CHAPTER 1

INTRODUCTION

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1.1 INTRODUCTION

Although India has been an independent nation for more than 64 years, professionals'

education in medical and paramedical sciences remains a problem for achieving the

cherished goal of the government, "Health for All". Health is the basic need of every

individual. It is fundamental to national process in any sphere. In terms of resources

for economic development, nothing can be considered of higher importance than the

health of the people. Even the ancient proverb "A sound mind in a sound body"

reinforces this. Life is not worth living until we are physically and mentally sound.

Hence, an efficient healthcare system is a must. Excellent medical and paramedical

colleges are essential to prepare doctors, nurses, laboratory technician, compounders

with good knowledge and skills- teachers, laboratories and libraries are important

components in providing effective medical and paramedical education. With the

unprecedented advancement of medical science in the last five decades, the study of

medicine has become very challenging and complex. New discoveries in almost all

the fields related to medicine have made medical and paramedical education an

extremely specialised field that now force students and resource people to keep

themselves updated in their knowledge of what is happening at present in their field.

In making this large corpus of knowledge accessible to the user, medical and

paramedical libraries play the most significant role in the medical society. The main

objective of these libraries is to assist the students, researchers and practitioners in not

only upgrading knowledge but also in providing information about new innovations,

views, theories and the latest treatment for better patient care. No educational or research programme can culminate into fruitful and valid results unless backed by an efficient support system, i.e. the library. "Perhaps no department is more vital to education and research programmes of medical school, than its library. Indeed if a medical school were to be appraised by a single criterion, the library might well serve." (Weiss, 1940). So, the medical and paramedical college library is ideally the main channel of bringing information to meet the information requirements of the user.

1.2 DEFINITION OF TERMS: MEANING AND CONCEPT

1.2.1 Library

Library is the lifeblood of a nation. It is considered to be the hub and heart of the educational system of the country. Charles S. Casassa S. J. (1959) in library dedication speech described "A library is a sacred place for preserved, therein are the best thoughts of the best minds searching, generation after generation for the truth". The term library is as old as mankind itself. It is an extension of the human memory and repository of human culture, oral and written. The word 'library' comes from the latin word 'liber' which means book. The library is therefore a place where books are kept. But the library of today is much more than a building or a room in which books are kept. The contents of a modern library are diverse and most libraries of today contain much more than books. They contain, besides books, graphic and acoustic materials such as periodicals, pamphlets, reports, newspapers, documents manuscripts, photocopies, musical scores, microfilms, maps, charts, atlases etc. According to S. R. Ranganathan (1959), a library is "a public institution or establishment charged with the care of a collection of books, the duty of making them

accessible to those who require the use of them and the task of converting every person in its neighbourhood into a habitual library goer and reader of books."

Asheim and Lester (1964) stated that "Libraries and library services reflect the conditions of the society they serve. Librarianship is not an isolated phenomenon but an integral part of social history". It plays an important role in the academic world by providing access to world class information resources and services and helps to stimulate the research, training, and other intellectual and recreational activities in the organization. In 1968, Health and Colleen have well summarized ,"libraries today are service agents sharing much in common with other service providers throughout the profit and nonprofits service sector of society." The quality of library is difficult to measure because the libraries are organization's assets and services are both tangible and intangible. The tangible assets constitute physical documents, facilities like reading room, furniture and human resources. The intangible assets comprise the invaluable personalized services rendered by the library staff. *The principal focus of a library is to provide right information/ document, on right time, to a right user who is in need of and to ensure that the delivered material meets his/her requirement.*

1.2.1.1 Role of Library in terms of Library Services

The libraries, information and knowledge centres are acting as the service providers and there is an incessant demand from the users is to provide the nascent, updated and analyzed information speedily. The users visit the library for various purposes but their main objective is to get the information available in their area of work. The libraries basically acquire process, organize, manage, and disseminate the information to the users whenever required. But the user requirements and service

expectations from the libraries are growing and advancing. It is therefore essential to provide user based services to the library user. For providing user based services or the user centric services, library professionals are required to understand the user needs and requirements and based on these issues formulate the services for the benefit of the users.

1.2.2 Library Services

"Books and readers are the two pillars

upon which library service rests": C.V Penne

Library is a service Institution and librarianship is an act of service in a library for readers to meet their reading requirements- educational, vocational, intellectual and recreational. In this context C.V. Penne (1964) says "this concept of service demands understanding of proper dimensions of that service and how can it be translated into effective action. The librarian has therefore, to realise the importance of the book as well as its reader. The building up of the library collection and its use is an act of scholarly creation and organisation. The act of service is 'active service' and not "passive service."

The Librarians Glossary by L.M. Harrod (1971) defines library service as "The facilities provided by a library for the use of books and the dissemination of Information."

According to S.P. Singh (2009) library services have two bases:

-The role of library services is to facilitate access to documents and

-The mission of a library is to support the mission of the institution or the interest of the population served.

1.2.2.1 Overview of Library Services

The Primary objective of a library, irrespective of types or size, is to promote the use of its resources. Library services bring together the document or information sources and their users by personal efforts of the library staff. User's information requirement depends upon the purpose for which he/she is seeking information. Library services satisfy information need of users through dissemination of information resources. The information dissemination activities may be accomplished in two ways -- on the basis of expressed demands or in anticipation.

1.2.2.2 Information Sources, Resources and Services

A document gives information or facts. Documents are records of human observations and thoughts, available in many forms and formats. A document in any form can be a source of information. Information sources have two components : conduit (the physical facilities used for gathering, storing, processing and distributing information) and content (the information sources and elements). Information sources become information resources when these are organised and institutionalised in some ways, and can thus be reused. Libraries perform the following activities for optimum use of information sources (Levitan, 1982):

> ➢ Develop access mechanism to information sources.

> ➢ Provide seamless access to resources.

> ➢ Manage and maintain resources.

➤ Design , develop and disseminate information products and services: and

➤ Repackage and distribute its products and services.

Information sources can be categorised on the basis of their physical forms, information contents, nature of presentation etc. Denis Grogan divided information sources into three groups on the basis of their information contents.

Table No. 1.1: Information Sources

Categories	Information sources
Primary	Primary publications are those in which the author for the first time supplies evidence, describes a discovery, makes or drives a new proposition or brings forward new evidence about previous proposition.
Secondary	A document concerning a particular subject of inquiry which is derived from or based on the study and analysis of the primary source of information is called the secondary source of information.
Tertiary	Report information that are last to appear and mostly do not contain subject knowledge. It is designed to provide information about information and so acts as a guide to the primary and secondary sources of information.

A library should organise information sources to provide services to users. Library services may be provided in anticipation or rendered in response to specific query or request. Library services should be designed and disseminated keeping in view the information needs of users.

1.2.2.3 Users of Library Services

Almost all the academic activities like education and training, research and development etc. require active library support. Users of library include students, teachers, researchers, planners, doctors, nurses and people from the different walks of the medical society. Information need of users may vary widely. However, Melvin Voigt showed that there are four types of information requirements or approaches. These are:

- Current approach: It helps user to keep abreast of current developments in his/her areas of interest.

- Everyday approach: It originates from the user's frequent information needs in the course of his/her study or investigation.

- Exhaustive approach: It is the user's demand for almost all relevant documents on a subject within the area of interest.

- Catching – up approach: It is the user requirement for a brief but complete picture of the recent developments on a subject outside the area of his/her main interest.

1.2.2.4 Types of Library Services

Libraries provide a variety of services to satisfy different information requirements of users. The major and important library services are:

Reference Service: Reference services help users to locate and obtain specific pieces of information from information sources such as reference books, catalogues, directories, files, abstracting and indexing periodicals , databases (online and CD-ROM) and other reference materials. Library personnel may either help users in searching (direct search) or they themselves do the search for users (delegated search) on online or offline mode.

Referral Service: Referral services aim to refer users to the sources of information such as secondary publications, information units, professional organisations, research institutions and specialists/experts. Such services do not provide the documents or information required by the user for his/her query. Librarians utilise directories and databases on sources, specially designed and developed for rendering referral services.

Current Awareness Services (CAS): CAS satisfies users' current approach to information and thereby keep them up-to-date in the field of their work. The important characteristics of CAS are as follows:

- It is a technique of communicating current information to users.

- It provides latest developments in a subject field and does not provide answer to any specific query.

- Generally covers a broad subject area and supplements the user's own channel/media of obtaining information.

- It is known for the speed and timeless.

- It is meant for use before its contents are absorbed by secondary publications like abstracting and indexing journals.

Although medical professionals use a large variety of sources for current awareness (personal contacts, subscription to major journals, attendance at conferences etc.) and any published information may be considered too slow.CAS may be provided through variety of media and channels such as current awareness lists, current contents routing of periodicals, list of research in progress and forthcoming meeting/seminars/conferences, newspaper clippings etc. Some commercial publishers and database vendors provide free online CAS through Internet. These are:

- Contents Direct Service (Elsevier)

- IDEAL Alert (Academic press)

- Wiley book notification service (Wiley)

- Book information (Amazon com)

- Current Contents and ISI alerting Service(Institute of Scientific Information, Philadelphia-Fee based)

Selective Dissemination of Information (SDI) Service: SDI is a special type of current awareness service. It supplies each user with the references of documents to their predefined areas of interest, selected from document published recently or received during a particular span of time. H.P. Luhn first coined the concept of SDI as a computer medicated information services. The workflow of SDI service is based on the following steps:

> Step I- Users' profile: In the first step needs and interests of each user or a group of users having similar requirements are ascertained and carefully analyzed. These are then expressed in terms of some keywords, collected from an accepted thesaurus. User profile may be stored as a database file in case of computerised SDI.

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- ➤ Step II- Document profile: In this step contents of selected documents are analysed and expressed in terms of keywords selected from the same accepted thesaurus. It is necessary for precise matching. This may also be stored as a database file.

- ➤ Step III- Matching: The first two steps are the work of library professionals. This step i.e. matching of two profiles is conducted by computer at regular intervals. The result of matching is then saved as a file in the required format such as text, html etc.

- ➤ Step IV-Notification: This step involves communication of result to the users. Notification may be sent to users through e-mail by attaching the result file or as a hard copy by obtaining printout of the result file(s).

- ➤ Step V- Feedback: SDI includes a mechanism of feedback from the side of users. Generally, a feedback form is sent to each user along with the notification in which he/she has to indicate whether the document really interests him/her, whether he /she needs a copy or why it is of no interest to him/her. On the basis of feedback users' profile is updated regularly.

There are two types of SDI – the first is patterned after the western SDI concept utilising computer storage and retrieval transmitting recent documents in abstract form; the second is the modified SDI which relies on both new and old materials and repacked documents in various forms.

SDI services in Indian medical libraries are not as popular as in the countries of the west. However, keeping in view the importance of SDI service in disseminating the medical literature information to concerned medical professionals, efforts were made to take stock of the prevalent situation in Indian medical libraries.

Literature Search Service: It is an extension of reference service. This service includes the following steps :

- Analysis of the search parameters of a query.

- Formulation of a suitable strategy for searching different information sources.

- Identification and choosing of most appropriate sources to be searched and order of searching them.

- Understanding of retrieval features of online databases and CD-ROM.

Document Delivery Service (DDS): Document Delivery is a key element in access to information. Unless the documents required by the user are made available to him/her, all the other services are of no use. DDS is a complex process and is concerned with supply of documents to users on demand in required format. All the services such as CAS, SDI, and Literature search are aimed at guiding users to the documents of their interests. DDS is the last point in this chain of information services that actually locates the required document and supplies it to users in required format. Electronic DDS supports delivery of documents in digitised form at anytime from anywhere.

Reprographic Service: India is a vast country but reprographic services make available documents required by users in different places. In this way the users get the required documents without wasting time. Reprographic service avoids duplication

and strengthens inter-library loan facility. It enhances the utilization of the limited resources available to the medical libraries, especially in developing countries.

Translation Service: In the area of Science, about half of the world's literature is published in languages other than English. Access to non-English literature by the user who know English is possible through translations. Translation Services thus help in the global access of information. In India, DESIDOC, NISCAIR, IASLIC, ONGC, BARC, BHEL, DRDO laboratories and several wings of the Ministry of Defence and Ministry of Science and Technology provide translation facilities.

In fact, now a day the proportion of medical scientist able to deal with foreign languages has declined. Thus the need for translations has increased. *Institute of History of Medicine and Medical Research, New Delhi*: this institute arranged translation of Arabic, Persian and Urdu into English for the Institute's scientist. Outsiders can also use this facility on specific request free of charge. *National Information and Documentation Centre on Disability and rehabilitation, New Delhi*: It provides translation of Indian regional languages into English for staff members only.

National Medical Library(NML) , the largest medical library in India , arranges the translation of Russian , German, French and Spanish languages into English in cooperation with other documentation centres in the country and abroad.

Bibliographic Services: Bibliographies serve as a guide to available literature on a subject. It is a list of references particular to a subject, covering materials on such a subject for a given period of time.

Bibliographies are produced for use:

i. to support background information in research projects

ii. as reference tools in training or classroom teaching.

iii. as information tools by which to make users aware of recent materials on a particular subject.

iv. as information tools by which to advise librarians of the availability of new materials which they may want to acquire.

Bibliographical service is an exhaustive approach to information in response to well-recognised need, namely, to find out a possible relevant literature on a subject. To meet such an approach effectively, the accretion mechanism has to be adequate or in other words the coverage of the information system has to be, as exhaustive as possible.

Medlars/Medline Service: The MEDLINE (Medical literature on-line) database is the largest and best known database of the National Library of Medicine (NLM), USA. With its back files it contains over twenty one million indexed citations from the 5639 biomedical literature from 1966 to the present. The Medlars and Medline services play a prominent role in dissemination of worldwide published health science literature to the biomedical community as and when desired. It provides up-to-date information to as great an extent as possible and its citations help in locating original sources.

Indexing and Abstracting Services: Indexing and abstracting journals play a vital role in the access of medical information to users. There are many indexing and abstracting tools in the field of health science such as, *Index Medicus, Excerpta Medica, Chemical abstracts, and Biological abstracts* and so on. The major index for

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biomedical literature is Index Medicus. Chemical abstracts provides international coverage of chemical literature, of its 80 sections, nearly one-third are biochemical. Biological abstracts covers all types of literature in the life sciences. Nearly 80 per cent of the Index Medicus journals are also included in Biological abstracts. Many indexing and abstracting service provider publish guides to the use of their publications and include lists of the journals and other materials covered. These are invaluable to the librarian, particularly in determining the amount of overlap to be expected in searching the various sources.

1.2.2.5 Requirement for Library Services

A library must develop library services appropriate to its community, these services should take into account information seeking behaviours, information needs, and service expectations of members of the community. The requirements for design, development and dissemination of library services are:

❖ *Resources:* Libraries should develop comprehensive information resource collection and formulate collection development policy consistent with the goals of its institution or community.

❖ *Access:* Libraries should support state of the art computing and communication methods for accessing information resources by its users.

❖ *Personnel:* Information services staff should endeavour to communicate effectively with the full range of library's clientele and must have knowledge and preparation appropriate to meet information needs of the users.

❖ *Planning and Policy:* The scope of library services should be based on realistic planning and applicable policies and procedures.

❖ *Interface:* The user interfaces for online services must support easy navigation and provide links to internal and external online resources.

❖ *Evaluation:* The library should regularly evaluate its services to ensure that the services help to achieve institutional goals and goals reflects the needs and interests of the community served.

1.2.2.6 Library Services in Automated Environment

Libraries are always at the forefront of the latest technologies to find new ways to optimise the management of libraries and resources, and to provide improved services. Automated library systems, apart from supporting housekeeping operations and management of information services also act as document management systems. It stores documents in digital form and provide appropriate retrieval mechanisms so that individual documents, or sets of documents can be retrieved against specific query or on any given topic. In some systems, the document may be held in print form or microfiche and only the index is in electronic form. Automated system also monitors the whereabouts of documents so that library staff and customers can be aware of the availability and status of the documents in collection. The range of services offered by automated library systems can be placed into three broad groups – user services, MIS support services and digital media archiving.

1.2.2.6.1 User Services

These are designed with a focus on the services to user and offering real benefits to them. These are:

OPAC Service: Library catalogue is the mirror of library collection. The objectives of library catalogue in an automated setup are to enable a user :

- to locate resources in a file or database as the result of a search using attributes or relationships of the resources.

- to identify a resource(i.e. to confirm that the entity described in a record corresponds to the entity sought or to distinguish between two or more entities with similar characteristics).

- to select specific item that is appropriate to user's needs (i.e. to choose a resource that meets the user's requirements with respect to content, physical format, and so on or to reject a resource as being inappropriate to the user's needs).

- to acquire or obtain access to an item described(that is to acquire an item through purchase, loan, and so on or to access an item electronically through an online connection to a remote source).

- to navigate a bibliographic database (that is through the logical arrangement of bibliographic information and presentation of clear ways to move around, including presentation of relationships among attributes) .

In automated setup access to library collection is provided through Online Public Access Catalogue or OPAC. OPAC of any modern library management system is fully integrated with other modules, accessible through LAN and WAN and allows users:

- ✳ to search , either combined or specific for all formats (books, journals, computer files, maps, sound recording, musical scores, visual materials , manuscripts and archival materials);

- ✳ to find a range or levels of records (from full bibliographic records to brief, minimal level records);

* to see standard and customised display of records in all status categories (fully catalogued, provisional records, confined copy, on order, in process, lost, withdrawn);

* to know item-level circulation status information in real-time and note of items have specials locations(in transit, reserve etc.) or status (recalled, on hold etc.);

* to search multiple words or phrases in one , more than one, or all fields;

* to apply various search operations within and across all fields such Boolean operators (OR, XOR, NOT, AND), Positional operators (SAME, WITH, NEAR, ADJ) and Relational operators ('less than', greater than', equal to' etc);

* to indicate which fields are to be displayed for a retrieved record at the time of display, printing and downloading.

Web-OPAC Service

Web-OPACs are next generation of OPACs. Web Enabled OPACs allows users to search library catalogues and access other services from any client anywhere at any time. It helps libraries to overcome space and time barrier in accessing services. Any machine with a standard web browser can act as a client because the mechanism does not require installation of any additional client side software.

Article Indexing Service

Modern automation packages also provide facility to create and index database of articles or papers published in the journals subscribed by the library. The abstracts of papers/articles may also be included in the database. Such a database allows specific and combined searching by author, title, keywords etc. and produces number of user

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specific services like table of contents services(by journals), compilation of subject bibliographies and generation of CAS, SDI etc in online and off-line mode.

Lending Service

Lending service provides facility to allow books and other library materials to read elsewhere by users. This service increases the use of library collection. Computerised lending includes following value-added user services:

- Quick issue, return and renewal of books and other library materials.

- Automatic display of document availability and possible date of availability (if issued to others), display or printing of documents borrowed by a member.

- Quick generation of fine receipts.

- Issue of member ID card with photograph.

- Membership history in the form of list of documents issued and retuned by a member during his/her membership tenure.

- E-mail reminders for overdue books.

- Reservation of document by users through OPAC/Web- OPAC, if it is on loan

- RFID and smart card based circulation system allows self-issue and self return of documents, secure use of library resources and personalised access to public domain resources.

Information Service

Library automation package produces lots of general and user specific information services. These are:

- Display of general facts and figures about the library, library rules, contact persons for specific services, library map, library calendar and holidays, etc.

- Current Awareness Service (CAS) in the form of arrival list of books, journal issues, CD-ROM databases etc.

- Selective Dissemination of Information (SDI) services in the form of report of arrival of books, journals, special journal issues, articles of interests on specific topic selected by individual user.

- SDI in the form of CAD (Contents-Abstract-Documents) type products.

- Auto e-mailing of all the above mentioned CAS and SDI services.

- Searchable database of community information and items of local interest.

- Quick compilation of bibliographies on any given topic or author.

Union Catalogue and ILL Service

Union catalogue is a collection of bibliographical details of resources belongs to a group of libraries. No library of this world is self-sufficient. Union catalogue helps user of one library to check the availability of required documents in other libraries, if not available in the stock of local library. Union catalogue is the result of cooperative processing works of member libraries of a resource sharing network or consortium. Inter Library Loan (ILL) service handles the processing related with the borrowing of items from collections beyond that of the local library.ILL service acts as a central service in resource sharing activities and includes following service components:

- Generating of initial requests to other libraries.

- Notifying users of the availability of items.

- Keeping records on items requested and items of loan.

- Controlling returns and monitoring users and requests.

User Support Service

Users of an automated library system may be grouped into different categories like expert, occasional, frequent, and older adult and users with special needs. User support services help these users to know how to make the most effective and efficient use of an automated system. User support service includes:

- User orientation programme and library hour ;

- Multimedia presentation and brief user manual ;

- Customisable online tutorial provides

    - Introductory tutorials

    - Help options at all search levels

    - Brief instructions and examples at all search levels

    - Searchable index on all help topics

    - Help to formulate the search when no results are retrieved

    - General search help with truncation, boolean searching, proximity operators etc.

Electronic Document Delivery Service

Document Delivery has always been at the heart of services offered by libraries. Document Delivery needs to embrace the delivery of both print and electronic documents. The mechanisms for deliveries of print documents are already well

established. This mechanism have been made more efficient through the introduction of electronic document delivery. The document delivery service is an integration of document discovery, the location of a supplier, request and delivery. It takes many forms, deals with variety of formats and involves a number of intermediaries. The different categories of document delivery services are:

Library Networks and Consortia Based Services: These are based on the union catalogue databases as a means of accessing and sharing the resources of a group of libraries. In India, document delivery centres of INFLIBNET, National Centre for Science Information (NCSI), Bangalore, INDEST consortium and National Institute of Science Communication and Information Resources, New Delhi are providing document delivery services across the country. British Library Document Supply Centre (BLDSC) is a major international service provider in this sector.

CD-ROM Based Services: CD-ROMs are now acting as document delivery medium for bibliographic and full text databases. Publishers, libraries and other intermediaries may provide network access to documents on CD-ROMs under networking licenses.

Commercial Services: These are fee· based document delivery services from commercial organisations like ISI (Institute for Scientific Information, Philadelphia), UMI (University Microfilm International, US), NTIS etc. Such services rely on a combination of technologies like fax, Internet, electronic bulletin board, e-mail etc.

Supplier and agent based services: Library suppliers and subscription agents also offer electronic ordering of both print and electronic documents. Some web based document delivery services are-

- CARL Corporation(http://www.carl.org)

- ERIC (http://edrs.com)

- FAXON (http://faxon.com)

- Inforetrieve (http://www.inforetrieve.com)

- Uncover(http://uncweb.carl.org)

- Ameritech Librarian Service (http://amlibs.com)

- Endeavour Inc.(http://www.endinfosys.com)

Outreach Services

Outreach services aim to automate the processes required to deliver materials to the homebound and other patrons who cannot physically enter the library. Automated library systems also offer community information services in the form of list of names and addresses of local organisations or persons, local leisure facilities, employment etc. Outreach services allow creation of user interest profiles, reading histories, easy selection, delivery and return of items. Access to outreach services and community information services is often integrated with OPAC.

1.2.2.6.2 MIS Support Services

Library management software deals with and contains huge amount of data related to documents, staff and users. This database when extracted, summarised and analysed may help various management activities like planning, decision making etc. Automation packages generate reports (standard and customised) and statistics to help library managers to investigate various management issues. The important reports and statistics are:

• Reports of item(s) requested by users and supplied by vendors/publishers;

• Reports on order status, overdue items, vendor performance, budget analysis etc.;

• Statistics related to exchange rate and price changes, average item cost etc.;

• Reports on items issued, returned and reserved over a period and transaction history of members;

• Reports and statistics on most frequently issued items and most frequently visited members; and

• Reports on title history for journals and journal usage by members.

Most automated systems offer a set of standard reports relating to transactions in various modules of the system. Apart from standard reports, library managers require to produce ad-hoc reports and customised reports that facilitate statistical analysis of data.

1.2.2.6.3 Digital Media Archiving

The digital archiving system enables users to access stored materials in the form of text, image, audio and video clips quickly from their desktop using a web browser. The services of a typical digital media archiving system are as follows:

• It allows full text and metadata based searching of textual information with natural, language query;

• It links full text digitised documents with library catalogue;

• It allows receiving and registering published documents from an electronic document management system;

- It enables a user to import files from the user's system and associate with a set of metadata record within the archive;

- It offers personal information environment (PIE) to users for accessing resources through customised interface; and

- It aims to provide a single layer interface for locally digitised materials, library OPAC, online databases and other electronic information resources

1.2.2.7 ICT enabled Library Services

Library services in general and reference and information services in particular refer to the personal assistance provided to users in pursuit of information. The reference and information services, provided to library users may be categorised into three broad groups:

- Information services that involve either finding the required information on behalf of the users, or assisting users in finding information;

- Instruction in the use of library resources and services; and

- User guidance, in which users are guided in selecting the most appropriate information sources and services.

The increasing availability of electronic information sources, emergence of web based digital libraries and use of desktop based search tools and agents have changed the notion of traditional reference and information services. The whole array of ICT enabled library services are discussed in the following sections:

1.2.2.7.1 Database Search Services

Libraries all over the world are finding vital information through online information retrieval services that provide access to thousands of databases containing both bibliographic and primary source information. Databases are also available as discrete datasets on optical discs like CD-ROM, DVD-ROM, etc. Users can search these databases directly or through intermediaries (such as library professionals). Databases that are available in libraries for remote access via online search or for local access via CD-ROM/ DVD-ROM can be categorised as:

- **Reference Databases**: They refer users to another source such as a document, an organisation, an individual or full text of a document. These may be grouped as:

    - Bibliographic databases: provide information on contents, location and summarisation through citations, bibliographic references and abstracts.

    - Catalogue databases: provide information on the stock of a given library or group of libraries. These databases generally include monographs, journal titles and other library materials.

    - Referral databases: Include directory type data such as the names and address of organisations or individuals.

- **Source databases**: Contain original source data and act as one type of electronic document. These are grouped as:

    - Numeric databases: Contain numerical data e.g. statistics and survey data.

- Full text databases: Contain databases of newspaper items, journal articles, patents etc.

- Alphanumeric databases: Contain textual as well as numeric data e.g. annual reports, handbook etc.

- Multimedia databases: Contain information stored in a mixture of formats (e.g. text, sound, video, picture animation etc.)

All the above mentioned databases are accessible remotely through online services or locally through CD-ROM databases.

Online Database Service

During the past 10 to 15 years, several related data processing and telecommunication technologies have evolved and merged to make fast, reliable and low cost online information services a reality. The components of any online database service include:

*Powerful time-sharing computers

* Interactive retrieval programs

* Telecommunication support

* Access privilege

* Machine-readable databases

* Fast , low cost terminals

* Fast access disc storage devices

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* Networks

These services provide facilities for retrospective search, comprehensive search, selective search, state of the art search, SDI search, ready reference search and patent search. The advantages of online searching are:

> **Speed:** Online retrieval is much faster than manual searching.

> **Currency:** Sources are updated before their published counterparts printed and distributed.

> **Comprehensiveness:** Provides access to many more information sources than even the largest libraries can support

> **Flexibility:** Supports interactive retrieval and permits many more access points than manual searching allows.

> **Convenience:** Allows retrieval from anywhere.

> **Cost effectiveness:** An in depth online search can be conducted at lower cost in comparison to an equivalent manual search of printed resources.

CD-ROM Database Service

Optical discs, particularly in the form of CD-ROMs have become important medium for storage and retrieval of information CD-ROM databases act as alternative information access system to online database services via telecommunication network and World Wide Web. CD-ROM databases can be accessed in a standalone PC (Single user-single CD-ROM) or over CD-ROM network (multi user-multiple databases). Multiple access to CD-ROM databases is provided through network file

server or dedicated CD-ROM server or jukebox system. CD-ROM databases contain bibliographic datasets, catalogues, source databases, reference databases or multiple databases. The selection of CD-ROM databases should be based on some well defined criteria, including database contents, currency, availability of back files, quality of retrieval software, user interface, printing and downloading facilities, SDI service facility, Data access time, cost and standardisation. Medline, Scisearch, Biosis Previews, Chemical Abstracts, are some examples well known international and national CD-ROM databases .

1.2.2.8 Web Based Information Services

The Internet is a global collection of interlinked networks, or a network of networks. It offers a gateway to myriad online databases, library catalogues and collections, software and document archives, in addition to frequently used store-and-forward services such as usenet news and e-mail .The resources available in the Internet can be accessed by a number of services such as Telnet, FTP, Gopher and World Wide Web (WWW).. Web can be utilised in library services as global publishing platform in two ways. Library local resources can be linked to the web for global users and can be organised global information resources available in the web for the local users. The web based information services may be discussed under two broad groups- general web- based information services and subject specific web –based information services.

General Services

Web includes a vast array of information resources, some of them are:

- **Listserv and Discussion Groups:** Includes a wide variety of topics and provides opportunity to exchange current information and conduct a dialogue.

- **Community Information:** These are local data related to weather, demography, tourist places, historical places, local events, transport etc.

- **Government Information:** Central, state and local self – governments are providing variety of information on web.

- **Library Catalogues:** Libraries are making their catalogues available over the internet from all over the world.

- **Commercial Resources:** Financial and commercial data are available from stock exchanges, brokers and other firms.

- **Bulletin Board:** These are electronic newsletters that provide news and factual information.

- **Patent Information:** Almost all the countries are making list of approved patents available through web site.

- **Electronic Journals:** Many primary and secondary journals (indexing and abstracting journals) are accessible through web. Some of these e-journals allow free full-text access. Directories of e-journals on various subjects are also available on the web such as PubList (http://publist.com/search.html) and BUBL (http://bubl.ac.uk/journals)

- **Electronic Books and Book Reviews:** Electronic books appeared first in CD-ROMs and now these are available through web. Many electronic books are produced that can be used only specific readers such as RCA e-book reader,

Adobe e-Book reader, Gamester e-books reader etc. Some of the significant e-book providers are net library of OCLC(http://www.netlibrary.com), Questia (http://questia.com) and ebrary(http://www.ebrary.com);

- **Thesis and Dissertations**: These unpublished sources of information are now available in the websites of universities for consultation and downloading.

- **Education and Training Material**: Course materials, interactive tutorials and multimedia presentations ranging from school grade to postgraduate grade are available in web for online and offline learning.

Web is a treasure of information. These information resources are either accessible directly through URL (Uniform Resource Locator) or by resource discovery through web searching tools. The web searching tools are categorised into three groups- subject directory, search engine and metasearch engine. Libraries generally offer directory based access to evaluated and useful information resources and web searching tools. These directories are often integrated with OPAC to provide single access interface to users.

Subject-Specific Services

Subject-Specific information resources are mainly available in the web through three channels- Academic subject directories, Subject gateways and Digital libraries.

Academic Subject Directories

Web directories organise digital information sources by using metadata schemas, bibliographic classification schemes or subject indexing tool. Some well known subject directories are:

Cyber Dewey (http://www.anthus.com/Cyber Dewey/CyberDewey html): It uses DDC in organising digital information resources. Selection of a Dewey class takes users to the specific subdivision of the class with items listed against each subclass.

INFOMINE (http://infomine.ucr.edu): It provides directory based access to several thousand web resources comprising databases, electronic journals, guides, text books, conference proceedings etc. INFOMINE uses Library of Congress Subject Heading list for indexing the electronic information resources.

Subject Gateways: Subject gateways is a web based information service that selects and organise valuable subject specific information available on the web, and let users access those resources through a custom-build interface. One of the reputed subject gateway services are :

BIOME (http://www.biome.ac.uk): It offers access to a searchable catalogue of internet sites and resources covering the health and life sciences. It is a combination of five gateways – OMNI, VetGate, BioResearch, NATURAL and AgriFor. It applies National Library of Medicine (NLM) classification scheme and Medical science Subject Headings (MeSH) for organisation of electronic resources.

Digital Libraries

Digital Libraries: In 1938 H.G. Wells dreamed of a world encyclopaedia in which all human knowledge would be available elsewhere. Today Internet in collaboration with digital libraries are moving fast to fulfil the dreams of H.G. Wells. A digital library is nothing but a large database of organized collection of multimedia, data that are globally available directly or indirectly across a network and eventually act as a portal

site providing access to digital collections held elsewhere for the people who are working on hypertext environment.

According to Lesk (1997) "Digital libraries are organized collections of digital information. They combine the structuring and gathering of information, which libraries and archives have always done, with the digital representation that computers have made possible."

Digital Library includes e-print archives, subject specific digital libraries and web sites related to theses and dissertations.

E-print archives play a key role in bridging the digital divide. It allows authors to store the electronic copies of their papers on e-print servers such as arXiv (http://www.arxiv.org), Cog Prints (http:// cogprints.soton.ac.uk), Mathematics arXiv (http://front.math.ucdavis.edu) and WoPeb (Economics) (http://netec.mcc.ac.uk/).

The two most prominent digital libraries that provide access to electronic theses, dissertations and scholarly publications are Networked Digital Library of Theses and Dissertations (NDLTD- http://www.ndltd.org) and Networked Computer Science Technical Reference Library (NCSTRL –http://www.ncstrl.org). NDLTD provides access to theses and dissertations from 122 universities around the world.

Subject-specific digital libraries are another significant achievement in the organisation of subject related electronic resources.

1.2.2.9 Digital Reference Services

Reference services refer to the personal assistance provided to users in pursuit of information. Reference service has remained the core theme of library profession over

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the years. The increasing availability of electronic information sources and services through web and digital libraries has altered the notion of traditional library services. The web-enabled reference services have many advantages:

- It combines reference works together at one website and makes them easier to locate;

- It achieves economics of scale in production and development by tackling a number of reference works; and

- It provides a common interface for collection of reference sources and allows meta-searching and cross-collection searching.

The available online reference and information sources may be categorised into three broad groups:

- Group I: Reference and information services from publishers, database vendors and specialised institutions

- Group II: Reference and information services provided by libraries and/ or experts through Internet

- Group III: Reference and information services where users need to conduct a search and find information through the web

Xrefer is an aggregated collection of reference works within structure of integrated reference links. It offers a framework of 'extended references' to users in navigating a collection of fully aid networked and integrated reference resources.

1.2.2.10 Trends and Future of Library Services

ICT has created great opportunities for the future of library services. Library professionals should be able to influence the shape of reference and information services. Library service providers have already incorporated a host of new tools, such as computer, modem, CD-ROM, telecommunication library services and the Internet, to help their patrons. Library services should aim to serve the community wherever it is located, whether in the library, at home, at work, or travelling around the globe because ICT expands the reach of the library to the community and the community's demands upon the library. As a result, libraries are changing from internally focused institutions to externally focused institutions by the application of ICT in designing library services. Three fundamental features will characterise the library services in future. These are:

• **Service to the community:** Serving the needs of the community is the sole reason for existence of libraries, and will be the sole measure of success;

• **Four basic functions:** Library services will be the products of four basic operations— instruction, assisting with research, recommending sources, and promoting the library in the community; and

• **Personal Service:** Personal service is that differentiates the library from other information providers. Therefore, librarians will continue to provide personalised service to patrons.

The forthcoming changes in various facets of library services may be predicted in terms of the following features:

• **Diverse community:** Today's communities are much more diverse ethnically, linguistically and economically than those of a century ago.Libraries will have to provide information resources and reference services to people of much wider cultural range than they do today.

• **Increasing demand for instructional services**: Future libraries will be complex information systems. Libraries will offer more information sources in different formats and more access points in an integrated but multi-nodal computing environment. In addition, Internet will provide direct access to an overwhelming amount of information. Under such circumstances, the demand for instructional services-as how to find and how to evaluate information sources will increase.

• **Decreasing demand for factual information:** Internet provides direct access to basic information on almost every topic. Patrons who use Internet can easily find simple facts without intervention by the librarian. This is reflected in the downward trend of reference statistics throughout the world. In future, librarians will receive complex and open-ended research questions that will require librarian's research skills.

• **Development of new tools:** While the basic functions of the librarian will remain the same, the tools with which those functions are performed will change considerably. Products such as Reference 24/7 and Virtual Reference Desk are beginning to make remote reference and information services as good as traditional in-person reference service. Technology will continue to provide us with new tools that make our services better and faster.

• **New role of librarians:** Librarians will perform the role of information generators rather than merely information conservators in future. Libraries are going to play a

greater part in the publishing process. Projects, such as SPARC (Scholarly Publishing and Academic Resources Coalition), Infomine, Librarian's Index to the Internet etc. are all attempts by librarians to take greater control of information production and/or dissemination. In future, libraries will be selecting, organising, servicing and creating information.

• **Virtual reference services:** It is the reference service initiated electronically, often in real time, where patrons employ computers and other Internet technologies to communicate with reference staff, without being physically present. Virtual reference service includes various communication processes such as chat, video conferencing, voice over IP (VoIP), co-browsing, e-mail and instant messaging.

• **Quality services:** Future library services will be designed in accordance with the principles of total quality management (TQM). Implementing TQM practices will enable libraries to obtain systematic feedback from users, and will ensure continuous improvement. In short, we can say that marketing and programme evaluation skills including thorough knowledge of quality management principles and practices will be as important as mastering the technology in our endeavour to retain human mediated assistance to users as an important library service.

1.2.3 Medical Library: Meaning and Concept

Medical college library is a distinct one among special libraries as it serves the specific need of specialized users but its nature is also an indicator of an academic library as it supports and supplements academic medical programmes. Hence, it comes in the category of special academic library. According to Beatty (1969), "the characteristics of a medical library can be summed up in the phrase active and imaginative service and research". Medical college libraries play an important role in

medical information and research. It is an information laboratory that presents one of the most important channels for new information entering into the institutions. It provides evidence to validate current scientific generalizations and the basis upon which to build new ideas

Matthews and Pickens (1979) say that medical library is that "which is concerned exclusively or predominantly with materials and information in the medical subject fields and which serves either exclusively or largely the members of medical profession or medical students".

Medical college library is particularly important in the educational process. Effective training in the complexities of modern medicine requires diligent self-learning. This can best be obtained by reading and working in medical college libraries. The medical education aims at transfer of medical information and knowledge generated to the memories of students as well as keeping the faculty cum practitioners abreast of latest developments. The library serves as a tool for the accomplishment of this task most expeditiously.

The objective of a medical college library is to assist the professionals in upgrading their knowledge and provides information of new innovations, views, theories and latest treatment for better patient care, medical education and research. It is the main channel to cater information requirements of the users. The overall functions of a medical college library include building up a comprehensive collection of medical literature; to organize and provide access to sources with the help of variety of tools, and to retrieve the vast and continuously expanding medical knowledge through multifarious library services.

1.2.3.1 Nature of a Medical College Library

Most of the medical colleges have teaching hospitals as appendages. Most of the hospitals do not have a separate library. Hence, the medical college library is the main source of information for the students, teachers and clinical staff working in various specialities. No doctor, whether a general practitioner or a specialist, can adequately treat his patient without being informed of new views, new explanations, new treatments, new theories, or new approaches in Bio-Physics, Bio-Chemistry, Enzymology etc. It is factually impossible for a doctor to collect the necessary information and read it adequately in the few spare minutes available to them.

As a consequence, medical libraries have a very heavy responsibility indeed. They must find the ways and means "to acquire the essential information, to organize and store it in such a way that is easily retrievable and actively promote its dissemination to those who may need it".

The medical college libraries comprehend three core elements. These are: library users, library resources and library services:

1. **Library user**: The user community of medical colleges consists of students (under-graduates and post-graduates), academicians cum practitioners and researchers. The emergence of super specialities, multi-dimensional and multi-disciplinary growth of medical knowledge multiples the information needs of the user. Undergraduate student's requirements include literature which provides basic knowledge of the subject of their study in the class. They need basic text books, reference books, journals and some reference tools, while postgraduate students need the latest information of world literature in relevant subjects together with advance information for their research work. Faculty

cum practitioners has a duel role of teaching and clinical practice. Hence, they require reference books, journals, indexing and abstracting periodicals, reports of meetings, conference proceedings, materials related to interdisciplinary aspects of teaching, changes in curriculum , organisation of courses etc.

2. **Library Resources**: The medical literature in a medical college library can be divided into two broad groups. i.e. Basic Medical Sciences comprising Anatomy, Physiology, Pharmacology, Bi- Chemistry, Pathology, Microbiology, Forensic Medicine and Community Medicine; and Clinical Medicine comprising General Medicine, Cardiology, Neurology, Urology, Otorhino-laringology, Radio-diagnosis, Obstetrics and Gynaecology etc. Hence, comprehensive literature, in any format that includes current information, reference information and information to cover marginal but important interests is essential for a medical college library.

3. **Library Services**: The services provided through conventional or unconventional means generally include provision of physical access to resources, document delivery service with the help of effective internal and inter library lending services supported by photocopying, reference service, current literature service by generating in house general alerting services and specialist SDI services and the user instruction service. In recent times, the charges in information environment led many of the libraries to switch over mechanized information retrieval and online searching.

1.2.4 Paramedical

Oxford Dictionary defines the term paramedical as "relating to services and professions (staff such as nursing, radiography, emergency first aid, physiotherapy,

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and dietetics) which supplement and support medical work but do not require a fully qualified doctor. Online answer.com defines paramedical as "relating to, or being a person trained to give emergency medical treatment or to assist physicians in providing medical care."

Paramedical Sciences has served as a lateral aid to the medical science, in terms of diagnosis and treatment of diseases. Their primary role is to provide advanced pre-hospital medical care to the patients. A paramedic can be defined as a person who works in a healthcare field in an auxiliary capacity to a physician. They are specially trained medical technicians certified to provide a wide range of emergency medical services. With the advent of technological development of medical sciences, several invasive and non-invasive tools were designed, that reported a sudden upsurge of trained paramedical manpower for the operation of these technical inventions in medical science. So there is a great demand of paramedical technicians in various medical fields in India and abroad at present.

1.2.5 Assam

Assam is a state of India in the North Eastern Region. Its capital is Dispur, located within the municipal area of Guwahati city. Located south of the eastern Himalayas, Assam comprises the Brahmaputra and the Barak river valleys along with the Karbi Anglong and the North Cachar Hills with an area of 30,285 square miles (78,438 km²). Assam is surrounded by six of the other Seven *Sisters States*: Arunachal Pradesh, Nagaland, Manipur, Mizoram, Tripura and Meghalaya, Sikkim.

1.3. STATEMENT OF PROBLEM

In the era of responsive governance and accountability, constant demand for services,

marketing of services and optimum use of resources decide the effectiveness of the library. In the libraries of medical colleges, funds are provided by the concern state government for acquisition of books, subscription of journals, computerization, and infrastructure development and for manpower by way of grants. .It is very evident from the discussion that college libraries are lagging behind particularly in providing user specific services. Services provided by paramedical colleges are very poor and access to the latest periodicals and other use ICT (Information and Communication Technologies) are unthinkable due to paucity of adequate finances.The users will be able to make maximum utilization of library facility when the library services will definitely prove to be useful for their informational, recreational and development needs. On the other hand librarians will be able to design services, provide facilities and acquire resource documents that users will use only when they know the expectations of the library users. Establishing direct dialogue between them can bridge this gap between the expectations of the users and the library managers' perception of expectations. At present there exists no formal channel of communication between the users and the librarians. Probably this may be the reason for underutilization of library facilities in medical and paramedical colleges.

The problems that have been identified from the survey are:

a) There is a wide gap in between the services required and the services provided to the users by the medical and paramedical college library.

b) Users are not satisfied by the services provided by the library.

c) Lacking of latest ICT enabled services.

The present study " Library services in Medical and Paramedical Colleges in Assam:

Analytical Study" is an attempt to analyze the services provided by the libraries of Medical and Paramedical Colleges with an objective to analyze the data and at the same time to suggest ways and means to improve the existing services .

1.4 NEED FOR THE STUDY

Medical and paramedical colleges and institutes promote medical education and research. The libraries of these colleges and institutes form the primary information support system for achieving the objectives of the parent organisations have placed before them. However, these libraries are facing the usual constraints like inadequate funds, untrained and inadequate manpower, high costs of resources, lack of integrated network at regional and national level etc. A wide difference persists between information support needed for research and educational programmes and the existing library services. Libraries of some of the colleges are still struggling to find their feet in their state of inception at the moment. So, there is need to study the services provided by the Medical and Paramedical colleges.

1.5 OBJECTIVES

The objective of a Medical or Paramedical library is to assist medical professionals in enhancing and updating their knowledge and skills, and to provide them information regarding new innovations, views, theories and latest treatment for better patient-care, medical education and research. The primary role of a medical library is to collect and organize recorded information in medicine and paramedical subjects to meet clientele's needs.

Medical and Paramedical libraries and their services are very important for the health care service provider doctors and other paramedical staff. Just as a healthy brain is

essential for a healthy human being, a medical library is an asset for promotion and advancement of health institution.

The study has been conducted with the following objectives:

- *To assess the existing resources, services and facilities in the government as well as private medical and the paramedical colleges in Assam.*

- *To ascertain users' opinion regarding usefulness and adequacy of library resources, services and facilities.*

- *To measure effectiveness of organizational environment, library services in terms of user satisfaction.*

- *To suggest ways and means to improve the existing library services to achieve user satisfaction.*

1.6 HYPOTHESIS

The present study takes into account synthesized model of library services. Various variables of library services are taken into consideration simultaneously to achieve a holistic view of quality library services. . For the purpose of this study, users have been classified into four group each, Faculty, Students, Research Scholars and Other Staff (including Administrative and non-teaching staff) respectively. The underlying assumptions are that library services of Medical, Paramedical user studying various parts of Assam will not differ. Keeping in view the above assumptions, following hypotheses will be tested.

- *Hypothesis 1: There is no significant difference in between the services provided by the government medical and paramedical colleges and private*

medical and paramedical colleges.

- *Hypothesis 2: College library is not important for medical and paramedical professionals.*

- *Hypothesis 3: Users of private medical and paramedical college library are less satisfied in comparison to the government medical and paramedical college library user.*

1.7 METHODOLOGY

Many studies have been conducted so far to examine the various issues regarding library services of medical libraries abroad and also Indian setting. But no comprehensive work has been done so far in Assam .So far, not even a single study has been conducted on Paramedical libraries in Indian setting. Hence the present study on the "Library Services of Medical and Paramedical Libraries in Assam: Analytical Study" has been choosn for research purpose. There is available various research methods to study the problem. But **survey research methods** are said to be the most suitable techniques presently available to assess the prevalent situations.

1.7.1 The Sample

For Survey, Questionnaire method has been used to evaluate the library service of Medical and Paramedical colleges in Assam. The population of the study includes library professional working in Medical and Paramedical college libraries and users. There are total 38 library professionals working in medical and paramedical colleges Assam. Out of that, 13 professionals are not available for following reason:

i) Some of them are on long leave for health problem.

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ii) Library professionals not appointed in the colleges.

iii) Not interested to provide library data.

iv) Proper library not available.

Therefore, questionnaires were distributed to remaining library professionals and collected twenty five (25) questionnaires personally. It was supplemented by the interview and observation. The data collection was done through December'11 to September'13.

As per the data provided by Directorate of Medical Education, Assam (2012) approximately 3080 students are studying in 23 government and 15 private Medical and Paramedical colleges of Assam. However, user questionnaires are distributed to 400 students of government and 350 private college users of Medical and Paramedical colleges. The questionnaires are distributed and collected personally. Each user is requested 2-3 times to return the questionnaire. Only 269 users of government medical colleges and 268 users of paramedical college user have responded making in 67.25% and 76.57 % respectively. So, all total 537(71.6%) samples are considered for data analysis.

1.7.2 The Assessment Method

For this, Primary data was collected using questionnaire methods. Questionnaire booklet are prepared "Questionnaire Booklet-1" (Appendix-1) and "Questionnaire Booklet-2" (Appendix –II) are to collect information on the prescribed format from the librarians and from users respectively . The users are the ultimate judge for the library services. Suggestions from them are also included to improve the services in existing libraries.

The data for the study are of two types-

- Primary Data

- Secondary Data

Primary data is collected using Questionnaire 1 & Questionnaire 2.

1.7.2.1 Questionnaire -1

A questionnaire "Questionnaire Booklet - 1" based on various questions related to the evaluation of library services are prepared. This questionnaire is personally administered to librarians or in-charge of the libraries identified for the purpose of this study. The researcher spent about two hours each with each respondent is explaining and helping them in giving appropriate and correct information. The information in the questionnaire was collected under five broad categories including the following details:

(i)   Budget of libraries during the last three years

(ii)   Library collections during the last three years

(iii)   Library services and facilities provided to the users

(iv)   E- resources and ICT relates services

(v)   Total number of library professional and library users.

There were total of 89 items, which were divided into five sections. A summary is given in table:

Table No. 1.2 Survey Questionnaire Employed in the Study

Sections	Measures	Items	Cumulative Items	Scales
1	General Information	15	31	Open Ended questionnaire
2	Information & Communication (ICT)	5	12	
3	Library Products	1	7	
4	Library Services	5	30	
5	General Comment	9	9	
Total			89	

1.7.2.2 Questionnaire Booklet- 2

Background Variables

In this section of questionnaire, consist of 7 items of background and general information.

A total of seven variables are identified to ascertain the background information of library users. These are age, sex, status and the discipline in the colleges, how important and useful is the library and how satisfied they are with the present library.

A questionnaire "Questionnaire booklet-2" based on a modified version of "University of Washington Faculty and Students Library Use Survey spring 2004" (University of Washington, 2004) was used to assign user's satisfaction of thirty eight libraries. "The UCONN library user Survey 1997" (University of Connecticut, 1997) and "Fong SumWood library User Satisfaction Survey 2009" (Lingnan University, 2009) was also used for the same purpose. These questionnaires were available online in the website and downloaded. A total 122 items were grouped into 12 broad

categories. Each items except sl no.1 & 12 were on 5 point likert type scale. The details are shown in table:

Table No. 1.3 Survey Questionnaire Employed in the Study

Sl. no.	Variables	Items	Cumulative Items	Scales
1	Background variables	7	7	**
2	Purpose of Visiting library	10	17	5=more often, 4=weekly, 3= monthly, 2=quarterly, 1=less often.
3	Importance of sources of information	6	23	5=extremely important, 4=very important, 3=important, 5=less important, 5=not important.
4	Importance of library collections	13	36	5=extremely important, 4=very important, 3=important, 5=less important, 5=not important.
5	Satisfaction of library collections	13	49	5=extremely satisfied, 4=very satisfied, 3= satisfied, 5=less satisfied, 5=not satisfied.
6	Satisfaction of library services	13	62	5=extremely satisfied, 4=very satisfied, 3= satisfied, 5=less satisfied, 5=not satisfied.
7	Importance of library facilities	13	75	5=extremely important, 4=very

				important, 3=important, 5=less important, 5=not important.
8	Satisfaction of library facilities	13	88	5=extremely satisfied, 4=very satisfied, 3= satisfied, 5=less satisfied, 5=not satisfied.
9	Use of information technology	8	96	5=extremely likely, 4=very likely, 3= likely, 5=less likely, 5=not likely.
10	Opening period of library	11	107	5=always, 4=frequently, 3= sometime, 5=rarely, 5=never.
11	Suggestion for improving services	12	119	5=extremely important, 4=very important, 3=important, 5=less important, 5=not important.
12	Overall satisfaction of library services	3	122	**

Note: ** Scale ranges 1-5 depending on the items.

The user satisfaction scale can be broadly categorized into six different groups.
These are:

(i)   Background variables

(ii)   Visit to the library

(iii)   Library collections

(iv)   Library services

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(v)   Library facilities

(vi)   Overall library satisfaction

As indicated from the above table no. 1.3, it is clear that the background variables are 7 and assessing the library on overall library performance has 3 variables. Rests of 112 variables are distributed for assessing library collection, services and facilities.

Secondary data in certain places is collected through various sources of publication such as magazines of the college, college hand book, dictionaries, encyclopaedia, reports and records etc. After collecting the data will be analyzed and interpreted by the various angles for Library Services of Medical and Paramedical Colleges affiliated to the Srimanta Shankaradeva University of Health Sciences (SSUHS).

1.8 SCOPE OF STUDY

The research concentrated on the following Medical and Paramedical colleges which have been selected affiliated under Srimanta Shankaradeva University of Health Sciences up to September 2013. The study also evaluated the data collected from the librarians as well as the user i.e. Faculty, Students, Research Scholars and Other Staff. The scope of the study is limited to the following medical and paramedical colleges in Assam.

Table 1.3.1 List of Medical and Paramedical colleges affiliated to SSUHS.

List of Affiliated Institutes under Srimanta Sankaradeva University of Health Sciences as on September, 2013

Institutes under Govt. Sector

1. Gauhati Medical College, Guwahati
2. Assam Medical College, Dibrugarh
3. Silchar Medical College, Silchar
4. Jorhat Medical College, Jorhat
5. F.A.A. Medical College, Barpeta
6. Tezpur Medical College, Tezpur
7. Regional Dental College, Guwahati
8. Govt. Ayurvedic College, Guwahati
9. Assam Homoeopathic Medical College, Nagaon
10. Dr. JK Saikia Homoeopathic Medical College, Jorhat
11. SJN Homoeopathic Medical College, Guwahati
12. Medical Institute, Jorhat
13. Institute of Paramedical Sciences, Guwahati
14. Institute of Paramedical Sciences, Dibrugarh
15. Institute of Paramedical Sciences, Silchar
16. Institute of Paramedical Sciences, Jorhat
17. Institute of Pharmacy, Gauhati Medical College, Guwahati
18. Institute of Pharmacy, Assam Medical College, Dibrugarh
19. Institute of Pharmacy, Silchar Medical College, Silchar
20. Regional College of Nursing, Guwahati
21. B. Sc. Nursing College, Dibrugarh
22. B. Sc. Nursing College, Silchar
23. Regional Medical Research Centre, Dibrugarh (for Ph. D. Programme)

Institutes under Private Sector

1. Army Institute of Nursing, Basistha, Guwahati
2. Ramesh Chandra Saharia Institute of Paramedical Courses, Tangla.
3. Sri Sankaradeva Nethralaya, Guwahati
4. Ridley College of Optometry, Jorhat.
5. Arya Nursing College, Changsari.
6. Asian Institute of Nursing Education, Ganeshguri, Guwahati
7. Assam Institute of Advanced Studies, Zoo Tinali, Guwahati
8. CPMS College of Nursing, Geetanagar, Guwahati
9. College of Physiotherapy & Medical Sciences, Guwahati.
10. Swagat Academy of Medical Sciences, Guwahati
11. Regional Institute of Paramedical Technology, Guwahati.
12. Asian Institute of Paramedical Sciences, Kahilipara, Guwahati.
13. Sankar Madhab College of Nursing, Panikhaity.
14. Down Town College of Allied Health Sciences, Panikhaity.
15. Dr. B. Borooah Cancer Institute, Guwahati.

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1.9 SIGNIFICANCE OF THE STUDY

The resources and services of libraries are channelized for users. The success of a library can be measured not by its attractive building or by well selected documents, but by the extent of use of its resources and services. It is important to know whether libraries are meeting the information needs of users. This study has been undertaken to ascertain the use of the resources and services of libraries in the Medical and Paramedical colleges by students, research Scholar , Teachers and other staff. It is also an attempt to find the users' awareness and effectiveness of library resources and services and their satisfaction with these services. It will be helpful to formulate policies to fill gaps wherever needed.

1.10 ORGANIZATION OF STUDY

The thesis is distributed into 6(Six) chapters for structured analysis and presentation of thoughts. The final chapterisation is as follows:

Chapter I – Introduction

The first chapter entitled 'Introduction' covers significance and purpose of study, statement of problem, objectives, hypotheses, the universe of study, study design and the limitations of the present study.

Chapter II – Review of Literature

The second chapter entitled 'Review of Literature' covers the development of the concept as found in the literature in the field of library and information science. The reports and research papers on the topic 'library services' are critically reviewed.

Chapter III- Medical Education in India

The chapter elaborates on the conceptual development of the idea of medical library service in library and information sector.

Chapter IV – Library Services in Medical and Paramedical Colleges in Assam: Survey Based

The data analysis and graphical presentation of all libraries surveyed is summarized in forth chapter.

Chapter V – Library Services and User Satisfaction: Survey Based.

This chapter deals with the issues related to User satisfaction on the services provided by the library.

Chapter VI- Finding, Suggestions and recommendations

Suggestions, recommendations and conclusions are described in detail in this chapter.