

Usage of Electronic Information Resources in Homoeopathic Pharmacopoeia Laboratory (HPL), India

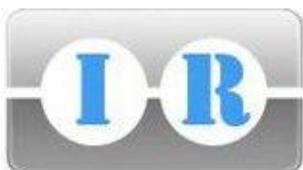
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Abstract

The study examine how scientists of Homoeopathic Pharmacopoeia Laboratory (HPL) use electronic information resources, whether print or electronic are read more, whether there is a pattern among types of users. The problem has been studied based on the information available in the open literature and a survey conducted. The methodology for the proposed study is "Survey Method" with the help of structured questionnaire. The result showed a growing interest in usage of electronic information resources among the Scientists of HPL. All the respondents belonging to the laboratory used EIS to consult drug indexes and compendia, to consult monographs, to consult drugs related online databases, to consult drugs related e-journals, to consult drug promotional literature and to consult standards. All the respondents stated that to a very high extent EIS has become a substitute for printed materials. These findings have implications for collection development, promotion of library resources, and end-user training.

Keywords: EIS, E-journals, online databases, CD-ROM, Pharmacopoeia, digital collection.



1. Introduction

Electronic services, offered by libraries, have dramatically changed scientist's usage patterns at scientific libraries of the country in recent years. Libraries' electronic services are available to in-house users when libraries are open, but are also available to authorized remote users outside the library (ARL, 2003)⁹. At the same time that electronic services are changing library usage patterns, scientific libraries are spending an increasing percentage of their collections budgets on electronic services. The impact of altered usage patterns and increasing expenditures by scientific libraries on electronic services has heightened interest among scientific libraries to measure electronic services usage.

To update professional knowledge pharmacopoeia scientists must have access to the information resources that contain the knowledge base of their profession. The Internet is an important information source for pharmacopoeia scientists offering immediate access to the most current pharmacopoeia, pharmaceuticals and drugs information. Web sites of professional, government, education and commercial organizations provide access to online journals, online databases, practice guidelines as well as information on professional development activities (Bennett

et.al, 2004; Gilmore et.al, 2008; Masters, 2008; Shanahan et.al, 2009)^{1,2,3,4}.

Homoeopathic Pharmacopoeia Laboratory (HPL) was established in 1975 under the Ministry of Health & Family Welfare, Govt. of India, as a quality monitoring apex body. It is situated at Central Govt. Offices Complex No. 1, Kamla Nehru Nagar, Ghaziabad. Its main functions are to set standards and testing of homoeopathic medicine at national level. The standard of homoeopathic medicines to be complied with for manufacture, sale or import is defined in Section 4A of Second Schedule of Drugs & Cosmetics Act. The laboratory is also recognized by the Department of Science & Technology, Govt. of India. Worked out standards are released by the Ministry of Health & Family Welfare in the form of Homoeopathic Pharmacopoeia of India (HPI). Eight volumes covering standards for 916 drugs and 159 finished products have already been published. Recommendatory standards on two hundred fifty seven drugs have also been released. In the years to come, it has to cover additional 1600 drugs (HPL, 2011)¹⁰.

The study library has experienced a tremendous shift in content from print to electronic. So far, no study exists to know the current practices regarding e-resource in HPL Library in India. The need felt that to know the same to study in depth on e-resource current practices with particular reference to HPL Library in Northern India.

2. Literature Review

A large number of earlier studies of usage pattern of electronic information resources have appeared in the last few years. Anjuwon, Grace A (2006)⁵ conducted survey of 172 physicians at the University

College hospital (UCH) Ibadan, Nigeria; completed a 31-item, anonymous, standardized questionnaire. The Epi-Info software was used for data analysis. The mean age of the respondents was 31.95 years (SD 4.94). Virtually all (98%) the respondents had used the Internet; 76% accessed it from cyber cafes. E-mail was the most commonly used Internet service (64%). Ninety percent of the respondents reported they had obtained information from the Internet for patient care; of this number, 76.2% had searched a database. The database most recently searched was MEDLINE/PubMed in 99% of cases. Only 7% of the respondents had ever searched the Cochrane Library. More than half (58.1%) perceived they had no confidence to download full-text articles from online sources such as the Health Inter network Access to Research Initiative (HINARI). Multiple barriers to increased use of the Internet were identified including poor availability of broadband (fast connection speed) Internet access, lack of information searching skills, cost of access and information overload.

Romanov, Kalle and Aarnio, Matti (2006)⁶ conducted survey to evaluate medical and dental students' utilization of electronic information resources. A web survey sent to 837 students (49.9% responded). Twenty-four per cent of medical students and nineteen per cent of dental students searched MEDLINE 2+ times/month for study purposes, and thirty two per cent and twenty-four per cent respectively for research. Full-text articles were used 2+ times/month by thirty-three per cent of medical and ten per cent of dental students. Twelve per cent of respondents never utilized either MEDLINE or full-text articles. In multivariate models, the information-searching skills among

students were significantly associated with use of MEDLINE and full-text articles. Gavani, Vahideh Zarea and Vangari Vishwa Mohan (2008)⁷ conducted survey. A structured questionnaire was used to collect data. The target population as comprised of physicians and specialists from government and private hospitals in Hyderabad, India. One hundred twenty-four responses were received. MS Excel and SPSS software were used for statistical analyses. The study revealed that physicians have positive attitudes toward EBMP. They also agree that EBMP is obligatory on the part of physicians - professionally, ethically, and legally. They indicated a high usage rate of print and electronic sources, which suggests that health science libraries should be equipped to support physicians in EBMP.

3. Objectives & Scope of the Study

The objectives of study are: -

- (i) To know the types of library services used by the scientists;
- (ii) To know the purpose of using electronic information resources;
- (iii) To identify the use of specific types of subjects and allied areas electronic information resources;
- (iv) To know the preference level of using e-resources;
- (v) To know the usage patterns of electronic information resources;
- (vi) To measure the benefit of electronic information resources; and
- (vii) To know the user's perception of e-resources in meeting their information needs.

3.1 Scope of the Study

The present study deals with user awareness and usage of e-resources in HPL of India. The geographical area is restricted

to HPL only. This can be extended over to the other organizations. Detailed analysis can be taken to see the impact of technology on libraries and usage. Finally investigator believes that studies are needed on ways to improve and encourage users to use maximum of electronic information resources. The results will help collection developers in designing suitable policy and assess the technical intricacies faced by the library staff in providing effective EIS services. It will also help in designing the efficient infrastructure requirements for managing journals in both the formats.

4. Research Methodology

The methodology for the proposed study is "Survey Method" with the help of structured questionnaire. A pilot study was conducted to streamline the user questionnaire in the study library. The collected data from questionnaires is analyzed with suitable statistical methods. The primary data collected from the study libraries through structured user questionnaire. The structured questionnaire was designed keeping in view of the stated objectives. Non-probability sampling specifically accidental and purposive technique was applied in the collection of primary data through the administration of questionnaire. A total number of 40 questionnaires were administered among the users of the Library & Information Centre of Homoeopathic Pharmacopoeia Laboratory (HPL) under study. Out of which 32 questionnaires were received back duly filled in. The sample respondents chosen for the study consists of 11 scientists, 12 scientists from GOI departments and 09 pharmacopoeia associates. The data collected were tabulated and analyzed. Statistical techniques of percentage of

respondents have been mainly used to

analyze the collective data.

5. Survey Results

5.1 Sample Population

The status of respondents which includes 34.38% scientists, 37.50%,

Scientists from GOI departments and 28.12% pharmacopoeia associates (see table 1).

| S.No | Status | Response | % |
|------|---------------------------------|----------|--------|
| 1 | Scientists | 11 | 34.38% |
| 2 | Scientists from GOI departments | 12 | 37.50% |
| 3 | Pharmacopoeia Associates | 09 | 28.12% |
| | Total | 32 | 100% |

Table 1: Sample Population

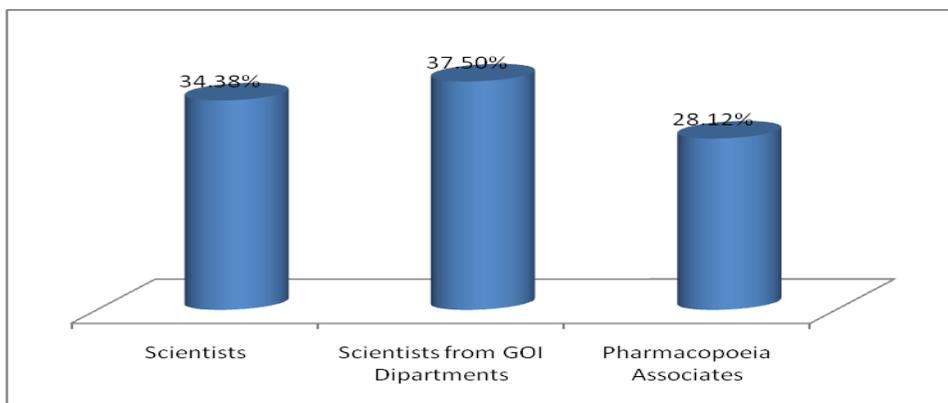


Fig. 1 Status of Respondents

5.2 Perceived level of computer literacy

According to their own assessment, a majority (68.75%) of the respondents stated that they are having “average skill” in the use of computers, (31.25%) of the respondents opined to have “above average

skill” in the use of computers. On the whole, respondents’ self-perceived ability to use the computer for electronic information sources is quite high (see table 2).

| Computer Literacy | | | |
|---------------------------------|------------|---------------|----------|
| Professional Status | Average | Above Average | Total |
| Scientists | 07(63.64%) | 04(36.36%) | 11(100%) |
| Scientists from GOI departments | 08(66.67%) | 04(33.33%) | 12(100%) |

| | | | |
|--------------------------|------------|------------|----------|
| Pharmacopoeia Associates | 07(77.78%) | 02(22.22%) | 09(100%) |
| Total | 22(68.75%) | 10(31.25%) | 32(100%) |

Table 2: Perceived level of computer literacy

5.3 Use of Library Services

The respondents were asked to mark the library services used at library & information centre. The services provided by Library of Homoeopathic Pharmacopoeia Laboratory (HPL) depicted in table 3. All

the respondents preferred accessing e-journals, online databases, internet facility, CD-ROM databases facility and Scan/Xerox/Printout facility provided by the library (see table 3).

| Library Services | Professional Status | | |
|----------------------|---------------------|---------------------------------|--------------------------|
| | Scientists | Scientists from GOI departments | Pharmacopoeia Associates |
| Lending Service | 05 (45.45%) | 0.0% | 0.0% |
| Reference Service | 02 (18.18%) | 01 (8.33%) | 0.0% |
| Internet Facility | 11 (100%) | 12 (100%) | 09 (100%) |
| Online Database | 11 (100%) | 12 (100%) | 09 (100%) |
| E-Journals | 11 (100%) | 12 (100%) | 09 (100%) |
| CD-ROM Database | 11 (100%) | 12 (100%) | 09 (100%) |
| Abstracting Service | 03 (27.27%) | 0.0% | 0.0% |
| Indexing Service | 02 (18.18%) | 0.0% | 0.0% |
| CAS | 02 (18.18%) | 0.0% | 0.0% |
| SDI | 02 (18.18%) | 0.0% | 0.0% |
| Audio-Video Facility | 01 (9.09%) | 0.0% | 0.0% |
| Scan/Xerox/Printout | 11 (100%) | 12 (100%) | 09 (100%) |

Table 3: Use of Library Services

5.4 Purpose of using electronic information resources

The respondents were asked to give reasons as to why they use electronic information resources but based on choices fixed by the respondents. Various professional purposes for which electronic information resources used were elicited from the respondents. Table 4 indicates the purpose of using the

electronic information resources. All the respondents belonging to the laboratory use EIS to consult drug indexes and compendia, to consult monographs, to consult drugs related Online Databases, to consult drugs related e-journals, to consult drug promotional literature and to consult standards (as depicted in table 4).

| Purpose | Professional Status | | |
|---|---------------------|---------------------------------|--------------------------|
| | Scientists | Scientists from GOI departments | Pharmacopoeia Associates |
| To consult drug indexes and compendia | 11 (100%) | 12 (100%) | 09 (100%) |
| To consult monographs | 11 (100%) | 12 (100%) | 09 (100%) |
| To consult drugs related Online Databases | 11 (100%) | 12 (100%) | 09 (100%) |
| To consult drugs related e-journals | 11 (100%) | 12 (100%) | 09 (100%) |
| To consult drug promotional literature | 11 (100%) | 12 (100%) | 09 (100%) |
| To consult standards | 11 (100%) | 12 (100%) | 09 (100%) |

Table 4: Purpose of using electronic information resources

5.5 Use of specific types of subjects and allied areas electronic information resources

In Homoeopathic Pharmacopoeia Laboratory (HPL), Library, the respondents use a variety of electronic information

resources. To ascertain various demands, the respondents were asked to state their subject interest in use of specific types of electronic information resources. Their responses are depicted in table 5. All the respondents browsed e-journals, online databases, e-monographs and standards (see table 5).

| EIS | Professional Status | | |
|-------------------|---------------------|---------------------------------|--------------------------|
| | Scientists | Scientists from GOI departments | Pharmacopoeia Associates |
| Topical web sites | 03 (27.27%) | 05 (41.67%) | 03 (33.33%) |

| | | | |
|------------------|----------------|----------------|----------------|
| e-Journals | 11 (100%) | 12 (100%) | 09 (100%) |
| Online databases | 11 (100%) | 12 (100%) | 09 (100%) |
| e-Monographs | 11 (100%) | 12 (100%) | 09 (100%) |
| e-Books | 03 (27.27%) | 05 (41.67%) | 03 (33.33%) |
| CD-ROM databases | 04 (36.36%) | 05 (41.67%) | 02 (22.22%) |
| Standards | 11 (100%) | 12 (100%) | 09 (100%) |

Table 5: Use of specific types of subjects and allied areas electronic information resources

5.6 Preference Level of using resources

Table 6 reveals that all the respondents preferred online version of EIS,

while (27.27%) Scientists, (41.67%) Scientists from GOI departments and (22.22%) pharmacopoeia associates preferred print version (see table 6).

| EIS | Professional Status | | |
|----------------|---------------------|---------------------------------|--------------------------|
| | Scientists | Scientists from GOI departments | Pharmacopoeia Associates |
| Print Version | 03 (27.27%) | 05 (41.67%) | 02 (22.22%) |
| Online Version | 11 (100%) | 12 (100%) | 09 (100%) |
| Both | 03 (27.27%) | 03 (25.00%) | 02 (22.22%) |

Table 6: Preference Level of using resources

5.7 Usage Patterns of electronic information resources

The respondents were asked to mark the use patterns of electronic information resources. All the respondents download the matter in storage device preferred pen drive

whereas only 56.25% users take print out (see table 7).

| Use Pattern | Response | % |
|----------------------------|----------|--------|
| Download in Storage Device | 32 | 100% |
| Take Print out | 18 | 56.25% |

Table 7: Usage patterns of electronic information resources

5.8 Benefit of Electronic Information Resources

Users perceive electronic information resources to hold many advantages. Some of the main benefits of using electronic information resources are

listed in table 8. From the analysis it is evident that an all the respondents stated that e-resources covering various disciplines, evidence-based research, collaboration with distance colleagues, access to comprehensive information and Time saving (see table 8).

| Nature of Benefits | Professional Status | | |
|--|---------------------|---------------------------------|--------------------------|
| | Scientists | Scientists from GOI departments | Pharmacopoeia Associates |
| E-resources covering various disciplines | 11 (100%) | 12 (100%) | 09 (100%) |
| Evidence-based research | 11 (100%) | 12 (100%) | 09 (100%) |
| Collaboration with distance colleagues | 11 (100%) | 12 (100%) | 09 (100%) |
| Access to comprehensive information | 11 (100%) | 12 (100%) | 09 (100%) |
| Time saving | 11 (100%) | 12 (100%) | 09 (100%) |

Table 8: Benefit of Electronic Information Resources

5.9 User's perception of e-resources as a replacement for print in meeting their information needs

Another question sought to ascertain the impact of all e-resources on the members in terms of the extent to which they were replacing printed media in satisfying their information needs. All the respondents stated that to a very high extent electronic resources have become a substitute for printed materials. While scientists (63.64%),

scientists from GOI departments (50.00%) and pharmacopoeia associates (55.56%) stated that printed materials are still the basic element in satisfying information needs, so to a small extent electronic information resources have become substitute for printed materials (as depicted in table 9).

| User's perception | Professional Status | | |
|---|---------------------|---------------------------------|--------------------------|
| | Scientists | Scientists from GOI departments | Pharmacopoeia Associates |
| Electronic information resources have become a substitute for printed sources to a very high extent | 11 (100%) | 12 (100%) | 09 (100%) |
| Electronic information resources have become a substitute for printed sources to a medium extent | 01 (9.09%) | 01 (8.33%) | 01 (11.11%) |
| Printed materials are still the basic element in satisfying information needs, so to a small extent electronic information resources have become substitute for printed materials | 07 (63.64%) | 06 (50.00%) | 05 (55.56%) |

Table 9: User's perception of e-resources as a replacement for print in meeting their information needs

5.10 Satisfaction level of access to electronic information resources

Respondents in this study were asked about the satisfaction with current state of

electronic information resources access in their library & information centre, which is a very important variable to investigate user behaviour. All the respondents were highly satisfied to access EIS (as depicted in table 10).

| Satisfaction Level | Professional Status | | |
|----------------------|---------------------|---------------------------------|--------------------------|
| | Scientists | Scientists from GOI departments | Pharmacopoeia Associates |
| Highly Satisfied | 11 (100%) | 12 (100%) | 09 (100%) |
| Satisfied | 0.0% | 0.0% | 0.0% |
| Moderately satisfied | 0.0% | 0.0% | 0.0% |
| Dissatisfied | 0.0% | 0.0% | 0.0% |

Table 10: Satisfaction level of access to electronic information resources

6. Findings

The study gave rise to the following major findings:

1. Majority (68.75%) of the respondents are having “average skill” in the use of computers, whereas (31.25%) of the respondents opined to have “above average skill” in the use of computers.
2. All the respondents (100%) preferred accessing e-journals, online databases, internet facility, CD-ROM databases facility and Scan/Xerox/Printout facility provided by the library.
3. All the respondents (100%) use EIS to consult drug indexes and compendia, to consult monographs, to consult drugs related online databases, to consult drugs related e-journals, to consult drug promotional literature and to consult standards.
4. All the respondents (100%) browsed e-journals, online databases, e-monographs and standards.
5. All the respondents (100%) preferred online version of EIS, while (27.27%) Scientists, (41.67%) Scientists from GOI departments and (22.22%) pharmacopoeia associates preferred print version.
6. All the respondents download the matter in storage device preferred pen drive whereas only 56.25% users take print out.
7. E-resources covering various disciplines, evidence-based research, collaboration with distance colleagues, access to comprehensive information and time saving are the benefits of EIS counted in survey.
8. All the respondents (100%) stated that to a very high extent electronic resources have become a substitute for printed materials. While scientists (63.64%), scientists from GOI departments (50.00%) and pharmacopoeia associates (55.56%) stated that printed materials are still the basic element in satisfying information needs,

7. Conclusion

Electronic information resources play an all-important role in scientific and technical activities. The work efficiency and productivity of scientists and the quality of work performed by them is affected significantly by the operation of the information system. Scientific and technical information has itself been recognized as a resource. In view of its role and importance as a resource, the issues relating to scientific and technical information are now finding a place of priority in the scientific and technological plans and programmes of several nations. Various scientific and technical libraries, documentation and information centres are being upgraded, improved and integrated to enhance their importance and role in the transfer of information. In this regard Homoeopathic Pharmacopoeia Laboratory (HPL) has upgraded and improved their Library & Information Centre at satisfaction level. HPL provides adequate budget every year for acquiring new resources and for the up gradation of library.

Pharmacopoeial Librarians should employ new information technologies and new approaches to better serve their scientists in new ways of acquiring information. Libraries should organise their services so that they bring their information resources closer to the busy scientists. These findings have implications for collection development, promotion of library resources, and end-user training.

8. Suggestions

There is no doubt that the internet has assumed the role of providing a medium of Scientific information and today's users can no longer depend only on conventional information resources to cope with the latest developments in their respective fields. The

internet can provide access to essentially unlimited resources of information in the field of Homoeopathic, pharmacy and pharmacology as in other disciplines. Although the Library & Information Centre at HPL is well equipped with the Information Communication Technology, but the following suggestions should be followed for further improvement:-

- i) The Library & Information Centre at HPL should be grown in planned manner and this required scientific planning and complete reorganization;
- ii) The electronic information resources as well as conventional resources at Library should be fully utilized;
- iii) Library need to introduce more extensive information and reference services; and
- iv) The librarian and staff may be provided with on-going assistance through compilation of manuals and handbooks in the use of electronic information resources, assistance vide E-Mail, personal assistance and accessing quality information.

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