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A STUDY ON USE OF ELECTRONIC RESOURCES IN INDIAN COUNCIL OF MEDICAL RESEARCH (ICMR) INSTITUTES OF DELHI

Sabah Jan*, Abdul Majid Baba**

**PhD Research Scholar, Department of Library & Information Science, University of Kashmir, Jammu & Kashmir, India. Email: sabakozger@gmail.com*

***Head of Department, Department of Library & Information Science, University of Kashmir & University Librarian, Allama Iqbal Library, University of Kashmir.*

E-mail: abmbaba@kashmiruniversity.ac.in; abmbaba1@rediffmail.com

Abstract *The Indian Council of Medical Research (ICMR) is an apex body in India for the formulation, coordination and promotion of biomedical research. It is one of oldest medical research bodies around the world. The massive developments in ICT (information communication technology) in libraries have paved the way for libraries to provide electronic resources to users. It has changed the framework of the library services. In the same scenario Indian Council of Medical Research (ICMR) libraries provide various types of electronic resources to its users. The present study is an attempt to analyse the use of the electronic resources by the users in various ICMR institutions of Delhi.*

Keywords: *ICMR, Use of Electronic Resources*

Introduction

Electronic resources in health science are used to manage information across the full continuum of health science. Health information technology & electronic resources are impacting the health science procedures, institutional operations, quality of health science and costs. Health science turned to computers and electronic resources due to the overwhelming growth of information and the need for faster and more affective storage and access to information. The volume and complexity of medical knowledge long ago exceeded what humans could handle with traditional tools. In the twenty-first century, health science cannot be separated from information technology and hence the electronic resources. Quality research and quality healthcare start with the knowledge and skills of human beings, but technology, especially information technology enhances and augments that human knowledge & skills and makes the knowledge available electronically to entire health science community. Electronic resources have moved practically into every arena of health science including clinics, laboratories, hospitals, administrative offices, research institutes and health insurance companies. Electronic resources and technology allows rapid access and transfer of health information and global sharing of scarce resources. Electronic resources provide health science information at distances through telemedicine to manage healthcare facilities, perform research, educate patients and their families and access supportive resources including information from global databases. The health science libraries play a vital role in providing the electronic resources to users and applying new information technologies to healthcare. In the same set-up Indian Council of Medical Research (ICMR)libraries provide access to various types of electronic resources to health science professionals and play an important role in disseminating health science information across India.

ICMR Profile

ICMR was set up by Government of India in 1911 as IRFA (Indian Research Fund Association) with the definite objective of sponsoring and coordinating medical research in the country. It was renamed in 1949 as the Indian Council of Medical Research (ICMR) with considerably expanded scope of functions. The ICMR is funded by the Government of India through the Department of Health Research, Ministry of Health & Family Welfare.

Literature Review

In recent time several studies have been carried out in the health science libraries taking into consideration the emergence of electronic resources and new information technology applications in health sciences. Some pioneer efforts are enlisted below:

Nasser Al-Suqri (2014) revealed that the faculty at Sultan Qaboos University (SQU) in the Sultanate of Oman perceived that electronic books were easier to use. Males tended to have higher levels of usage than females. Older participants tended to use electronic books less & prefer paper copies of books. Faculty in the social sciences and the life & health sciences tended to have lower levels of usage behaviour than those in the arts and humanities, business or law or physical sciences and engineering. Those for whom Arabic was their first language had higher levels of usage behaviour than those with another first language. Tyagi (2014) in his studyreveals that the majority (78%) of users at pharmacopoeial libraries in India perceived the ability to use computer for using electronic information resources. It was further analysed that all the scientists belonging to the pharmacopoeial libraries use electronic information resources to address issues relating to drug indexes and compendia, monographs, drugs obtained through online databases, e-journals and the Internet sources-especially polices by regulatory agencies, contacts, drug promotional literature and standards.

Egberongbe (2011) reveals that use of the electronic resources (e-resources) is very common among lecturers and research scholars of University of Lagos. The study indicates that majority of teachers and research scholars are dependent on e-resources to get desired and relevant information. However it was revealed that practical uses of e-resources are not up to the worth in comparison to investments made in acquiring these resources. It is evident from the analysis that the availability of e-resources on the campus is almost sufficient for all the existing disciplines but that the infrastructure to use the resources is not adequate and is actually hindering the ability to meet the requirements of users. Haridasan and Khan (2009) revealed in their work that the social scientists pursuing research in National Social Science Documentation Centre(NASSDOC) are aware of the e-resources(such as e-books, e-journals, e-encyclopaedias, e-theses, CD-ROM databases, e-mail, Internet, and OPAC). Large numbers of research scholars and faculty members use these e-resources for their research work. Faculty members and research scholars use library databases, OPACs and bibliographies, for locating e-information.Many faculty members strongly agreed with the necessity for computer and internet literacy to access information. A majority of users were satisfied with the e-resources available at the NASSDOC library. Asemi and Riyahiniya (2007) reveal that major percentage of students in Isfahan University of Medical Sciences in Iran are aware of digital resources and 69 percent of them have used the same. It was found that a total of 64 percent are aware of the "CLBJ Database"(Central Library Books and Journals Database), while over half of them made use of it. Students had less use of offline databases, attributed to factors such as infrequent periodic orientation and lack of education on use of offline databases and fewer terminals connected to the server in the Central Library. Users faced the problems like low speed connectivity and shortage of hardware facilities. Overall, nearly 90 percent of the students felt that the available digital resources do meet the information needs of users.Khudair and Bawden (2007) in their study reveal that the healthcare libraries in Saudi Arabia are well used and appreciated by their users & library staff is generally satisfied with their work. However they also identified the problems & issues in use of information communication technologies, digital resources and lack of proactive information services, education, training & continuing professional development for health library work limited strategic planning and policy for these services.Franklin and Plum(2002) revealed the usage patterns of networked electronic services at four geographically disparate academichealth science libraries in the USA between 1999 and 2002.The analysis was made in terms of demographic difference between the in house library users and remote library users.The study demonstrated that remote usage of networked electronic services significantly exceeds in-library usage of those same resources. In varying degrees, remote usage was larger in volume than all other library services combined as well. It was found that the users employing networked electronic resources for instruction/education/non-sponsored research are more likely to be in the library than sponsored research patient care, or all other active users. Library patrons using electronic resources for sponsored research are likely to be in the campus but not in the library. Further it was found that funded researchers in particular are heavy remote users of networked electronic resources. The authors further discovered that the distribution of usage of electronic services and print journals show a similar pattern, although it seems that researchers are depending more on electronic resources than traditional print journals. It was concluded that the faculty/staff were not visiting the library in personas often as in past and that funded researchers were heavy remote users of networked electronic resources.Robbins(1993) in his study based on "use of MEDLINE by health sciences faculty at University of Minnesota" revealed that majority of the faculty members(including dentistry, nursing, medicine, pharmacy and public health) at University of Minnesota used MEDLINE, primarily for research(80.5%) and slightly over one-third(36.2%) usually conducted their own searches, while one-third used the mediated search service at Bio-Medical library(33.5%), slightly less than one-third (29.0%) who had others do their searching. It was revealed in the

study that most of the faculty members usually searched MEDLINE only once or twice a month (40.8%), although about one-third searched it once or twice a week (32.4%). About a quarter of these searched MEDLINE less than once a month (24.0%) who were in the age group of 29 to 70 years with an average age of 47. The findings of the study revealed that most of the faculty members use MEDLINE and younger faculty members make more use of it than their counterparts.

Purpose of the Study

Advancements in digital technology and increasing application of this technology in libraries have brought in a revolutionary paradigm shift in libraries and have paved the way for libraries to provide electronic resources to users. Electronic resources in the modern world form the backbone of any library. In the same scenario Indian Council of Medical Research (ICMR) provides various types of electronic resources to its users. The present study is an attempt to analyse the use of these electronic resources by the users in various ICMR institutions of Delhi.

Scope

The scope of the study is confined to the Indian Council of Medical Research (ICMR) institutes in Delhi region. They include

1. ICMR Head Quarters(ICMR HQS)
2. National Institute of pathology(NIOP)
3. National Institute of Malarial Research(NIMR)
4. National Institute of Medical Statistics(NIMS)

NIMS Library being a non-functional is excluded from the study.

Methodology

A survey method was adopted for gathering of the required data necessary for the completion of the study. The main research instrument used in the study was a questionnaire that was used to collect data from the users including researchers, research associates, scientists, doctors, faculty and students from various ICMR institutes in Delhi. The data collected from the users was tabulated and analysed by means of simple statistical analysis.

Sampling

Simple statistical random sampling was used for selection of the sample to be studied. The users on the basis of their work roles were first divided into strata and selected from the ICMR institutes in Delhi region. Samples were drawn from the three ICMR institutes by using the sample size determination formula. The users (health science professionals) were first divided into six strata on the basis of their work roles. The six strata include faculty members, research scholars, students, supporting staff, administrative staff, and outsiders. Samples were drawn from each stratum of the six health science research institutes by using the sample determination formula

Sample size (n)=25% of N where N=Total Population i.e. 25% of 168=42

Then among those 25% different strata's of users including faculty members/research scholars/students/supporting staff/administrative staff /outsiders were chosen randomly.

Objectives of the Study

The objectives of the study are enlisted below:

1. To study the usage of electronic resources in ICMR institutes in Delhi.
2. To study the purpose of users for using electronic resources.
3. To study the frequency with which users are using electronic resources.
4. To study the various factors hindering the usage of electronic resources**.**
5. To study the problems faced by the users while using electronic-resources**.**

Analysis and Discussion

Chart 1

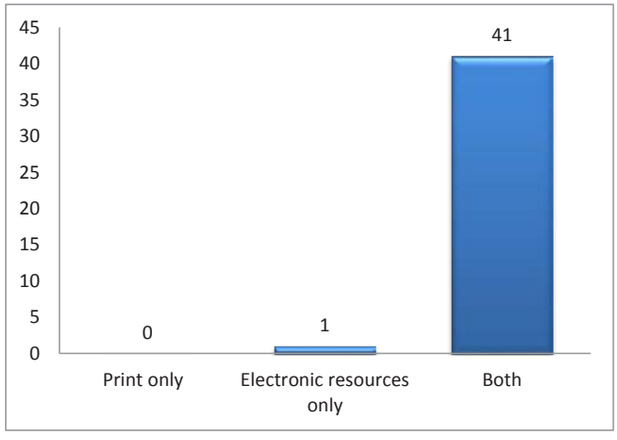

Fig. 1: Types of Information Resources used

The chart shown in Fig. 1 reveals that 41 users out of 42 users make use of both electronic as well as print resources

where as one user is such who makes use of electronic resources only. As total sample population is 42. It can be further interpreted from the chart that all the users are aware about the electronic resources.

Chart 2

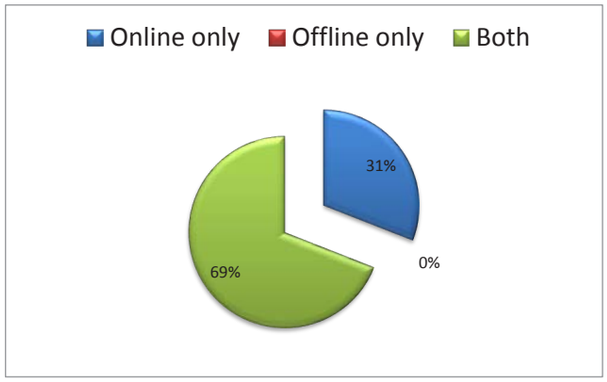

Fig. 2: Mode of access to Electronic resources (E-resources)

The chart in Fig. 2 reveals that 69% of users prefer both online and offline mode of access to e-resources where as 31% of the users prefer only online mode of access to e-resources.

Chart 3

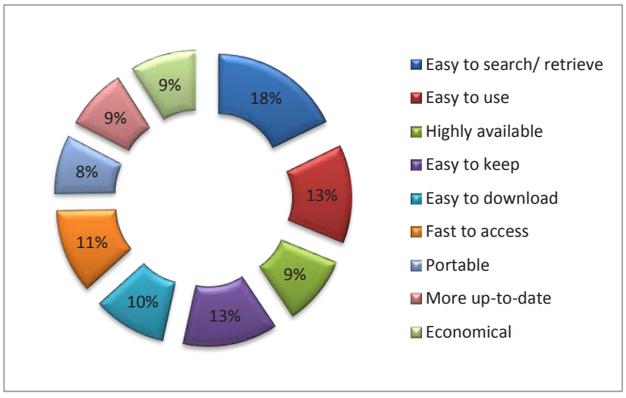

Fig. 3: Preference of E-Resources over Print Resources

The chart shown in Fig. 3 reveals that 18% of the users prefer e-resources over print resources because they find e-resources easy to search as the most preferred reason over the rest of the reasons.13%of users each prefer e-resources over print resources because they find e-resources easy to use & easy to keep, respectively as the most preferred reason over the rest of the reasons.11% & 10% of the users prefer e-resources over print resources because they find e-resources fast to access & easy to download, respectively as the most preferred reason over the rest of the reasons. 9 % of the users each prefer e-resources over print resources because they find e-resources highly available, more up-to-date, & economical, respectively as the most preferred reason over the rest of the reasons, whereas 8% of the users prefer e-resources over print resources because they consider e-resources portable as the most preferred reason over the rest of the reasons.

Chart 4

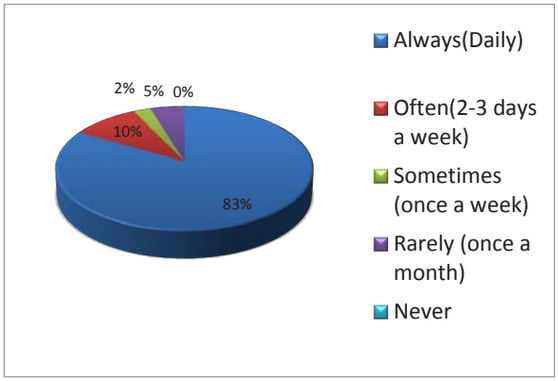

Fig. 4: Frequency of Using Electronic Resources

The chart shown in Fig. 4 reveals that 83% of the users use e-resources daily whereas 10% of the users use e-resources 2-3 days a week followed by 5% and 2% of the users who make use of e-resources once in a month and once in a week respectively.

Chart 5

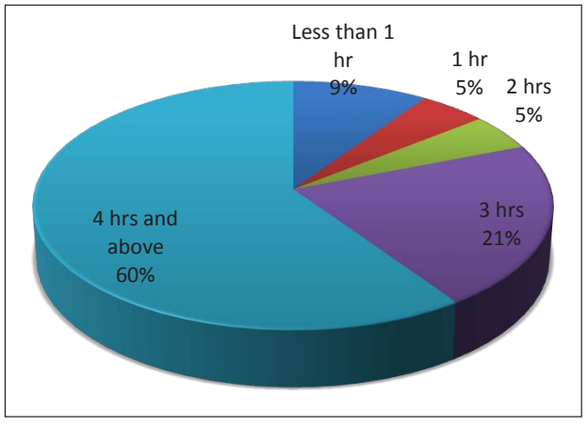

Fig. 5: Time Period for using Electronic Resources

Fig. 5 reveals that 60% of the users make use of e-resources for 4 hours and above daily followed by 21% of the users who make use of the e-resources for 3 hrs daily whereas it was analysed that 9% of the users use e-resources for less than 1 hr daily, followed by 5 % of the users each who make use of e-resources for 2hrs and 1 hr daily, respectively.

Chart 6

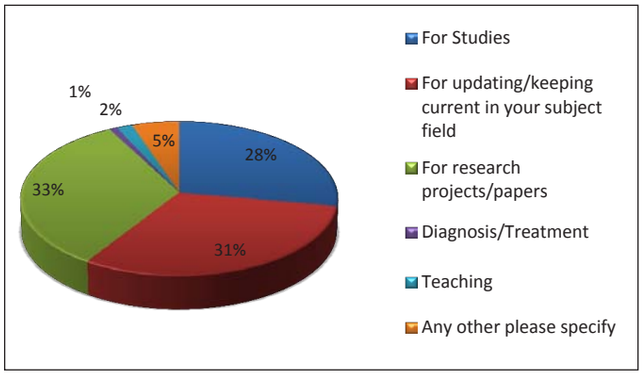

Fig. 6: Purpose of Using Electronic Resources

Fig. 6 reveals that 33% of the users make use of e-resources for their research projects/papers followed by 31% & 28% of the users who use e-resources for the purpose of updating/ keeping current in their subject field & studies respectively whereas 5% of the users use e-resources for purposes other than enlisted above. Lastly 2 & 1 % of the users make use of e-resources for teaching & diagnosis/treatment respectively.

Chart 7

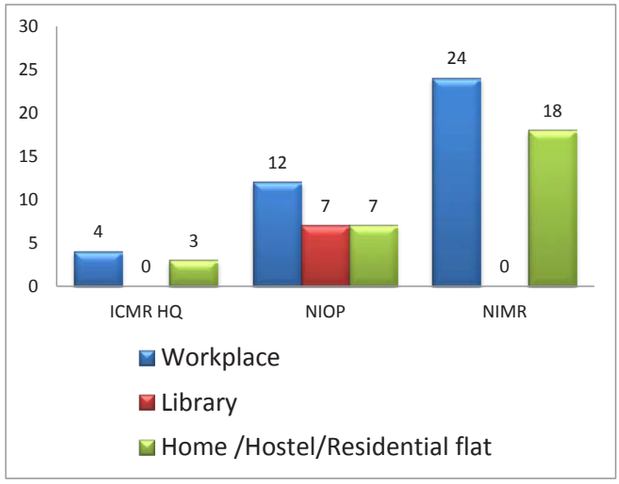

Fig. 7: Place of Accessing Electronic Resources

The chart in Fig. 7 reveals that most of the users (24, 12 & 4) in NIMR, NIOP & ICMR HQ respectively access electronic resources at workplace whereas 18, 7 & 3 users in NIMR, NIOP & ICMR HQ access e-resources from home/hostel/ residential flat. As evident from the chart, NIOP is the only institute where users (7) access the electronic resources from the library.

Chart 8

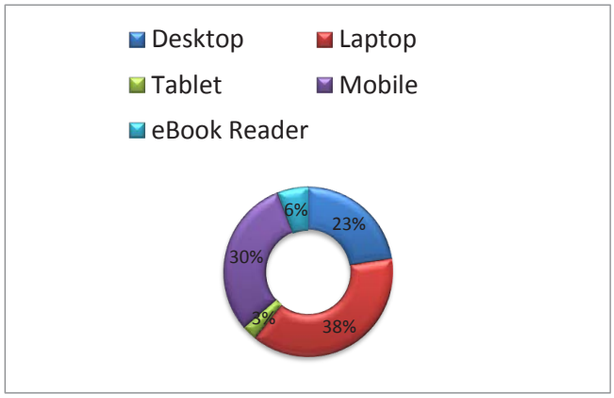

Fig. 8: Devices Used for Accessing Electronic Resources

Fig.8 reveals that 38% of the users use laptops to access e-resources followed by 30% and 23% of the users who make use of mobile phones and desktops respectively to access e-resources whereas e-book readers and tablets are used by only 6% and 5% of the users respectively.

Chart 9

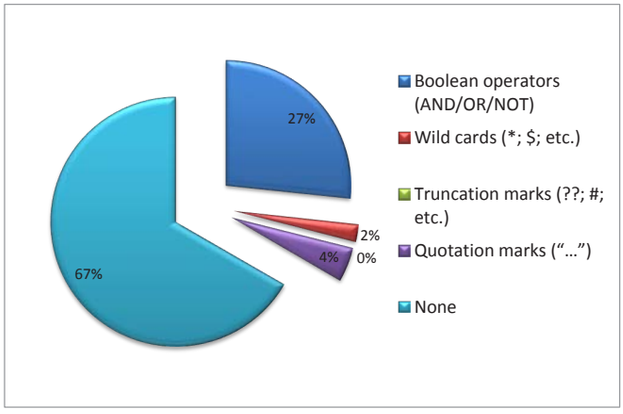

Fig. 9: Search Techniques Used for Searching Electronic Resources

The chart reveals that 67% of the users do not use any search technique for searching e-resources followed by 27% of the users who make use of Boolean operators for searching e-resources whereas very small segment of users (4% and 2%) make use of quotation marks and wild cards respectively. Lastly none of the user makes use of truncation mark search technique.

Chart 10

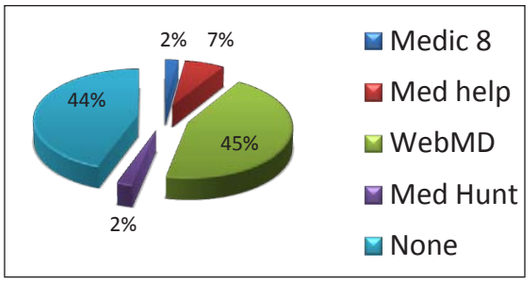

Fig. 10: Health Science Search Engines used

It is evident from the chart that 45% of the users use WebMD followed by 44% of the users who do not use any health science search engine whereas very small segment (7%, 2% and 2%) of the users use Med help, Medic 8, and Med Hunt respectively.

Chart 11

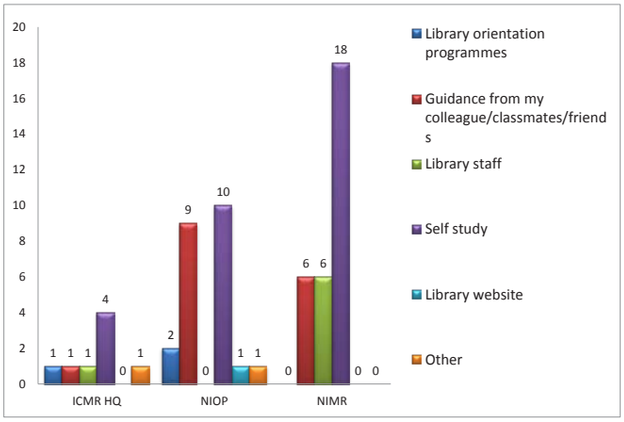

Fig. 11: Source of Awareness about E-resources

It is evident from the chart shown in Fig. 11 that 18, 10 & 4 users in NIMR, NIOP & ICMR HQ come to know about e-resources through self-study whereas 9 users in NIOP,6 in NIMR, and a single user in ICMR HQ said that they come to know about e-resources from their colleagues, classmates orfriends. The role of library staff in guiding the users in regard to e-resources is somewhat visible in NIMR, where 6 users are of the view that library staff guides those regarding e-resources and in ICMR HQ only a single user is of the view that he/she comes to know regarding e-resources through library staff whereas in NIOP the library staff does not play any role in guiding the users regarding e-resources.2 users from NIOP & 1 from ICMR HQ were of the view that they come to know regarding e-resources through library orientation programmes. Lastly library website method of e-resources awareness was witnessed by a single user in NIOP only.

Chart 12

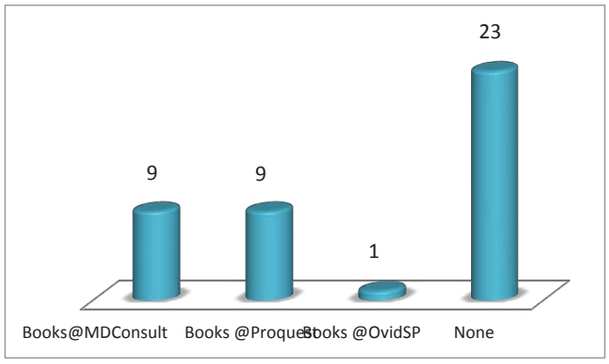

Fig. 12: E-book collection used

Fig. 12 reveals that 23users do not make use of any e-book collection whereas Books@MDConsult, Books@Proquest & are used by 9 users each, respectively and a single user was found to use Books@OvidSP.

Chart 13

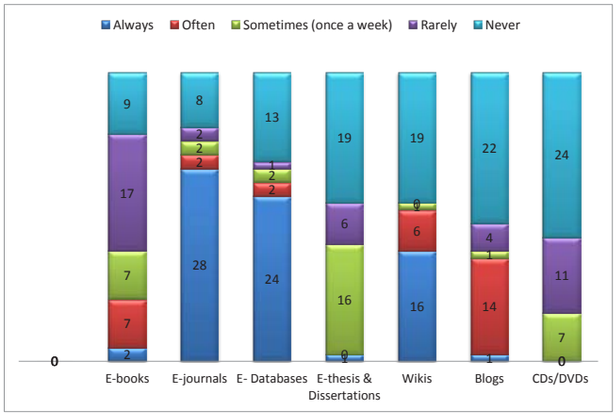

Fig. 13: Frequency of usage Types of E-resources

As it is evident from the chart that most of the users (28,24, and 16) always make use of e-journals, e-databases and wikis, respectively whereas 24,22,19,19,13,8, and 9 users said that they never use CDs/DVDs, blogs, wikis, e-thesis & dissertations, e-databases, e-journals, and e-books respectively. 14,6,2,2 and7 users said that they often (2-3 days a week) make use of blogs, wikis, e-databases, e-journals, and e-books respectively. 7,1,116,2,2 and 7 users said that they sometimes (once in a week) make use of CDs/DVDs, blogs, wikis, e-thesis and dissertations, e-databases, e-journals, & e-books respectively. Lastly 11,4,6,1,2 and 17 users said that they rarely(once a month) use CDs/DVDs, blogs, e-thesis & dissertations, e-databases, e-journals, and e-books respectively.

Chart 14

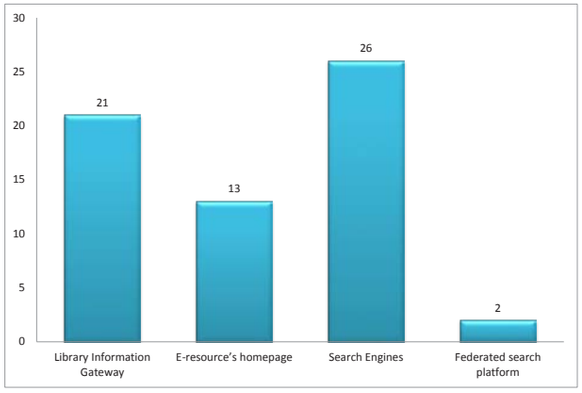

Fig. 14: Means of Searching E-resources

The chart reveals that 26 users search e-resources through search engines followed by 21,13 and2 users who search e-resources through library information gateway, e-resources homepage and federated search platforms, respectively.

Chart 15

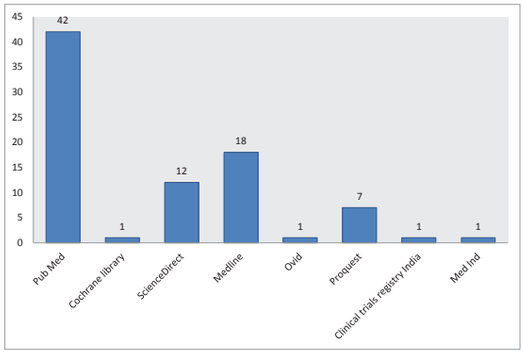

Fig. 15: Databases Used for Accessing E- resources

It is evident from the chart that all (42) users use Pub Med database whereas 18, 12 and 7 users said that they also make use of Medline, Science Direct and Proquest, respectively followed by 1, 1 and 1 user who make use of Ovid, Clinical trials registry India and MedInd, respectively.

Chart 16

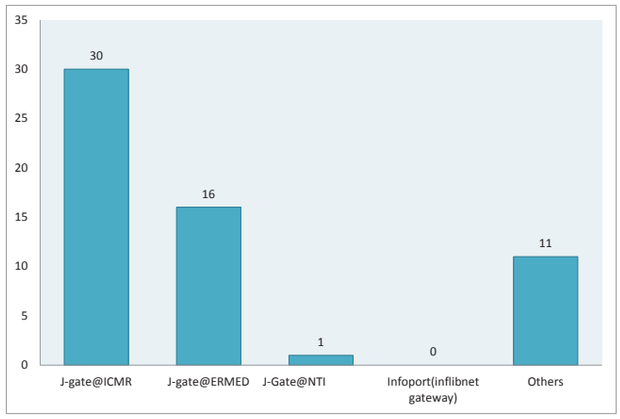

Fig. 16: Gateways Used for Accessing E-resources

The chart (Fig. 16) reveals that most of the users (30) use j-gate@ICMR to access e-journals whereas 16 users make use of j-gate@ERMED(electronic resources in medicine) to access e-journals. A single user said that he/she makes use ofj-gate@NTI to access e-journals. Lastly 11 users were such who made use of other gateways to access the e-journals. Infoportinflibnet gateway was not used by any user.

Chart 17

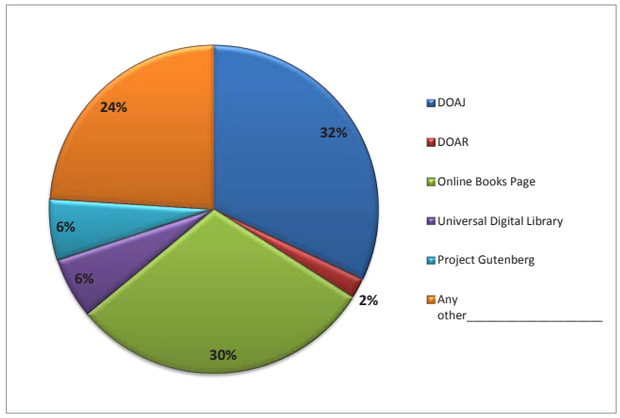

Fig. 17: Open Sources of Information Used

The chart reveals that 32% of the users use DOAJ(Directory of Open Access Journals) followed by 30%,6%, 6% and 2% of the users using online books page, universal digital library, project Gutenberg & DOAR (Directory of Open Access Repository) respectively whereas 24% of the users were such who made use of other open access sources of information.

Chart 18

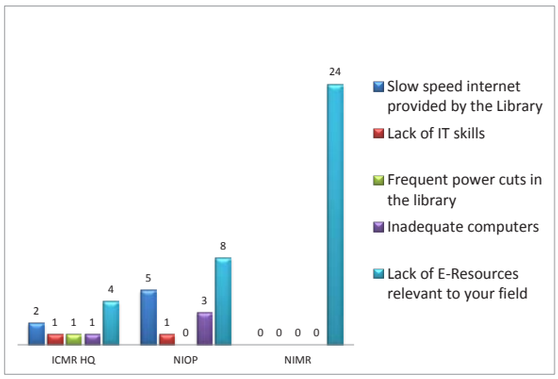

Fig. 18: Factors Hindering the Usage of E-resources

As clearly evident from the chart that the only concern of the users in NIMR is the lack of e-resources relevant to their field followed by 8 & 4 users in NIOP & ICMR HQ who also complain about the same. 5 in NIOP and 2 users in ICMR-HQ are of the view that slow speed internet provided by the library hinders them in using e-resources. A single user each from NIOP & ICMR HQ reported the lack of IT skills which hinders them in using e-resources. Lastly a single user from ICMR HQ reports the frequent power cuts in the library as the main reason hindering the use of e-resources.

Chart 19

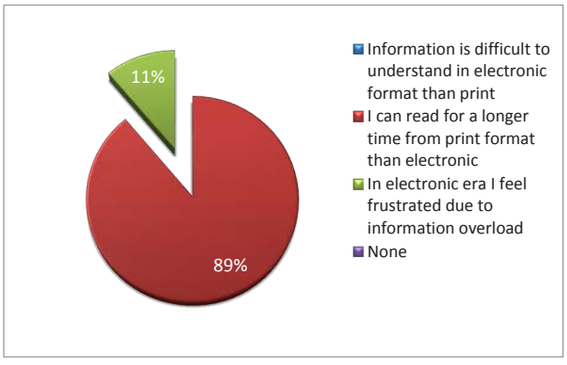

Fig. 19: Problems Faced While Using E-resources

It is evident from the chart (Fig. 19) that majority (89%) of the users said that they feel difficulty in using e-resources because they can read for a longer time from print format than electronic format whereas 11% of the users said that they feel frustrated due to information overload in electronic format.

Findings

The following are major findings of the study:

Awareness: The study revealed that all the respondents are aware about the availability of e-resources.

Types of information sources used: It was analysed that the majority of users use both print as well as electronic resources.

Mode of access: The study revealed that major percentage of the users (69%) prefer both online as well as offline mode of access to e-resources.

Frequency and time period: The study analysed that majority (83%) make use of e-resources daily & 60% of the users use these e-resources for 4 hrs and above. The study further revealed that mostly users always use e-journals, e-databases, and wikis whereas some of the users said that they never use CDs/DVDs, blogs, wikis, e-thesis &dissertations, e-databases, e-journals, and e-books.

Purpose of use: The study revealed that the users mainly make use of e-resources for the purpose of research, updating themselves in their subject field and studies.

Place of access: The study revealed that users mainly access the e-resources at their work place followed by the access to e-resources at home. A very few users access e-resources in their library.

Factors hindering the usage of e-resources: The study revealed that the lack of e-resources relevant to the subject field is the only concern of the users in NIMR which hinders them in using electronic resources. In NIOP & ICMR HQ, some users also complain about the lack of e-resources relevant to their field. Slow speed internet provided by the library is other revealed factor which hinders them in using e-resources.

Problems: The study revealed that majority 89% of the users face problems while using e-resources because they can read for a longer time from print format than electronic format whereas 11% of the users said that they feel frustrated due to information overload in electronic format.

Conclusion

The e-resources have become an integral part of the ICMR libraries. They have become an essential need of every user

in the modern world. E-resources have several advantages over the print counterparts. The present study reveals that electronic resources play a major role in information dissemination process among the users of ICMR libraries in Delhi region. The study concluded that the users of ICMR libraries use electronic resources for various academic purposes. However there are many loop holes on which ICMR libraries need to work so that the users can get the maximum benefit out of the e-resources.

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