CHAPTER 2
REVIEW OF LITERATURE

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2.1 INTRODUCTION

The survey of related literature is very important for the purpose of a research project. Because, it helps in acquiring and tracing the comprehensive information about the subject. It is also important for the comparison of data. According to Busha & Harter (1980) the purpose of review of literature or literature search is to attempt to identify, locate and synthesize completed research reports, articles, books and other materials about the specific problems of a research topic. It enables the researchers to know about other research projects in a similar field, to narrow or describe research problem and relate the topic of research in the context of larger panorama. For the present study, a systematic review of the literature on the conceptual topic was conducted to identify related research and the development of medical literature, the concept of library service as well as trends in the assessment of library users' expectations. Literature review has been divided into following broad categories:

HISTORICAL BACKGROUND

LIBRARY SERVICES AND USER SATISFACTION

MEDICAL AND PARAMEDICAL LIBRARY

SERVICE EXPECTATIONS

2.2 HISTORICAL BACKGROUND

The history of medical literature can be traced to early 16th century when Symphorium Champier compiled a bibliography `De Medicines Claris Seriptoribus' which was printed at Lyons in 1506.

One of the earliest books of 19th century to make a lasting impression on the medical literature is Hemy Grey's Anatomy. The first edition was published in 1858.

The invention of the stethoscope not only led to Laennec's De I' Auscultation Mediate in 1819, one of the most influential books of the century, but it also became the first 'give-away' gimmick to accompany the sale of a book. Laennec's book had four French editions, seven English editions (the first in 1821), three German editions and an Italian edition.

Claude Bernard, the founder of experimental medicine, published many of his important research reports in the burgeoning journals, but his Introduction a I' Etude dela Medecine Experimentale, first published at Paris in 1865, probably ranks as one of the most stimulating works in the medical literature.

The age of modern medicine was ushered in by Die Cellular pathologic written by Rudolph Virchow in 1858. This was reprinted in 1966 and was translated in to English (1860) and French (1861). As a final example of the German medical literature of the 19th century may be the pioneering work of Wilhelm Conrad Rontgen. His classic contribution took the form of a 10 page article in rather obscure journal. Reprints of this article (which first appeared in 1895) are among the most expensive items in the history of the medical literature.

One of the major Russian contributions to the medical literature, Pavlov's lectures on the work of the principal digestive glands, was published (in Russia) at St. Petersburg in 1897. A French translation appeared in 1901 and an English version in the following year. During the 19th century medical literature in the United States was blossoming quickly and in many areas. Caspar Wistar wrote the first text in anatomy, the 2 volumes System of Anatomy, which was published in 1811 - 1814, Robley Dunglison's textbook of physiology came out in 1832. Benjamin Smith Barton's Elements of Botany (1812) was the first book on materia medica and therapeutics. The Massachusetts Medical Society produced the first general pharmacopoeia in 1808 and 12 years later also in Boston appeared the first pharmacopoeia of the United States. Samual Bard wrote the first textbook in obstetrics, Compendium of the Theory and Practice of Midwifery, in 1807. William Dewees is credit for the first United States texts in paediatrics (1825) and gynaecology (1826).

The United States produced several classics in the literature of medicine during this century. In 1812, Benjamin Rush wrote his medical inquiries and observations upon the *Diseases of Mind* which was not only the first American book in that field, but also ranks as a landmark in its subject.

In 1859, was published the first of six editions of Samual David Gross '*A system of Surgery*', two volumes that did much to raise the level of American surgery both practically and in the eyes of the rest of the world.

The first United States medical journal after the Medical Respiratory was the Philadelphia Medical Museum, founded by John Redman Coxe, which ran through 7 volumes between 1804 and 1811. This form of medical publication spread rapidly with the first medical journal appearing in Massachusetts in 1806 (Medical and

Agricultural Register), in Maryland in 1808 (Baltimore Medical and Physical Recorder), in Ohio in 1822, Connecticut in 1823, and South Carolina in 1825. As medical journals became more accepted by both readers and authors as a means of transmitting medical information, important articles began to appear and important journals began long runs. Ephraim McDowell's report of his classic ovariotomy was printed in the Electric Repertory and Analytical Review (7, 242-244, 1817).

The early American medical journals contained many articles on meteorological conditions, fevers, and surgical procedures. Later translations of articles (either summarized or complete) from the foreign journals often appeared. The Boston Medical Intelligencer was founded in 1823 by Jerome F. C. Smith as this country's first weekly medical journal. In 1828, it was merged with The New England Journal of Medicine and Surgery (which had begun in 1812) to form the Boston Medical and Surgical Journal. This, one of the leading medical journals in the country, changed its little in 1929 to the New England Journal of Medical, and now occupies one of the highest positions in medical journalism throughout the world.

English periodical medical literature was roused out of its quiet existence in 1823 by the appearance of Thomas Warkleys Lancet. Warkley believed in responsibility and progress in medical practice, education and journalism, and the Lancet provided an effective platform for his often outspoken comments and aggressive approaches. He backed his beliefs by court appearances as both a plaintiff and a defendant. He even carried his programs in to Parliament and was able to lead reform movements in several areas. During his controversial career Warkley kept the level of contributions in the Lancet high and it became deeply respected not only in Great Britain, but also throughout the world.

In 1857, began the other major weekly medical journal in England, the British Medical Journal (BMJ) the official publications of the British Medical Association, The BMJ has long maintained a worldwide reputation as an outstanding publication.

In 1846, appeared the first issue of the Australian Medical Journal, although it ceased the following year. After several other medical journals entered the field the present Medical Journal of Australia was formed by an amalgamation in 1914.

In France, the Archives de Medicine et de pharmacie militatires had a useful career from 1815 to 1882. The Archives Generate de Medicine ran from 1823 to 1914, making notable contributions under the editorship of Trousseau. The comptes Rendus of the Academic des Sciences and the Societe de Biologie, beginning in 1835 and 1849 respectively, and still being published, have carried many important medical papers.

In addition to the journals founded by Miller & Virchow, Germany was the source of many other important titles. Langenbeck's Archiv fiir Klinische Chirurgie in 1861; Wiener Medizinische Wochenschrift in 1851 and some other are still making worthwhile contributions to the literature. Among the early major Russian medical journals were the Moskowkye Medizhinskaja Gazeta 1866 - 1878, the Wojenao Medizinske Journal (Military Medical Journal) 1823 - 1907, and the Wratsch (Physician).

The birth and growth of specially medical journals has been, a phenomenon primarily of the 19th and 20th centuries.

2.2.1 The Twentieth Century

The Medical literature of the middle 20th century became essentially a journal literature. Articles in journals are now the standard method of announcing discoveries, new methods, and even new hypothesis. Speedy publications, wide circulation, and lower cost have all emphasized the journal over the book. This trend was evident toward the end of the previous century, and could be demonstrated in this century by such items as Joseph Goldberger's first major publication on pellagra in 1920. This was a 109 page report which most probably would have been published as a book earlier but which in the 20th century appeared as a journal article.

The book portion of the medical literature showed two major trends in the 20th century. The first was toward the comprehensive and detailed set, of which the German Handbücher are good representatives. The 12 volume Handbüch der speziellen pathologischen anatomie and histologie, edited by Henke & Lubarsch and published by Springer at Berlin, 1924 - 1952 was typical. The second was a continuation of the trend toward the highly specialized monograph. A classic of this century, Felix d' Herelle's Le Bacteriophage, published at Paris in 1921, exemplifies this trend.

Reference works of several varieties were frequent additions to the medical literature of the 20th century. These could be works that keep re-appearing, such as David Bergey's Manual of Determinative Bacteriology, first published at Baltimore in 1923 and now in its 8th edition, or a single appearance publication such as the World Health Organization's bibliography of years 1905-62, printed at Geneva in 1963. The publication program of WHO has made many worthwhile contributions to the medical literature.

Whether the journal will remain the chief form of the medical literature for the rest of this century and into the next is an unpredictable matter, although some trends at present suggest that it may not. The printing of separate tactics of a journal for each separate article has been tried experimentally. Related to this trend is the publication of only an abstract or a tightly shorthand version of the article with the storage of the full text in a central location to which readers may write for full copies, if they are interested. The medical newspaper is another new phenomenon in the literature.

Medical journals have appeared in microfiche rather than the traditional printed form. So far these have not been too successful, but as a new generation of readers comes along this form of publication may spread.

The audio side of the audio-visual approach has also entered the medical literature. More than a few journals are now available on tape. This is true of the digest type of publication as well as of the full length article variety. The audio method seems to have met with more favourable reader acceptance than the visual.

Books too are changing their format. The programmed learning text with its columns, boxes and variously sized and shaped pages, is a common sight. The next step is already being taken experimentally, the computerized non-printed text. In this case the text of a book is stored in a computer and never printed as a whole. When one of the authors wants to bring his section up to date he displays it on the terminal page by page, makes additions, deletions or corrections and send it back to the storage unit. When a reader wants a more permanent copy than the terminal display, he asks for the page(s) he wants to be printed out and sent to him.

2.2.2 Bibliographic Control

The Bibliographical Control of Medical literature started in 1506 when first bibliography was compiled by Symphorien Champier entitled 'De Medicinae Clarise Scriptoribus'. But the first 'giant' in medical bibliography appeared in the 18th century. Albrecht von Haller had compiled a 9 volume work, 'Elementa Physiological Corporis Humani', at Lausanne, 1757 -1782, in which he listed and annotated many of the publications in that broad field. This was, in a sense, a warm up for his four major bibliographies. The first of these, 'Biblio theca Botanica', 2 volumes printed at Zurich in 1771-1772, contained much medical material. The botanical volumes were quickly followed by the 'Biblotheca Chirurgica', 2 volumes, Bern, 1774 - 1775; 'The Bibliotheca Anatomica', 2 volumes, Zurich, 1774 - 1777 and 'The Biblotheca Medicainae Practice', 4 volumes, Basel, 1776 - 1788. These were arranged by broad subject, and then chronologically. Many of the items listed had abstracts. There was an author index.

John Show Billings who was not only realized the bibliographic needs of the users of the medical literature, but was able to work out practical publications to meet these needs and workable methods to produce the publications. The first volume of the Index Catalogue of the Library of the Surgeon General's Office appeared in 1880. The series was to have 60 more volumes before it ceased in 1961. *Billing* was able to make a vast amount of material easily accessible. (Encyclopedia of Library & Information Science).

Billing envisioned a frequently appearing series as a current supplement to the foundation of the Index Catalogue. The first monthly issues of this supplement, which was called the Index Medicus were printed in 1879. These issues covered

primarily articles from selected medical journals although some other material was also included. The text was classified, and the only indexes were the annual author and subject listings. *Robert Fletcher* assisted *Billing* with the production of the Index Medicus just as he did with the Index Catalogue. A carefully worked-out, team handled the processing of the materials and information.

The Index Medicus ran into financial difficulties at the end of the century (Ser. I, Volts. 1-21, 1879 - 1899), and sufficient income was not generated again until the Carnegie Institute helped out and made possible the continuation of this valuable tools. With the third series the Index Medicus became a quarterly and took on a subject arrangement with an annual author index.

The American Medical Association produced a similar index with its quarterly cumulative Index to current Medical Literature (Vols. 1-12, 1916 - 1926). The drain of finances and growing production time led to an amalgamation of this with the Index Medicus to form the quarterly cumulative Index Medicus (Vols. 1-60, 1927 - 1956), which had authors and subjects arranged in an easy-touch dictionary format.

With the demise of the Index Catalogue and the quarterly cumulative index Medicus a restructuring of the bibliographic mechanism was needed. The coverage of books was taken care of by the Army Medical Library (now the National Library of Medicine) with a sequence of annual and uniquennial catalogs leading up to the current catalog which began in 1966. Journals were indexed in the `New' Index Medicos, which began in 1960. This appears in 12 monthly issues and a bound annual cumulation of several volumes.

The mechanization project at the National Library of Medicine that developed along

with the new Index Medicos under the direction of Frank B. Rogers led eventually to the computerized MEDLARS (Medical Literature Analysis and Retrieval System) programme, which has speeded up the production of the Index Medicus and made computerized searching of the literature a reality, has also led to the development of MEDLINE (the on-line computerized program that provides access to the National Library of Medicines data banks) and to a variety of related programmes. Some of these services have been made available in England, Sweden and other countries. A greatly enlarged and improved MEDLARS II program has just been put into operation. The library has successfully tried out an experimental program with the use of a satellite for the communication of medical information. The State University of New York has developed a broad computerized program that provides bibliographic control for the access to a vast amount of the medical literature.

Abstract journals have provided another approach to the medical literature. Karl Christain Schmidt initiated Schmidt's Jahrbiicher der inund auslandischen gesamten Medicine in 1834. The Jahrbiicher met such a great need that they continued through 336 volumes until 1922. The Germans developed a network of bibliographic journals based on the Zentralblatter or Berichte in the different subject areas that provided brief abstracts, through their annual compilations (Jahresberichte or Jahrbiicher) to the review journals usually titled Ergebnisse. The major English language abstracting journal in the Excerpta Medica series which began in 1947 and has grown considerably. Indexing or abstracting journals are also found in France, Russia, Japan and many other countries (Encyclopedia of Library & Information Science).

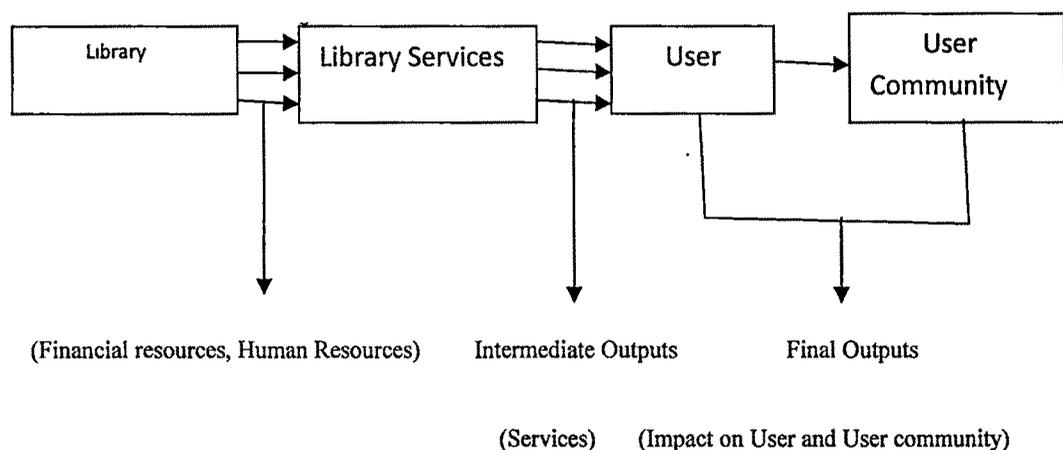## 2.3 LIBRARY SERVICES AND USER SATISFACTION

User satisfaction surveys are the basic tool to know the level of contentment of users

about library services. Generally such studies may be grouped into two categories. The first is to appraise overall satisfaction of library services and other is to evaluate the efficiency or the satisfaction about a particular activity or service of the library. The purpose behind undertaking such studies was to judge expectation of user and sought critical opinion of user so as to optimize the use of library and make retrieval of documents easier and comfortable.

Library is a service institution. The main goal or objective of any library is to provide library services and fulfil the information needs of the user. This objective can be achieved by traditional methods or with application of Information and Communication Technology (ICT). Evaluation of library services will determine the effectiveness of library and will identify the limitations and failure of the services. Rothstein (1964) reports among the different types of services, reference services get the maximum attention. A large number of studies discussed the measurement and evaluation of reference service. In 1991 Elzy et. al also evaluated reference service with the following objectives: a) to estimate the probability that a user walking into the library with a factual question , would receive or be led to a complete and correct answer (b) to identify conditions under which members of the reference staff perform well and conditions under which they perform poorly.(c) to determine to what extent the users of the library judge staff members to be responsive and helpful and (d) to identify ways in which the service might be improved .

The concept of library services and its various facets are constantly referred in the library science literature in various forms. To measure the quality the activities of any library can broadly be divided into two categories. The first is technical aspect like the acquisition, cataloguing, indexing and processing of documents so as to

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prepare them for service and the other is functional part i.e. the delivery of these documents to the intended users. In the research literature these aspects are refereed as 'Technical' and 'Functional' aspects and evaluated with different criteria for assessing the effectiveness of library services. In 1996, B.M. Meera suggested a model for effective library services. According to author the outputs of the library are of two types as shown in figure 2.1

| Library | → | Library Services | → | User | → | User Community |

(Financial resources, Human Resources)   Intermediate Outputs   Final Outputs

(Services)   (Impact on User and User community)

Fig 2.1: Outputs of Library

Intermediate outputs which could take the form of services generated from the system (loans, photocopies, reference services, SDI notices, etc.).Final output which relates to the impact of the services on individual users or groups of users and also on the total performance of the parent organization (advantage gained, time saved etc)

Initially, the term quality is referred in context of various techniques of cataloguing, classification, providing access to document, reference and referral services. The purpose is to measure the quantum of work done in the library. Further, statistical data like budget of library, number of documents purchased, journals subscribed, users who visited library, time spent in the library, documents issued and referred etc

were collected as input and output measures which become important indicators for assessment of library services. Evaluation of a library in terms of performance, effectiveness (commonly defined as the extent to which a system or service achieves its objectives) and cost benefit became markers of quality. Lancaster (1977) has provided theoretical base for many such evaluation studies which were based on quantitative data generated by the library. Most of such empirical researches are to judge the 'objective quality' of a library through effectiveness of various library services with reference to the use of library resources or its usefulness. To provide assured quality service and to measure the performance of library various indicators are developed which resulted in developing international standards.

The International Federation of Library Association has developed a standard set of parameters which are important for performance measurement for services in libraries. Derfert-Wolf, Lidia et al. (2005) conducted a survey for research libraries on comparable measures from the perspective of funding bodies, librarians and library users. It was clear that quality cannot be measured only by the services provided by the library but all aspects of library performance were also of very important for effective and efficient library management. Nitecki (2001) Reviewed theoretical background for assessing service quality in library and information field . Nitecki further argued that there should be clear and definite purpose for assessment of service quality in libraries, it may be for the development and improvement plans of library or to comply with the international standards like ISO 9000.

K.L. Mahawar (2011) explained the utilisation of the library services, frequency and purpose of internet use, awareness and time spent on the search engines and websites,

overall rating of the library/documentation /information/internet services, users opinion for improvement the library services and functions of research and academic institution libraries at Lucknow. Roshan Raina (1995) conducted another user study at Indian Institute of Management, Lucknow. The study reported that the students showed their satisfaction about collection, services offered by the library and use of Information Technology but they were not satisfied about reading space, shelving document and environment related issues. N. Parvathamma and Shanker Reddy(1985) conducted a survey on use of information services in the public libraries of Bidar District, Karnataka State, India ,showed that a majority of the users were men between the age group of 20 – 30 years and they included students, unemployed youth or employees in private sector, belonging to lower and middle income group. They spent less than one hour in the library and inconvenient timing was the main reason for not visiting the library more frequently. Books and magazines, friends/teachers and radio/television were the information channels most frequently used to satisfy their information needs. Newspapers and Magazines were the most frequently read information sources and fictions were the most frequently borrowed documents. Reading room and book lending services were the most frequently used services. The study concludes that since majority of the users are students and unemployed youth, public libraries need to enrich their information resource collection, provide access to internet and offer community-based services, including literacy programmes. According to A. Kumar (2004) there is a need to training new users like students, staff and researchers to make appropriate use of library and information sources and services available in library. Libraries need to take proactive approach in motivating users to use these resources and services to enhance their competence level.

Measuring the effectiveness of library services is the order of the day. In order to keep up with the current trends, libraries must constantly evaluate its functions. Evaluating through user perspective is result based. Because users are the ultimate beneficiaries and can suggest alternative measures to improve the existing facilities in libraries. Harinaryana and others (2007) have evaluated library services and gave some suggestions for improvement of college Libraries in Mysore city. Libraries are meant for users, but right to information provides rights to its users to get all essential information which may be restricted earlier. In 2008,V. Jain and S. Saraf discussed that now librarians are more accountable and disclose information for user's benefit . They also discussed library services in view of five laws, copyright laws and RTI act.

Poll (2001) used the Balanced Scorecard as an integrated quality management system. The users, finances, internal processes and potentials of the library services are four indicators used for balanced evaluation of library. The need of evaluation is to provide flawless service. Attempting to achieve the perfection in library service is the origin of six sigma concept which aims at highest user satisfaction. Originally the concept of Six Sigma was used in manufacturing industries. Today it is also applied to all service areas. According to Dong (2006) Six Sigma means "a systematic innovative activity to statistically measure and analyze causes of defects that happen in all part of management and then remove those causes". It is a methodology to define a problem from the managers' point of view and ascertain its causes in order to solve it. In the library field Six Sigma can be used to minimize errors and provide satisfactory services to the users.

In the library field assessment of library user needs and expectations are essential because happy users are propagating agents for library services. Only quality of service delivery leads to user satisfaction. Ranganathan(1931) in his Five Laws of Library Science has also enumerated supremacy of user needs. Therefore, satisfaction of users became important factor in measuring effectiveness of the library services. The scholars and the researchers in the field turned their focus towards user satisfaction.

However, it is noticed that the user satisfaction is an outcome of fulfilled desired expectations from the service quality. According to Snoj and Petermance (2001) perception of library user has great value because of growing importance of accountability of library services. Study of user perception bestows different views of an individual about library services in same situation which help the library administrators or managers to attract more users towards the library. Further, library administrators could make efforts to reduce the wide gap between users' perception of library services and actual services provided. The effective use of resources depends on the quality aspects which are alternatively dependent on qualitative data received directly from the users. Therefore, in the modern era the library management decisions are mostly user centred. Such data covers quality aspects such as effective library services, attitude of staff, attractiveness of library building, functionality of furniture, cleanliness of library etc. The library users decide such quality parameters and library administrators who aim at user satisfaction must attempt to know quality expectation of users so as to improve upon library management.

Berott (2001) studied overall library services of the network based libraries. He

has identified number of service quality criteria and finally suggested a Network Component Model for determining service of network based libraries. The networked components like technical infrastructure, information content, information services, support and management are evaluated against criteria of extensiveness, efficiency, effectiveness, service quality, impact usefulness and adoption. After extensive research and application of statistics and performance measures, Berott has identified issues concerned to application of statistical and performance measures are equally applicable to all libraries. The critical gap identified in the research demonstrates that there are no tested statistical methods for networked services and resources. The study concludes that multiple application of same data, evolving methodology and unavailability of systematic data collection efforts are essential on the part of the libraries. Further, he concluded that even in the networked environment Gap model of service quality SERVQUAL may be used and more rigorous, valid and reliable data should be acquired for evaluation of service quality in networked environment.

According to Shinde and Deshpande (2002) application of mobile technology in the field of library services can enhance user satisfaction. Mobile Communications Technology has become vital part of everyone's life and it has been used for learning called Mobile learning (M-learning). M-learning is an advanced tool which is considered as the next progressive step to e-learning. M-learning provides immediate access to learning, it allows more flexible, and immediate collaborative options for teachers to observe and assist in independent learning.

According to Tiwari and others(2006) web 2.0 tools could be applied in academic libraries to convert them A-Lib 2.0 or Academic library 2.0. Many academic and

special libraries in India are using Web 2.0 services; the major ones include IM, RSS, Book marking, Wiki, Social networks, etc. Library 2.0 has changed the traditional way of thinking about profession where library only engage in creating the content and services for user shifted to the side of user where librarian will enable user to create them for themselves. R.P. Mazumdar and Shuvajit Roy (2008) suggested that application of Blogs can improve the quality of Library Services. Beke and Szabon-Simon (1999) conducted a survey in medical library in Hungary which showed that the users were satisfied with the friendly attitude and services provided by the library staff but were not satisfied with the quality of collection and the opening hours of the library in the evening specifically.

2.4 MEDICAL AND PARAMEDICAL COLLEGE LIBRARY

A medical or paramedical college library is a special library as it collects, collates and organises specialised medical literature for supply to its clients. Clients consist of those persons who study in the college and teaching and non-teaching staff who make use of information for exploring new grounds in the field of their specialisation. The exponential growth of both the user community as well as of medical and paramedical information gave rise to the need for assessment of the services provided by the libraries and also the degree of use of these services by the medical and paramedical college community. Some studies have been conducted to trace out the availability of library facilities for medical and paramedical professionals of the country. Efforts have been made by the National Medical Library as well as individual scholars to study the status of medical libraries and identifying the lacunae, if any.

S.N. Vetal (1969) suggested that medical library being a special library should always

encourage co-operative projects because the literary needs and the library services required vary from those of other libraries. ASLIB (Association of Special Libraries and Information Bureaux) and IASLIC (Indian Association of Special Libraries and Information Centres) have so far take more active part than the library association in providing opportunity for the development of cooperative projects between special libraries. S. K. Anand (1976) made a case study on library facilities in a group of medical colleges in Chandigarh. The author recommended that there ought to be cooperation among the libraries in order to save money on expensive foreign journals. Joshi and others (1976) made another study on the user satisfaction in Medical College Libraries in Indore and results indicate that the overall service quality has a significantly high positive effect on the users.

An analytical study by Pathan (1977) compares the medical college libraries in America with those in India. A survey by National Medical College library (India) conducted by R.P. Dixit during 1979-80, reveals the inadequacies of information sources and services in the health science libraries.

In 1980, a survey of the libraries of the medical colleges, medical research institutions and various departments of medical and allied life sciences of universities was made by Satpathy and Mukhopadhya. This survey revealed that due to paucity of funds, insufficient library hours, inadequate staff and collection, the users of libraries were not able to get many essential facilities.

N. Advani and Gupta (1984) conducted a study to determine the most needed periodicals by the users of Maulana Azad Medical College library , New Delhi. The analysis revealed that approximately 20% of the journals subscribed by the college were not read during the period under their study.

Taber and Gupta (1984) in their study on the use of some selected reference sources by the medical professional at St. joint medical college library, Bangalore observed that while nearly 80 % of the clientele used Index Medicus, about 62 % of the users consulted Current Contents and only 24% used Excerpta Medicus.

In 1988, R.P. Dixit conducted a survey on the use, collection , and organisation of materials , circulations and reference services in National Medical Library. The findings revealed that the status of the apex medical library of the country was not conducive to the requirements of both students and teachers.

Similar deficiency was highlighted by another study undertaken by R.S.R.Varalaxmi (1993) in the medical college libraries of Andhra Pradesh. S. Padammall (2002) did a survey on JJM Medical College of Karnataka to ascertain the views of the users on the library sources, services and facilities available in their college. Ratnakar and Satyanarayana (2003) reviewed that financial crunch and ever rising cost of journals have constrained many scientific / research libraries, especially the medical libraries, to satiate the demands of the users forcing them to adopt new technologies to overcome the challenge of ever rising information demands of the users. In the recent years, library consortium has emerged as a viable solution for research sharing among the libraries. The consortia initiated by Indian Council of Medical Research share the resources of its medical libraries among its 25 institutes. Another survey of medical college libraries in Andhra Pradesh , India was undertaken by P. Srinivasulu and V. Pulla Reddy in 2010 and found that medical college libraries are unable to meet the requirements of user due to the increase in the cost of books and periodicals, insufficient budgetary provisions and increasing need of the user community. In this circumstances, there is need to share the existing resources among the libraries.

This studies on medical institutes have not only being conducted nearly in India but in other countries as well to cite examples, one such study in another third world country, Nigeria has been made by J.A. Ochelbi and Abbabuba (2003).This study reveals that doctors prefer the use of publishers catalogues as the most important source for new developments in their relevant fields instead of looking for latest materials in journals or other reference sources .

A study was undertaken in 2003 by Ashasha Singh and K.C Panda on the reading habits of health scientist of five medical colleges of Delhi and Lucknow. These study reveal that "the cult of reading" among the medical scientist of these colleges is not very much alive.

M. Ghosh (2007) feels a perceived need providing health information services through libraries to the illiterate rural population who are increasingly making themselves vulnerable to HIV/AIDS.

A study of information seeking behaviour of medical professionals working with PGIMER , Chandigarh and EHIRC , New Delhi was undertaken by K.P. Singh Sengar and J.N. Gautam in 2005 , the survey results highlighting the area in which some improvements are needed to cater to the need of these users in both the libraries.

N. C. Ghatak(2006) discussed the standards for the organization & dissemination of Health Science Library and Information Services in digital era. Library Services are cooperative and contracted arrangements to provide information resources in any electronic form or print form and it will be able to provide value added services to the client. In 2009, Chattopadhya and Chakraborti have tried out to find out the ways

and means for better accessing of health information. A survey on the health science libraries in Kolkata city has been conducted for this purpose. Various types of users in these health science libraries i.e. students, teachers, research scholars, doctors, nurses, hospital employees (both indoor and outdoor) have been covered in this study.The authors further suggested that library cooperation is the best policy to fulfil the present day requirement in the field of Medical Science. There should be a constructive approach from all corners of Management in the Library services: Human Resource Management, Financial management, Environmental Management (i.e. Library Ecology), Space Management, Time Management, Management of Change, Strategic Awareness and Marketing of Management.

Pamela J. Sherwill Navarro and others in 2004 evaluated the impact in the health care literature of research articles that provided evidence of the value of library services (including MEDLINE) as an element of quality health care.

Halkar(2007) found that Newspapers are considered as good source of medical science information. After going through 9 dailies (7 in English and 2 in Hindi) Halkar holds that the leading dailies contain more than ten percent health news and suggests their subscription to all health science libraries. He also suggested having at least ayearly cumulative health news bulletin in the form of books which would be very helpful to the health researchers, health administrators and other concerned with health.

Nyamboga and Ochieng(2008) discussed the current environment in which health information disseminated through the college library to the faculty of Moi University, Kenya. It also highlights the emerging trends that have influenced the provision of health information. The hurdles that compound document delivery and

possible solution are examined.

In 2008, Mahabaleshwara Rao and others reveals that with the advent of Internet and rapid development of other information technologies, there is a paradigm change in the quantity and quality of health information available to medical professionals. There is a plethora of information available on subjects such as medical conditions/disorders, treatments, drug and other therapies and research on the internet. Though internet has created new opportunities to improve decision making to handle typical cases related to healthcare, it has also generated many unprecedented problems. The changing nature of information distribution has important implications for health care: issues like the quality of care and the validity and consistency of available information. The quality of health information available on the internet is important, because it has the potential to benefit or harm a large number of people. They discussed the problems of a plenty of medical- related information available on the internet, and how to extract the quality information from the available information. They also recommend the development of technology based tools that support the assessment and development of quality health information on the internet. Kumar and Konnur (2006) found that libraries in India have to go long way to become IT based knowledge system or to call as Digital Libraries or Virtual Libraries. The Development, as it goes in India, to achieve integrated information services, on par with the capability of health care services, would remain as a dream. Majority of the libraries as per study are concentrating on legacy system both in evaluation of information services/resources in medical colleges and they are yet to change their mindset towards this traditional effect in the application of IT.

Harbour and Chowdhury (2008) made a survey among the Scottish people to find out how people in Scotland access and use online health information and found that use of Internet for health information was to be much lower in Scotland than in the previous UK studies particularly those using online surveys. It was noted that people searched online health information for themselves, family and friends. Approximately half the survey participants felt online health information influenced their treatment.

In this age of information society, there is huge amount of information and resources available on each and every subject field. The new technologies like World Wide Web and internet playing major role in increasing the number of documents and easy accessibility to its user. Though the open source movement is on in full swing and some of the publishers of the world have started publishing free of cost and make the documents available on public domain, but the cost of most the information resources is also hiking day-by-day specially the health science information resources. The organisations like health sciences institutions are mostly dependent on health science information resources for their educational and research oriented activities. The day by day increase in the prices of these resources by the publishers and deplete levels of financial resources of libraries has led to the problem of information divide especially in the developing countries. Only networking of group of libraries for the purposes of cooperative purchase and sharing of their resource can be best solution to this problem. Rajeev Manhas (2010) highlights the initiative taken by the Baba Farid University of Health Sciences, Faridkot for the establishment of network of all affiliated college libraries i.e. Health Science Libraries Network (HSLIBNET). K.V. Ratnakar, Prerna and K. Satyanarayana (2009) also discussed the consortia initiated by the Indian Council of Medical Research to share the resources of its medical libraries among its 25 institutes. L. Bayley and A. McKibbon (2006) surveyed

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medical/nursing schools and found that Librarians need to increase their reliance on sound evidence to support their programs and services. They also need to become more active and authors feel that librarians have the abilities to do this, especially if supported by their organisations and institutions with respect to medical education resources.

A study executed by Gajera and Udani (2013) on a pharmacy college library brought forward that the students are satisfied with the number of books on loan, quality and quantity of reference book collection. An analysis carried out by Kumari, et al. (2013) shows that resources of the library were found satisfactory among all the students. Senior students have more frequency of their visit to the library.

According to Mahabaleshwara Rao and others (2009) web is a major source of Medical information. Computer networks in general and the Internet in particular are likely to play more important roles in many aspects of medicine in the future. But for the healthcare professional and the health consumer, accessing accurate information on the web is not easy. There is a growing supply of medical resources for teaching and learning available on the world wide web. Most large medical centres have put information on public domain and some large organisations, such as the National Institutes of Health, have extensive databases and services that can be used by medical researchers, clinicians, and educators. They have made an effort to list the selected web recourses on medical sciences which are useful for learning, teaching, patient care and research activities of the medical institution.

In 2012, Kumar enumerates that national consolidation of published and unpublished literature in the field of medical science can play a major role in scholarly communication to help the end users in providing research published in the country

.Institutional repositories are a good approach for a cost-effective publishing with a cooperation and participation of each institution for capturing , preserving , managing, and nurturing the discussion. In turn, metadata can be harvested centrally to access the digital information of common interest whereas individual libraries should be able to preserve digital assets. Institutionalisation mode has been recommended for building national digital repository system for the country. The public funding should be provided to apex body so as to formulate the requisite policies for the spread of open access movement in the country and also formulate a long term sustainable model for building national level system in the country. His study has evolved a model with an institutionalisation called National Digital Repository System(NDRS) for intellectual capital through cooperative collection, storage and management initiatives with public fund at the initial phase and later as participatory model that can shape and support national consolidation in the country.

2.5 LIBRARY SERVICE EXPECTATIONS

Users are the ultimate judge of library services .So, it is necessary to know expectations . of users which are multiple and complex while evaluating performance of any library. The studies on user satisfaction also involve knowledge about expectations of service quality. User's satisfaction can be achieved by setting expectations through service charts, time taken for service, response time, service level attainments etc. The quality is achieved when users are satisfied and their expectations are taken care of. The quality service demands standards based on user expectations.

In 2001 Herbert reports on a study of interlibrary loan services in thirty eight large public libraries in Canada. He has studied both, the service itself and the perspective

of the library users and concludes that users expectations of service quality proved higher than their perceptions of the quality of the service they had received. Similarly the dimension reliability was ranked highest by users but scored lowest in performance. Herbert study was based on `disconfirmation' theory.

Browne and Edwards (2004) discussed a research project designed to develop a user centric approach to measuring the effectiveness of an information service i.e. the extent to which the service provided by the library meets or exceeds the users' expectations for an excellent or superior service on a consistent basis. The main question investigated was whether there were differences in the expectations that academics hold about information services provided by academic libraries, and librarians' perceptions of these expectations. The results of a survey of Australian universities showed that academics and librarians have similar expectations but there were differences in the emphasis each group placed on aspects of the service.

Philip, G. and Hazlett, S. A. (2005) have reported an empirical investigation which measured the quality of the information services those were available to the commercial and industrial sectors in Northern Ireland. The researchers examined the quality management practices of the business information providers and evaluated the quality of information and support as perceived by the business community. The research project developed and tested a new general survey instrument as an alternative to SERVQUAL. This new instrument had the ability to measure the quality gap that exists between the users' expectations of these information services and their perceptions of the actual service that was received.

Pors (2002) investigated some of the factors which influenced the students' perception about library services through a questionnaire survey. In all 2700

students from the Copenhagen area, Denmark, participated in the survey conducted in the autumn of 1994. The survey was conducted at the three departments of the Royal Library, two service points of the Copenhagen Business School Library, Copenhagen Municipal Library and one of its department. The survey explored in detail the relationship between expectations and perceptions of library users.

Seay *et.al.* (2006) reported an exhaustive study undertaken at Charleston College Library, North Carolina. The study was designed to analyze perception of library users to know quality of library services. Seven service dimensions like reliability, responsiveness, assurance, access, communication, security, and tangibles were used as the quality indicators.

Harwood and Bydder (2006) studied expectations and satisfaction of students with the Waikato University library New Zealand. The study reported the survey of customers about service quality for practical significance for setting up of academic audit process for the Quality Assurance Unit at the university. There were two surveys. The first was about the expectations and the second was to know about satisfaction of the services. The target group was 315 students for the first expectation survey and for second, 252 students for satisfaction survey. The tool was developed from the set of statements developed by Hernon and Altman (2007) and later further refined by Hernon and Calvert (2008). The responses were collected on the seven point scale from 'Not Important' to 'Very Important' along with some open ended questions. The results clearly indicated that there was certainly a gap between the expectations and the satisfaction. The students expected that reading materials should be in their proper place, catalogue card records should be proper, turn around time should be extended. The students also

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expected that good photocopy service and wide range of collection should be provided by the library.

In 2008 Zing reported detailed account of survey of expectations, needs and level of satisfaction of the faculty, staff and students of the college. The research concludes that the users expect that library should provide value added service to the users.

Local Study

The only study on Medical Colleges noticed by was Bijoy Bharali (2000) who studied "Information seeking strategies for Medical Practitioners in NE India" and not even a single study has been conducted on Paramedical Colleges abroad or Indian settings. Therefore, study on library services of Medical and Paramedical Colleges was decided for research. As such the topic for research is titled as "Library Services in Medical and Paramedical Colleges in Assam: An Analytical Study" undertaken by the researcher.