CHAPTER I
CHAPTER - I

INTRODUCTION

We are living in an age of information explosion. Computer and other electronic resources has become indispensable tools in our society. The main function of a library is to provide information to the users. With the help of electronic resources the staff, students and the researchers can have access to the huge volume of information with speed and accuracy.

The internet provides a cheap and efficient means of communications. It is a boon to researchers where they can have access to information available throughout the universe with the help of online search. With the advent of digital revolution, communication has become easier and faster and decisions are made instantaneously. The present study is to highlight the current scenario of electronic resources available in the medical college libraries and usage of electronic resources by the clients of medical profession has been undertaken. Analyze the data with that of available materials in electronic form in selected medical college libraries in Tamilnadu.

The new information technology has created a new infrastructure for medical libraries and change the way they function and provide services. Most of the medical college libraries in India fully equipped with modern facilities, latest reference collections and fully qualified and experienced staff members.
HISTORY OF MEDICAL 'e' RESOURCES

Health science basically deals with the methods of diagnosis, prevention and curing of diseases. It also deals with the study of biochemical, biophysical and bio pathological basis of diseases as well as ecology and epidemiological of order to find the causal effects and improved ways of treatment. This creates a constant downpour of information that makes it difficult to search for specific information. The information system, professionals are drowning and floating in the tides of the ever-growing ocean of knowledge and information and are striving appropriate information. The advent of computers, multimedia and the advances in telecommunications has opened up new possibilities in debating with the problem arising from information deluge. Their technologies have created a new infrastructure for health science libraries and changed the way they function and provide services. The introduction of MEDLINE in 1971, followed by the gradual development of electronic publication of journals, for example, ADONIS, Online Journal of Current Clinical Trials etc.; the role of telemedicine in exchange of clinical information: the intrusion of internet and accessibility to large and interaction number of technical, scientific and biomedical resource and the extensive use of databases made available for use by medical researchers, clinicians and educator; and the e-mail facility through networks-all have a great impact on distribution of health science information. All these points suggest that potential for the clinical application of communication technologies is indeed great.
HEALTH SCIENCE INFORMATION SYSTEM IN INDIA

A State-of-the-Art

The term health science libraries connote a wide meaning. In India, the health science libraries can categorized as academic, biomedical research, administrative and hospital libraries. Though, in principle, they deal with health science information, the nature and operational functions of these libraries vary from one to another depending on the clientele they have to serve and their information requirements. Further, there is a National Library (NML, 1966) functioning as an apex body of medical libraries in the country. Thus the health science information system has facilitated dissemination of relevant literature and information to the medical community of the country.

A number of studies have been conducted as case studies and user studies to ascertain the functioning of these libraries/information centers. Significant contribution among them include PhD thesis also.

National Medical library, India (1979-80)\(^1\) made a survey of 1000 libraries of all systems of medicine of which 362 responded. The results reveal that half of them did not have trained manpower; 75 per cent of libraries did not entertain ILL requests; 81 per cent did not prepare any bibliographies; 68 per cent did answer even reference queries; only 36.3 per cent libraries offered CAS any only 15 per cent availed MEDLINE, while 68 per cent were not even aware of this service.
A cursory survey by Satpathy and Mukhopadyaya (1980) made of different types of medical libraries revealed that the condition of these libraries had not changed much and found that paucity of funds, inadequate staff, collections, etc., were common feature in most of the libraries. This pathetic situation has made the health science libraries passive in their functioning. Indeed the changing information environment expects the health science libraries to be proactive and accommodate the trends in information technology for housekeeping and retrieval. However the situation has not changed much in the next decade also as indicated in further studies.

R.P.Dixit (1988) conducted a survey on the use, collection, organization and serves of National Medical library (India). The results divulge that journals are the more preferred sources, and users are satisfied with the collection; ILL (48%) and MEDLINE search (48%) are more valued followed by documentation service (18%). Varalakshmi (1990) has conducted a user survey of medical college libraries of Andra Pradesh. The conclusions reveal that these libraries suffer from the paucity of funds, lack of adequate manpower, reading facilities services etc.; they are far behind they Medical council of India standards. A starting revelation is the absence of resources sharing activity; only 3 per cent have access to MEDLINE, while EX-MED and BIOSIS were never used. Hence the user are not fully satisfied with the existing provisions, services are not up to the standard and they need improvement in terms of faculty facilities and services, up to a level where they can function as active parts of the network.
The situation of health science research libraries is also not giving a healthy picture as the study of Solomon Raju (1997)\textsuperscript{6} on ICMR permanent research institutes indicates. He observed that the collections are by no means comprehensive, and periodical collections, supposed to be the backbone for research, and physical facilities are in no way comparable with norms and guidelines recommended by Medical council of India, National Medical library and Indian council of Medical Research. Another obvious finding is the absence of cooperation among these libraries.

User awareness and demand are the important factors for proper functioning of any library. But, a comparative study of Lalitha (1995)\textsuperscript{7} indicates that though the users have understood the complex nature of either their information needs or their information sources, there is lower level of awareness of the existence of a variety of information sources which lead to information incompetence.

Therefore, it could interpreted that the functioning of health science libraries in India is encountered with certain hiccup, which makes their performance below the level of standards. A conspicuous factor is the absence of resource sharing among the health science information systems to keep abreast of the current developments in the field and to provide global access to information at the national level through resource sharing and networking.
NETWORKING OF HEALTH SCIENCE LIBRARIES IN INDIA

Resource sharing and networking are inevitable for optimum utilisation of available resources; to enable timely, appropriate, updated dissemination of information; to reduce the cost in the operation of individual units by developing formats for sharing all labour intensive output; and for easy accessibility of knowledge for the management of library programmers.

Several models of outstanding networks for resource sharing have been developed in the discipline of medicine, starting with MEDLINE (1971). In India, efforts have been made from time to time in promoting the concept of resource sharing, but an organized approach has not evolved. The World Health Organisation-SEARO has initiated health literature, library and information services (HELLIS) network in 1979 with an aim to meet the information requirement of all kinds of medical organisation. NML (Delhi) was made a focal point for HELLIS networks India, but is not operational and not delivering the goods for reasons unknown.

Another notable attempt is by the Bibliographic Informatics Division of National Informatics Centre (NIC) which offers global access to medical scientists, practitioners, students and other dedicated health information centers in the country. In order to translate its aim into reality ICMR-NIC Centre for Biomedical Information was set up in 1986, which provides access to MEDLINE and other databases through NICNET to all health science professionals in the country.
User Awareness on Present Infrastructure in Biomedical Information and Networks', by University of Health Sciences, Andra pradesh in 1998. Though the workshop suggested the modalities to network the health science libraries functioning under the administrative control of University of Health Science, Andra pradesh, as on today no development took place.

Further, NIC, in 1993, has made preparation to set up a technologically advanced national information handling for offering full text, bibliographic retrieval, full access to internet, e-mail and access to over 200 network in 160 countries to health science professionals. In addition, now Internet is accessible in major cities of the country with the provision of net server by DoT, which the medical professional can make use of.

The developments indicate that resource sharing and networking activity among health science libraries of India is in infancy, except for the contribution of ICMR-NIC. Hence, it is high time for the management, health science professionals and information professionals to make constructive and coordinated efforts for exchange of health science information at global level. Certainly it is heartening to note that India, having a National Medical Library; a well organized national level research council, ICMR, with a multi level research laboratories; and medical and dental colleges that run into a couple of hundreds and a high magnitude of health care centres under government and corporate sector, is deprived of a network at national level for exchange of health information.
EXPECTATIONS FROM HEALTH SCIENCE INFORMATION SYSTEM FOR 21ST CENTURY

The phenomenal growth in the complexity and scope of biomedical and health sciences has had two major implications. First, there is now a compelling necessity for a multidisciplinary team approach not only to research but also to treatment, which demands high level of organisation and coordination of medical information; and secondly, the activities and trends aroused at the international level demands a developing country like India to focus the attention for coordinated global efforts that relates to worldwide health problems.

Under these circumstances, the expectation of health science professionals from their information system is more significant. They expect,

• to improve and equalize access to biomedical information;
• linking of professional as well as information resources they need;
• to outreach to health professionals in rural area;
• online searching as a way of identifying journal articles of interest and to know in advance of the programmes in medicine;
• use of computer and image technology for medical education and patient care;
• Access to 'knowledge sources' or expert systems that are more popular in their discipline.
Thus, the health science libraries are expected to make immense contribution to the quality of medical education, research and practice with coordinated efforts, instead of remaining an array of libraries. They ought to strive for modernization of their institutional information system to be able to take up the challenges of the 21st century.

**TASKS OF MANAGEMENT**

The management, either Government or private has to consider the information system as a part of their health policy so that can acquire, analyze and provide health information.

They have to strengthen their budgetary allocations by self-supporting measures, say, charging for the services, getting donations from local/NRI alumni in kind or cash etc.

They have to computerize their information systems. The studies conducted apparently revealed the lacunae in the existing system hence the management has to take measures to improve their basic infrastructure facilities.

They have to design and develop a network that should be strategic and intensively practical and futuristic in approach. To achieve this,

___ They can revive the HELLIS net work with NML as focal point for the country.

___ They can enhance the activities of ICMR___ NIC as it has its roots at District level.
They can establish a national network of health science libraries as a three-tier hierarchical network. The proposed work can function with NML as an apex body and having at the second level four regional science libraries covering North, South, East and West; and state level health science libraries as the third level links having a cluster of all type of health science libraries linked to them within their geographical limits.

**TASKS OF INFORMATION PROFESSIONALS**

"Medical librarians will need to be active health information salespersons. They should use the new technologies not only to automate internal record keeping to make the library chores lighter and more efficient; but more importantly, to apply them to provide users quick, efficient and comprehensive access, not only to information sources, but also to information"[^8].

They have to coordinate activities, such as

- Bring out union catalogue with the holding of participating libraries;
- Formulate cooperative acquisition programmes, especially for foreign Publications;
- Conduct user education programmes regularly.
- Utilize the services offered at national level by NML, NIC etc and to have access to a variety of external resources, such as MEDLINE, EXMEDI, BIOSIS etc.

Thus they achieve user satisfaction, the ultimate measure for effective performance.
The health science libraries in India have to go long way to achieve efficiency in their performance. The user needs have been identified and their expectations have been recognized. However to enter the next century, the requirement is for the enthusiasm, on the part of administrators and information professionals to utilise the new powerful information technologies now at their disposal and to shed the traditional role. Indeed, the health science libraries are at crossroads working on conventional methods and looking for the benefits of advanced technologies. It is high time for the management and information professionals to understand the realities and improve upon their information systems to be suitable to march into 21st century. The need is to change the priorities to allow for continuous support to our most important asset, the health science information in the next century.

The following are the frequently used sources of medical professional:

Among the electronic resources the existing 'e' resources available Data base of books, articles and other resources. The holding of the medical library database are consisting of medical books, periodicals and reports.

These can be converted into electronic format clients of medical professional use through digital network.
The online electronic library catalogue shows how information could be published and that enable users to search the document with various access points.

Further various accesses the subscribed 'e' resources are 'e' books, Dissertation, bibliographical data base online and online tutorials.

Commonly most of the medical libraries have connected with MD consult website from Elsevier. MD consult brings leading medical 'e' resources to gather into one integrated online service. MD consult is one of the most efficient tools available physicians today are, putting a breath of highly respected current clinical resources at your finger tips. Also have the full text of articles available through the MEDICINE search engine that includes the complete contents of 70 current foreign medical journals.

Various electronic database publishers today account for publishing information both on CD ROMs as well as making them available for online retrieval. The users of medical library can have seamless access to articles form subscribed journals through various publishers.

The publisher silver platter's MEDLINE will provide automatic link to the corresponding articles website. A mouse click on the retrieved MEDLINE record activates the link and connects the medical professional to the full text of articles.
The other access procured 'e' reference sources on CD are encyclopedia, dictionaries, hand books, text book and tutorials. Apart from that there are some free 'e' resources available in medical libraries at free of cost.

Also some medical institutions, organization and universities that provides link to web site. They are CSIR, ICMR, ISO, NAAC, NICK and search engines like Google, Yahoo, Altavista, and science Direct.

Other medical library records which are created internally and received records, correspondences, 'e' mail messages purchase records bills and registers.

DIGITALIZATION OF INTERNAL RESOURCES

Due to copyright and IPR rectifications, medical libraries unable to digitalized all the resources available in their collections. Libraries can digitize their collections. Libraries can digitize their own publications brought out in their institutions such as books, journals, news letters annual reports, magazines and souvenir, articles published in journal by the clients of medical professional, paper presented by the staff and students, contents page of books and journals, programmes organized – seminars, workshop etc. Educational materials, syllabus, Question papers, model questions, photographs, audio and videos clippings, News papers clippings, project reports submitted by the students.
ADVANTAGE OF MEDICAL 'e' RESOURCES

It is the smartest choice for clients of medical professionals, because it provides most current, evidence based global clinical information available.

It offers a very comprehensive tool for clinical decision-making, definite ideas for medical students and residents.

Search the entire collection simultaneously to pinpoint the specific information needed, by medical library users.

Users can use the 'e' resources at anytime and anywhere. Easy to copy, edit, update print or send by e-mail can be made available on the web for immediate worldwide access. Speedy delivery, value added service and usage reports are the other advantages of medical 'e' resources.

CATALOGUING OF 'e' RESOURCES

The materials available in 'e' data are called Meta data. They can be catalogue in a manner of Dublin core. The data will cover the name of author, title or book or the article, name of the publisher, subject, classification, and few keywords for what subject concerned type and format of data.

The format of the 'e' resources may be in any one of the following

1. Portable document format
2. Word
3. Hypertext markup
4. Audio video image

The resources catalogued may be reprints and pre prints.
DEFINITION OF INTERNET

Cambridge International Dictionary of English defines Internet "as large system of many connected computers around the world which people use to communicate with each other". (Network of networks). The Internet knowledge is the knowledge of the basic theoretical aspects of the internal and its practical application.

According to Douglas. E. Comer (2003) Internet is "the collection of networks and routers that use the TCP/IP protocol suite and function as a single, large network. The Internet reaches government, commercial and educational organization around the world.

In the words of Neil Randall (1996) Internet is "the global network of networks that are all inter communicable".

Glee Harrah Cady and Pat Mc Gregor (1995) describes that "Internet is a network of network and the Internet mostly connects network of computers".

UTILIZATION AND APPLICATION OF INTERNET

The largest wide area network is called the Internet. Having originated in the United States as a Department of Defense Network, it now covers the entire world.

The Internet was conceived to provide for information exchange between research centers and universities, but it is accessible to every one. For individual users, there are many private services providing access to the Internet, as well as on-line services such as CompuServe and American online. In India, Internet service is provided by VSNL, Dish net, Mantra online, Satyam online etc.
The popularity of Internet has changed every sphere of human life. With the help of Internet we can get information regarding share market position, latest news, weather examination results, admission status, employment notifications etc. Online auction, online trading, online shopping, online banking, e-commerce, m-commerce are some of the initiatives towards "Cashless society" due to the advancement of Internet.

Internet also plays an important role in education, research and development. Large volumes of research articles finding on varied topics are available in Internet.

To access Internet, we need a personal computer, a telephone connection, a Modem (Modulator Demodulator) and access to any one of the ISP (Internet Service Provider) such as VSNL, Mantra Online, and Tata Nova.

The following are the most commonly used services available with Internet:

1. E-mail
2. Voice mail
3. Instant Messaging
4. File Transfer
5. Remote Login
6. News Groups
7. Gopher (Downloading information)
8. Video Conferencing
World Wide Web (WWW) and File Transfer protocol (FTP) are part of internet. All computers or resources connected to Internet will have a unique address known as URL (Uniform Resource Locator). For example, http://www.tndte.com is the website address of Directorate of Technical Education, Chennai.

Internet uses TCP/IP protocol. HTTP (Hyper Text Transfer Protocol) is used for data transfer between computers in internet. HTML (Hyper Text Markup Language) is used for creating web pages. Web pages can be easily created (even without the knowledge of HTML) using Front page Express, Adobe Golive, Macromedia Dream weaver software.

APPLICATION OF INTERNET

1. Billions of pages of information are available on the Internet on all topics. Hence we can obtain latest and sufficient information on any topic from the Internet.

2. Huge number of free softwares (freeware, shareware etc) are available in the internet. We can download the softwares and use them at free of cost.

3. We can communicate through e-mail, video mail or voice mail or chat with any one on the Internet.

4. With the help of Telnet we can connect two remote computers to and from a network.

5. By subscribing to newsgroups, we can get latest news on the topics of interest to us.
6. We can buy or sell things without directly meeting the clients.
7. We can obtain examination results, recruitment results etc. in the Internet.
8. Internet is also used for matrimonial services, placement services etc.
9. Leading newspapers/journals are also published on the Internet.

**ORIGIN OF INTERNET**

In 1969, the US department of defence created a network called the ARPA net, (Advanced Research Project Agency). Due to enormous increase in the use of ARPA net for non-military purposes, the US department of defence created an exclusively military network called MIL net. A few years later National Science Foundation formed the NSF net, similar but faster than ARPA net which linked together NSF researches. At that time there were no personal computers. The modem, the big mainframe sat at the center of a starfish-link system with a dumb terminal at the tip of each tentacle.

Internet is network of computers that offers information and access to people. The word “internet” was coined from the word “interconnection” and “network”. Such network of networks is called “internet”.

**INTERNET, THE INFORMATION SUPER HIGHWAY**

Internet is a collection of networks, a giant agreement among, thousands of computer systems to connect together. According to Glee Harrah Cady and Pat McGregor (1995) Internet is a network of networks. It contains:
- Government computers, owned by nations throughout the world.
- Computers run by hundreds of different Universities and Schools.
- Systems belonging to non-profit organizations that just wants to bring online computing to the people.
- Computers owned by commercial enterprises that make money by providing people with access to this amazing inter connected system.
- The Internet connects millions of people throughout the world, from Russia to Rhode Island, Austria to Australia. Once on this fantastic system-if we know where we are going and how to get there. We can cruise around in Cyberspace, traveling from computer to computer, continent to continent.

INTERNET CONNECTION

There are basically, three types of Internet connection. These are:

(i) Permanent connection, (ii) Dial-in Terminal connection and (iii) Mail connection.

(i) Permanent Connection: In this connection computers of many users are connected directly to one particular computer, which in turn permanently connected to the Internet. This is the best type of connection but it costs very high.

(ii) Dial – in Terminal Connections: Many service providers have dial-in terminal accounts. The client dials across the phone lines, but his computer does not appear to be connected to the Internet directly; it is just a terminal connected to
the service provider's host computer. For instance, when he copies files from a computer, he has to transfer back to his own computer, using his communication program's host computer. He has to transfer back to his own computer, using his communication program's data transfer commands. These are often known as dial-up or interactive connections.

(iii) Mail Connections: Some Internet users have only mail access to the Internet. They can send and receive mail only. However, it is possible to use many of the Internet's special features "through the mail", but it is very complicated and it requires plenty of practice.

EQUIPMENT REQUIRED FOR INTERNET CONNECTIVITY

In order to connect the client's computer to the Internet he needs the following equipments.

- An Internet account.
- A computer
- A modem
- Simple communication software
- Communications parameter information
- A login name
- A password

COMMUNICATION AND NETWORKS

Network is a generic term. Several computer connected together are called a computer network. A network is a system of computer and related equipment connected by communication links to share data.
➢ To provide sharing of resource such as information or processors.
➢ To provide inter-process communication among users and processors.
➢ To provide centralized control for a geographically distributed system.
➢ To provide network users with maximum performance at minimum cost.

TYPE OF NETWORKS

In a successful distributed database environment connectivity and networking plays a vital role. There are various types of networks.

➢ Local Area Networks-LAN
➢ Metropolitan Area Networks-MAN
➢ Wide Area Networks-WAN
➢ Wireless Networks
➢ Intranet

IMPACT OF INFORMATION TECHNOLOGY

➢ News on Demand
➢ Education Services
➢ Video on Demand
➢ E-Mail
➢ Video conference
➢ Library and Information Service
➢ Entertainment

NETWORKS IN INDIA

There are two types of Indian networks
GENERAL NETWORKS

a) Nicnet  b) Indo-net c) I-net (earlier Vikram)

a) Calibnet  b) Delnet c) Inflibnet d) Ernet e) Malibnet etc.,

NICNET

Nicnet was established by National Information Center in 1977. It is based on satellite technology. The headquarters is in New Delhi and the regional centers at Pune, Hyderabad and Bhubaneshwar.

APPLICATION

Nicnet is concerned with only government departments and public sector organisations for data transmission. One of the main services of Nicnet is the value added "electronic mail" and also it provides broad casting and bulletin services.

INDONET

The Indonet data network was engineered by CMC Ltd. The Indonet aims to provide facility for distributed data processing on all India basis to large organization in the network using the CMC computers for their data processing operations. The Indonet nodes are at Calcutta, Bombay, Delhi, Bangalore, Hyderabad and Pune.

APPLICATIONS

Indonet offers computer-to-computer interchange facility. Distributed online application on Indonet allows the corporate office to have up-to-date information. A member library may access database services like Dialog, CompuServe, IP and sharp through Indonet.
I-NET

I-net formally known as Vikram is a bearer network for fast reliable, flexible and cost effective transport of information. I-net is the packet switched public data network to be established by the department of Telecommunications, Government of India. This network will initially have 8 switching nodes in Delhi, Bombay, Calcutta, Madras, Bangalore, Hyderabad, Ahemdabad, and Pune.

APPLICATIONS

Any I-net user can interchange information through E-mail or using File Transfer protocol. I-net is the cheapest and reliable communication media to access numerous foreign bibliographical database through different vendors.

ADVANTAGES OF INTERNET

Free software: Most popular web browsers needed are free of charge on the Internet. Besides a computer, the only expenses are necessary software (such as Microsoft Word)

Geographic independence: Learners virtually anywhere can access such courses, obtaining truly distributed learning.

Temporal independence: Learners can work at their own place, and when they feel it is convenient to do so.

Increased learner centeredness: It allows for learners to work at their own place on some of the material, and encourages them to explore on their own.

Ease of use: Because they are on a browser, they tend to be fairly easy to use.
Up-to-date courses: Because the Internet is constantly changing and new courses are being introduced, updating courses is required.

Everything is digital: Since all work is sent over e-mail, instructions are able to deal with students work in an easy manner. And since everything is typed they are no longer faced with the challenge of deciphering handwriting.

Ease of use: Because the program must be easy for both the instructor and learners, this allows less time to be used on usage instructions and more to be used on course content.

Dynamic updates: The material can be dramatically changed as needed causing less risk of obsolete content.

Additional information: By using hyperlinks, additional material can be added very easily.

Reusability: Instructors can reuse their own material or easily get material from others.

Future growth: Instructors who wish to add to a course can easily do so.

Ease of communication: Instructors can communicate with learners in a variety of ways - many of which can be downloaded off the internet for free and fairly easy to integrate into existing web pages.
DISADVANTAGES OF INTERNET

Reliance on information system provider: Institutions depend on these providers to ensure that courses can be offered online and distributed to learners.

High speed Internet connections: High-speed Internet connections are required between the organization and their service provider. In addition, for best results, learners need high-speed modem pools available, which can be expensive.

Instructor training: Instructors must go through extensive training if institutions wish to fully embrace distance learning courses, and have individuals who will be developing these courses.

Lack of standards: Because there are so many ways to organize the distance learning courses, institutions must make sure that they do not design all courses the same, because particular designs or tools can become obsolete.

Support infrastructures: Institutions willing to offer a significant number of courses must have solid support. This includes, backups ensuring that maintenance will not disrupt learners or instructors and individuals will be available to provide support for learners and instructors.

Implementation and operational costs: A substantial personal is needed for developing, maintaining and supporting such courses, in addition to networking.
Reliance on information service provider: Internet providers are not always available and in working order. Systems can be down allowing an instructor to instruct.

Increased co-ordination: The organization and coordination of a course, such as incorporating communications etc. the initial coordination has a tendency to be quite time consuming.

Digital material required: Material such as verbal discussions and diagrams must be converted to digital information. Instructors may find that the coordination of material takes quite a bit of time.

Viruses: Instructors are at a great risk of contracting viruses while exchanging materials with learners.

HTML knowledge required: Instructors who develop their own web based material must have some HTML knowledge; however, they can use helpful programs such as dream weaver to help to ease the process dependence on course developer: Instructors who do not want to create their own web page have to rely on others when there are needed updates, or problem resolutions.

Copyright issues: Instructors must pay close attention to where they got their information, since it will be published on the web. They must give credit to all sources. As well, there is the question of which the material belongs to, the designer or the institution. Most of the time the institution gets rights and the designer has a possibility of being exploited.
The web:

The web is a large system of servers which offers all kind of information to anyone on the net. The information can be in the form of regular leaf as well as pictures, sounds and other types of data to access this information you use a client programme called a browser.

There are two reasons why the web is so popular; first it is easy to use, second it is easy to create your own web information to share with people all over the net. Indeed, your will find many of the web resources are maintained by individuals for their own pleasure.

With the web information stored the pages. (This just name: It has nothing to do with pages in a book) Each page can hold not only information but links to other pages. As you read a page follow a link to jump from one to another.

The Remarkable thing is that the various pages can be on any computer on the net. If you want to follow a link, your browser will find out where it is, contact the web server at the location, request the new page, and they display it on our screen. All of this happens automatically.

The idea of data containing links to other data is called hypertext. Thus we can say the purpose of web is to fact and display pages of hypertext. This simple idea has proved to be a useful and enjoyable. With a short time that the web has grown to be one of the most popular Internet services.
INTERNET RELAY CHAT

Internet relay chat usually called IRC is a public talk facility which can be use by anyone on the net at any time with in IRC there are many conversations going on at any time, many of which are organized around a particular topic or idea, each IRC conversation is carried on channel. To join an existing conversation all you need is to tell your IRC client you want to join such and such channel, you can create a new channel, whenever you want, and use it for as long as you want once the last persons level a particular channel it vanishes automatically.

As you much imagine IRC is widely used by great many people around the world. Indeed there are many people who have grade IRC find they talk regularly. In general IRC conversations are public however your conversation with people of your own choosing much likes a telephone conference call.

Various practices and efforts are being made at the global level to find the best practices for electronic journals. In formulating such practices, many people such as primary and secondary publisher's representations of scholarly societies, librarians and various vendors serving these communities have major role to play.

IMPORTANCE OF THE STUDY

In the new atmosphere, there will be networked reader places, perhaps no space for books. There will be only computers with Internet connections and CD ROMs etc. The library provides maximum information
in electronic format. In future, one may access electronic sources and work at home. The users can access the information from anywhere, saved and stored in computer or pen drive.

Most of the Medical College libraries in Tamilnadu and puducherry are fully equipped with modern facilities like database of books and articles, e-books, e-journals, e-groups, e-forums, webs, web blogs, online tutorials, online database and digital archives.

The present study is a thorough study of electronic sources available in the Medical libraries and usage of electronic sources utilized by the students, doctors and faculties of Medical College. It also elucidates the wide growing gap in volume of consumption between print media and electronic media by the clients of Medical Profession.

Ten Medical College libraries have been selected for the study. Out of ten, four from puducherry and six, from northern districts of Tamilnadu have been selected. Out of six, two from government medical colleges, two from Government aided medical colleges and two self financing medical colleges have been selected. From Puducherry one Government medical college and three self-financing colleges have been selected. The selected ten Medical college libraries serve the varied needs of its client. The libraries are enabling to serve the clients to obtain the necessary information they seek.
THE AVAILABLE ELECTRONIC SOURCES IN THE SELECTED TEN MEDICAL COLLEGE LIBRARIES ARE:

FREE FULL TEXT RESOURCES

Free 'e' books
Free 'e' Journals.

PUB MED.

Pub med facilitates to view the subscribed journal with full text links.

i) Browse by Alpha
ii) Browse by subject
iii) Browse by department

FULL TEXT RESOURCE FROM ELECTRONIC PUBLICATION

Black well Synergy
E.M.J journals
Cambridge university press
Elsevier (w.w.w.Science direct.com)
High wire press Journals
Ingenta connect
Oxford university Press
Springer Journals

For example

ELSEVIER

Elsevier presents a comprehensive array of electronic information for health professionals, students as well as faculty.
### SCIENCE DIRECT FUTURE AND FUNCTIONALITIES

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<td>Peer-reviewed papers that have been accepted for publication, but not yet been published in the printed journal are made available online.</td>
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<td>Citation Alert: A Citation Alert Notifies users by e-mail when a selected article is cited by new articles added to science direct.</td>
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<td>Journal Issue Alert: Registered users are emailed every time a new issue of a particular journal appears on SD</td>
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<td>Search Alert: A Search notifies users by e-mail when a stored search retrieves new results.</td>
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**MD CONSULT**

- **Journal Search**: Retrieve the full-text of articles from over 70 plus premier medical journals and Clinics of North America and 31 Year Book online with integrated searching of literature databases including MEDLINE.
• **Drug Information**: complete and unbiased FDA prescribing information on more than 30,000 medications from the leading independent drug reference source - Mosby Drug Consult.

• **Drug Updates**: Highlighting recent drug approvals, notices and other current pharmaceutical information.

• **This Week in Medicine**: reviews new developments from all the major journals, government agencies, and medical conferences, and provides you with concise clinical summaries and links to related information.

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MEDLINE

This database deliver full, continuous clinical support from clinical research and deference to the quick reference to the quick actionable in format ion needed at the point of care.

MEDVARSITY

A Software package which consists, of contents, is available for the use of faculty.

D SPACE

D Space is digital library software used to capture, store, preserve, and redistribute digital library materials. Research institutes worldwide use D space as an institutional repository, a learning object repository, for records management and more. D Space is freely available and it can be customized to suit our need.

GSDL (Green stone Digital library soft ware)

It is open source software used for building and distributing digital library collections. It provides a new way of organizing information and publishing it on the Internet or CD ROMs; and online electronic library in the selected Medical colleges.

A pilot study was conducted to test the feeling of respondent in answering the questionnaires, which were distributed personally to the client of Medical profession.
Totally 120 questionnaires were supplied to clients of Medical profession, each college received 12 questionnaires.

**The questionnaire consists of the questions relating to the**

i) Back ground information of the clients ‘

ii) Impact of use of electronic resources.

iii) The extent of dependence on various electronic resources.

iv) The extent of satisfaction of information sources available in the libraries.

v) The importance of electronic sources for teaching and research purpose.

vi) The electronic channels used to get the required information.

vii) The electronic sources used to get up-to-date and speedy information.

viii) The time consumption of electronic resources.

ix) Different opinion about electronic media and print media

x) The purpose for which information is sought and collected.

After that, sufficient time was given to the respondents in furnishing the information. At the time of collection of filled questionnaire, each respondent was requested to offer his comments and opinion on various concepts in it.

Their suggestions relating to the improve man of electronic library services and also called for. After collecting the data from respondent, the data were checked and analyzed based on the objectives stated. Each data
was recorded on the data sheet and for in to the computer personally. There should be significant different between the clients of medical profession in making use of the services offered by the library electronic sources. The electronic resources have the positive impact on productivity of the clients of medical profession.

**STATEMENT OF THE PROBLEM**

With the online and CD – ROM indexes and the advent of fixed cost subscription access to information services, libraries have the option of canceling many paper based subscriptions altogether. This type of change is about to happen with scholarly journals also, and as a result, libraries will never be the same as before. In the case of Medical college libraries almost all the libraries begin to adopt new technologies in order to cater the needs of their clients. Modernization is the adoption of new technologies to improve current services. But transformation is more radical. The paper documents are no longer available at the library at all. With the help of electronic resources users can access the services from anywhere.

Electronic publication is a transforming technology to libraries. Electronic material is on the web, electronic publishing changes the substance of what libraries deal with electronic access by passes much of what is control to the libraries role today. The greatest benefit of electronic resources is the richness of information that is available to the end user. Users now have access to information that print technology could not deliver. Electronic resources give greater freedom to the researchers,
students and practicing doctors to disseminate their needed information without loss of time.

The problem of the study is not only impact of ‘e’ resources on Medical library elite users but also the role of library and its viability in the electronic publishing environment. Electronic publishing may not completely replace the existing printed version but both will be supplement each other in order to meet the need of the users. The librarian’s role has to be redefined in view of technological developments and he has to procure some of the documents in electronic form, keeping in mind the best intellect of users and retrieval efficiency.

OBJECTIVES OF THE STUDY

1. To study the electronic sources of information available in the medical college libraries.
2. To study the needs of information to the clients of medical profession.
3. To study the information seeking behavior of clients of medical profession
4. To study the infrastructure facility of electronic study material available in the medical college libraries.
5. To analyze the usage of electronic journals in the medical profession.
6. To Identify information sources utilized by clients of medical professionals of Tamilnadu and puducherry state for accessing electronic media.
HYPOTHESES OF THE STUDY

1 'e'-resources are easy to distribute, less expensive and easy to search. It provides instant access to quality information to the end users.

2 The information sharing through computer networks and document delivery in the form of electronic media are helpful to the research scholars, teaching faculty and the practicing doctors.

3 Lack of adequate local and national infrastructure for handling information technology and networks.

4 In the changing scenario of technological development the libraries and librarians will have to play a crucial role in handling conventional and electronic resources.

5 The staff and students of medical colleges opts only in electronic media and not the virtual media.

METHODOLOGY

The present study is a case study with reference to elite medical library users of Tamilnadu and puducherry.

A thorough study on electronic sources available in the institution and usage of electronic sources by the clients of the medical profession has been undertaken. The questionnaire distributed to clients of medical profession to find out the impact of information seeking behavior.

Particularly they have been asked about their use through electronic sources.
SAMPLE SIZE

Total estimated sample size is 120 elite medical library users in Tamilnadu and puducherry. Ten medical colleges have been selected for the study. Out of ten, four are from puducherry and the rest six from northern districts of Tamilnadu. From Tamilnadu two Government Medical Colleges, two Government aided Medical colleges and two self-financing medical colleges have been selected for sampling. The sampling technique used for the study is random sampling.

TYPE OF DATA USED

Both primary and secondary data were used for the present research. Primary data have been collected from the users of selected Medical college library. A well designed questionnaire was used to get information from the users of ‘e’ resources such as students, Teaching staff and practicing Doctors. Secondary sources were collected from reference tools and from previous studies. And the data were collected from the concerned college websites and prospectus. Interview was also held with librarians to interpret the question to them and to collect the data.

SOURCES OF DATA

There are various medical college library users in Tamil Nadu and puducherry, which are in vogue in India, and prominent among them alone are considered for intensive research study. They are

i. Sri Ramachandra Medical College (S.R.M.C.), Chennai.
ii. Christian Medical College (CMC), Vellore.
iii. Thanjavur Medical College (TMC), Thanjavur.
iv. Rajah Muthiah Medical College, (RMMC) Chidambaram.

v. Jawaharlal Nehru Institute of Post-Graduate Medical Education and Research (JIPMER), Puducherry.
vi. Mahatma Ghandhi Medical College (MGMC), Puducherry.

vii. Vinayaka Mission Medical College (VMMC), Karaikal, Puducherry

viii. Pondicherry Institute of Medical Sciences (PIMPS), Puducherry

ix. Kilpakk Medical College (KMC), Chennai

x. SRM Medical College, Chennai

TOOLS OF ANALYSIS

In the present study, a variety of tools have been employed for analyzing percentage analysis and preparing table.

The statistical software package for social sciences (SPSS) was used for analyzing the data. After interpretation the inference was drawn and recommendations were made.

LIMITATION

The present study covers the clients of medical profession of 10 medical colleges in Tamil Nadu and Puducherry. The clients of medical profession those who are fully utilized the electronic resources are observed. The doctors, students and teaching faculty working in those medical colleges are included in the present study.
RESEARCH DESIGN

A research design is the arrangement of conditions for collection and analysis of data in a manner that aims to combine relevance to the research purpose with economic procedure.

A research design is the logical and systematic planning and directing a piece of research.

ORGANISATION OF THE REPORT

The study is organized two parts namely parts-I the critical background. And part-II analysis of data divided in to the following three chapters.

First chapter gives introduction about electronic resources and also deals with the statement of problem, objectives of the study, method of data collection, sampling technique, and collection of questionnaire, interpretation and chapter scheme.

Second chapter deals with earlier students conducted in the field that is called review of literature. Third chapter deals the short history of 10 medical college libraries of Tamil Nadu and Puducherry. Part-II of this study deals analysis of the collected data; it is divided into the following two chapters.

Fourth chapter deals analysis and interpretation part of the related factor. Fifth chapter deals with findings, suggestions and conclusion.
REFERENCES:


8. U Koko, “The advance of Medical libraries to social health care needs.” (Keynote address delivered at the 6th ICMI. New Delhi, Sept 24-28, 1990) P.5.