerian Institute of Medical Research. Since this type of study has not been conducted in the institute before, it has helped to ascertain the use of e-journals among the respondents and also help the library to know the needs of its users for better service delivery. More so, it would add to the existing body of knowledge particularly on the use of electronic information resources for the benefit of researchers and information providers.

6. RESEARCH METHODOLOGY

The research design used for this study is a descriptive survey method; this was used because of its known ability to collect a large amount of data from a sizeable population in a highly economical way. It provides information on which to base or test decisions and it tries to explain why a certain situation exists. The studied population is comprised of health professionals in the institute, namely: medical doctors, research scientists, sociologists, pharmacists, laboratory scientists, nurses, and other allied health professionals. A self-administered questionnaire was used to collect data from fifty-four (54) respondents who are health researchers in the institute. The questionnaires were distributed to the study sample between July and August 2016 for collecting data. The collected data were tabulated and analyzed using simple percentages, frequency distribution, tables, and charts.

7. ETHICAL APPROVAL

Approval for this study was obtained from the Institutional Review Board of the Nigerian Institute of Medical Research (IRB/16/325). Each respondent's consent was obtained in writing before completing the questionnaire.

8. RESULTS

According to data collected from the respondents Table 1 shows that 30 (55.6%) were female; while 24 (44.4%) respondents were male, indicating that the females numbered more than the males.

Table 2 reveals the awareness level of respondents regarding use of e-journals. It shows that all the 54 (100%) respondents responded positively that they are aware of the availability and are using e-journals.

Table 3 shows that a majority of the respondents (77.8%) are using e-journals for the purpose of information for conducting research work, 66.7% for reference information, 64.8% for specific health related information, 61.1% for updating medical knowledge/practice, 16.7% for patient cases, and 11.1% for other purposes.

Table 1. Frequency Distribution of Respondents by Gender

Gender	Frequency (n)	Percentage (%)
Male	24	44.4
Female	30	55.6
Total	54	100

Table 2. Awareness of e-journals

Awareness	Frequency (n=54)	Percentage (%)
Yes	54	100
No	0	-
Total	54	100

Table 3. Purposes of using e-journals

Purposes of using e-journals	Frequency (n=54)	Percentage (%)
Information for conducting research work	42	77.8
Patient case	9	16.7
Reference information	36	66.7
Specific health related information	35	64.8
Update medical knowledge/practice	33	61.1
Others	6	11.1

Figure 1 reveals that 44.4%, which constitutes the majority of the respondents, preferred electronic journals and 13% of users want to read from print journals, while 42.6% of users want to access both print as well as electronic forms.

Figure 2 reveals that 25.9% of users access e-journals daily, 24.1% weekly, 18.5% monthly, 16.7% occasionally, and 14.8% severally, respectively.

Table 4 shows the location from where the respondents access e-journals. It shows that a majority (30, 55.6%) access e-journals from their residence, 50%

from the Office / workplace, 9.3% in the institute's library, and 5.6% access from a cybercafé. It shows that the majority of the respondents depend on their personal IT equipment to access the Internet from the comfort of their homes. The implication of this finding is that information is no longer static or confined within the four walls of a physical building like the library. It can be accessed from wherever once the source or medium of access is connected to the Internet.

The respondents were asked to indicate their preference for format of electronic journals. Table 5 results revealed

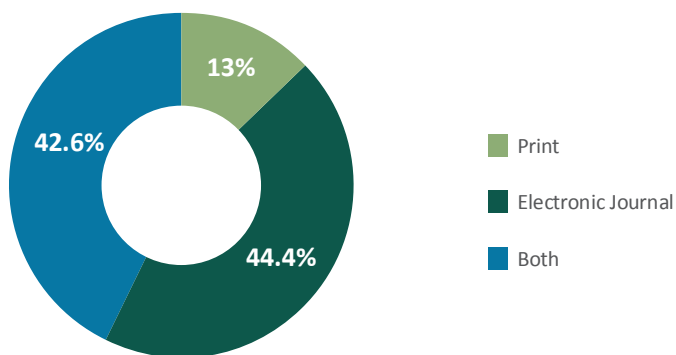


Fig. 1 Preference between electronic and printed journals

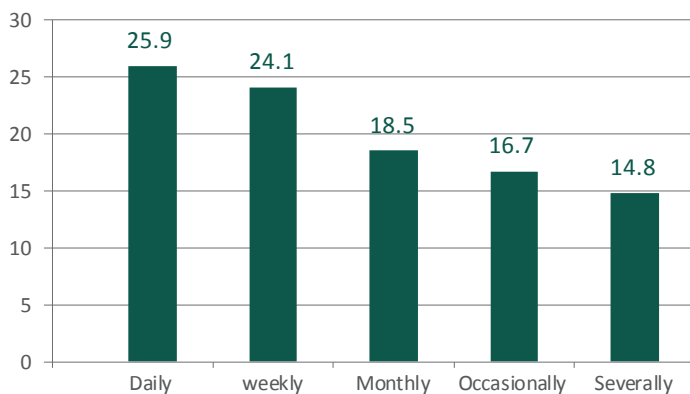


Fig. 2 Frequency of e-journal usage

Table 4. Place for Accessibility of e-journals

Place for accessibility of e-journals	Frequency (n=54)	Percentage (%)
Library	5	9.3
Office/Workplace	27	50
Cybercafé	3	5.6
Residence	30	55.6

that a majority of the respondents (85.2%) preferred PDF format, while only 14.8% want HTML format.

Table 6 reveals that e-journals from PubMed (66.7%) were mostly being used by the respondents, followed by African Journals Online (51.9%), Hinari (42.6%), Others (29.6%), Cochrane Library (16.7%), Bio-one (7.4%), and EBSCO (3.7%). This implies that the increase in awareness to open access scientific and medical journals has paved the way for usage of electronic journal articles among many users.

Since the methods of search strategies vary from person to person, the respondents were asked to express their opinions on specific uses of various search options. Table 7 reflected the type of search strategies applied by the respondents while conducting their search. 75.9% responded to using keyword(s) of their need, 61.1% use subject, 51.9% attest to typing all the questions/queries, 42.6% author, 20.4% of respondents

use Uniform Resources Locators (URLs), and 7.4% used other strategies.

Table 8 shows that a majority (74.1%) of the respondents complained of the poor/slow Internet connectivity, 59.3% of problems of subscription, 42.6% of intermittent electricity supply, and 29.6% of reading from a computer screen and inconvenience in using different formats, respectively.

9. DISCUSSIONS

The results revealed that all the respondents in this study which constitute medical and health researchers are aware of the availability of e-journals and are using them for one purpose or the other. These purposes include: conducting research work, patient case, getting reference information, and getting specific health relat-

Table 5. Preferred Format for e-journals

Preferred format for E-journals	Frequency (n=54)	Percentage (%)
PDF	46	85.2
HTML	8	14.8
Total	54	100

Table 6. Sources Used to Access e-journals

Sources used to access electronic journals	Frequency (n=54)	Percentage (%)
African Journals Online	28	51.9
Bio-one	4	7.4
Cochrane Library	9	16.7
EBSCO	2	3.7
Hinari	23	42.6
PubMed	36	66.7
Others	16	29.6

Table 7. Basic Search Strategies

Basic Search Strategies	Frequency (n=54)	Percentage (%)
I use keyword(s) of my need	41	75.9
Subject	33	61.1
I type all my questions/queries term at once	28	51.9
Author	23	42.6
I use Uniform Resources Locator (URL)	11	20.4
Others	4	7.4

Table 8. Challenges Faced When Using Electronic Journals

Types of Challenges Faced	Frequency (n=54)	Percentage (%)
Incomplete issues or absence of back issues	8	14.8
Reading from computer screen	16	29.6
Inconvenience in using different formats	16	29.6
Poor/slow Internet connectivity	40	74.1
Intermittent electricity	23	42.6
Problem of Subscription	32	59.3
Inadequate searching skills	3	5.6

ed information, which are all in line with the institute mandate of conducting research into infectious and non-infectious disease in Nigeria. This corroborated the investigations of Singh and Gill (2012) where a majority of their respondents were aware about the availability of e-journals.

From the analysis, it was also found that most of these researchers use e-journals on a daily basis. A large number of respondents use PubMed and the Ajol Online database as a prominent source to access e-journal articles. This could be attributed to the fact that the PubMed database is popular among health professionals and contains various articles that are easily accessible in the open access scientific medical journals, while Ajol contains local journal articles that

were mostly carried out in Africa. Results also show that a majority of the respondents attested to accessing e-journals from locations other than the library, like offices/workplaces, residences, and cafes. This study further substantiated the convenience and borderless nature of e-resources irrespective of the location (Navjyoti & Vasishta, 2007).

On the use of search strategies employed by the respondents during the search for e-journal articles, the findings of this analysis show that more than half of the respondents use keywords of their search, while others type their question/queries terms at once, uniform resource locator (URL), Subject, or Author. The use of search techniques and strategies aims at helping the user retrieve relevant and quality information. The

findings indicated that the respondents have a degree of familiarity with search options and used multiple search strategies. The implication of this finding is that knowledge of different search strategies can provide easier and alternative means of retrieving electronic resources. More so, maximum use of these strategies can help to avoid frustration while looking for relevant information.

On the format of e-journals, PDF format is the most preferred choice of electronic journal as compared with HTML format. This validates with the finding by Islam, Alam, and Sultana (2011). This study also revealed that a majority of the respondents preferred e-journals, and a good number preferred a combination of print and e-journals. This shows that some researchers still hold printed resources in high esteem as put by Tenopir, King, and Bush (2004), stressing that medical faculty still rely on print forms of journals because they have higher quality text and figures. Nevertheless, the majority now preferred electronic journals.

Finally, it was also observed that the use of e-journals is not without some challenges, such as poor/slow Internet connectivity and poor electricity supply, which constitute a major obstacle to use of e-journals. The fact that a majority of the respondents attested to accessing e-journals from locations other than the library and a good number of them attributed problems encountered through problems of subscriptions is an indication that the library lacks relevant electronic journals that could attract them to the library.

10. CONCLUSION

The purpose of the study was to investigate the usage of electronic journals among health researchers in the Nigeria Institute of Medical Research. From the foregoing, the study demonstrated clearly that all of the respondents are aware of e-journals and their usage is increasingly growing among health researchers due to availability and ease of use. The study further established that participants used e-journals for different purposes. These purposes include: conducting research work, patient cases, getting reference information, and getting specific health related information which they source from different online database such as PubMed and Ajol. This study has also presented that PDF for-

mat is the most preferred choice of electronic journal. Unfortunately the findings identified such issues as poor/slow Internet connectivity and poor electricity supply, which constitute a major constraint to use of e-journals.

Recommendations

Therefore, based on the above findings the following are recommended:

- In order to solve the problem of poor/slow Internet connectivity that affects the use of e-journals, the institute management should invest more in Internet connectivity by upgrading and improving the network, particularly its bandwidth, in order to enhance researchers' access to the e-journals in their respective offices and the library. In the same vein, provision of reliable power supplies should be provided at every point where the e-journal is accessed.
- Since the researchers still prefer both print and e-journal formats, the institute should strive to maintain a hybrid collection of journals.
- The institute management needs to substantially increase the number of e-journals and e-databases subscribed to in order to cover several subjects' areas of the researchers.

REFERENCES

- Bhatt, R. K., & Kumar, A. (2011). E-journals: Paving the way for dynamic scholarship. 8th International CALIBER – 2011, Goa University, March 2-4. Retrieved from <http://ir.inflibnet.ac.in/bitstream/1944/1615/1/25.pdf>.
- Brown, J., Lund, P., & Walton, G. (2007). Use of e-journals by academic staff and researchers at Loughborough University. Retrieved from https://www.lboro.ac.uk/media/wwwlboroacuk/content/library/downloads/surveyresults/e_journal_survey.pdf
- Chetan, C. K. (2012). User awareness and use of e-journal among pharmaceutical companies library in Ahmedabad: A survey. *International Journal of Library and Information Studies*, 2(4), 44.
- Curran, C. (2002). The medical journal meets the Inter-

- net. *First Monday*, 7(6).
- Hölscher, C., & Strube, G. (2000). Web search behavior of Internet experts and newbies. *Computer Networks*, 33, 337-346.
- Islam, S., Alam, S., & Sultana, S. (2011). Access and usage of electronic journals in Dhaka University Library (DUL). *Journal of the Bangladesh Association of Young Researchers (JBAYR)*, 1(2), 30-47.
- Malemia, L. (2014). The use of electronic journal articles by academics at Mzuzu University, Malawi. *Library Philosophy and Practice (e-journal)*, Paper 1097.
- Mohammed, A. (2008). The development of academic journals in institutions of higher learning in Kano State, Nigeria. *Library Philosophy and Practice (e-journal)*, Paper 210.
- Navjyoti, D., & Vasishta, S. (2007). E-journals: Problem or panacea for higher education? Retrieved from http://eprints.rclis.org/13476/1/ejournals_Problem_or_Panacea_for_Higher_Education.pdf
- Nazim, M., & Saraf, S. (2006). Information searching habits of Internet users: A users' study of Banaras Hindu University. *Annals of Library and Information Studies*, 53, 213-218.
- Nigerian Institute of Medical Research (2012). NIMR Annual Report.
- Omekwu, C. O., & Atinmo, M. O. (1998). Author and journal citation patterns of agricultural communication researchers at the University of Ibadan, Nigeria. *Afri. J. Library Archival & Information Science*, 8(2), 105-112.
- Pakenham-Walsh, N., & Bukachi, F. (2009). Information needs of health care workers in developing countries: A literature review with a focus on Africa. *Human Resources for Health Journal*, 7(30).
- Sathe, N. A., Guise, N. B., & Grady, J. L. (2002). Print versus electronic journals: A preliminary investigation into the effect of journal format on research processes. *J Med Libr Assoc*, 90(2), 235-243.
- Sharma, C. (2009). Use and impact of e-resources at Guru Gobind Singh Indraprastha University (India): A case. *Electronic Journal of Academic and Special Librarianship*, 10(1).
- Shukal, P., & Mishra, R. (2011). Use of e-resources by research scholars of institute of technology, Banaras Hindu, University India. *Journal of Arts, Science & Commerce*, 2(2), 184-194.
- Singh, K. P., & Gill, M. S. (2012). Use of e-Journals by medical professionals: A study of Indian Council of Medical Research (ICMR) libraries in Delhi. *Library Philosophy and Practice, (e-journal)*, Paper 810.
- Tenopir, C., King, D., & Bush, A. (2004). Medical faculty's use of print and electronic journals: Changes over time and comparison with other Scientists. *J Med LibrAssoc*, 92(2), 233-241.