CHAPTER – I

1.0 Introduction

Online Medical Database is a computerized management system, created for the benefit of physicians, patients, clinics, and hospitals. Information needs are and knowledge seekers are met through a plethora of sources in the light of rapid changing world in the field of Information Technology. The digital resources available in a library play a prominent role in facilitating students for access to required information to the users in an easy and expeditious manner. Further, one need not go to the library to make use of print formats as the digital resource can be made use of by any user through online access via networks or authentication methods at any time by comfortably sitting at home or office. However, it is imperative that one should be familiar with the use and exploitation of digital resources for their quicker and effective usage. Further, digital resources can also be used for efficient retrieval. Thus, digital resources in a library play a significant role in academic libraries as they are mostly tuned for the advanced and promotion of academic excellence and research.

This study is concerned with the problem of awareness of Online Medical Databases of different categories of professionals working at different level and engaged in research and service activities. The rapid growth of publications available in the Medline and other sources raises the question how to search efficiently while maintaining acceptable relevancy. Without the assistance from domain experts such as medical professionals or librarians, retrieving relevant information from the Internet remains a difficult task. For bench scientists, it is important to monitor articles in their fields constantly on a weekly if not daily basis.

Databases are playing an important role in Medical Education; it provides up to date information to the users and also save the time of health science professionals in Literature search. Databases are the important tool in a library in retrieving the needed health information and thus helping the researchers working in various fields. A database is a collection of information that is organized so that it can be accessed
managed and updated. With the explosive growth of the Internet and the World Wide Web, the amount of information available online is growing in an exponential manner. As the amount of the online information constantly increases, it is becoming difficult to search and locate information in an efficient manner. Information overload has become a pressing research problem since current searching mechanisms, such as conventional search engines, suffer from both low precision and low-recall. It is clear that a more accurate searching methodology needs to be developed to overcome these limitations.

Some of the study and survey made by some scholars and experts regarding the accessibilities, search strategy and effective retrieval of information resources and usage of Online Medical information sources have been listed as below.

1.1.1 Perpetua Dadzie (1) observes that computer usage for information access was high because of the University’s state-of-the art IT infrastructure. Usages of some internet resources were also very high, whilst the use of scholarly databases was quite low. The low patronage was attributed to inadequate information about the existence of these library resources. The study recommends, among others, the introduction of information competency across the curriculum and/or the introduction of a one-unit course to be taught at all levels and the provision of more PCs on campus. Originality/value: Would be of value to library administrators considering how to determine level of use, type of information accessed, assessment of library's communication tools, problems encountered while using electronic resources.

1.1.2 Akatsu, and Kuffner (2) have reported that practicing physicians are frequently overwhelmed by the amount of new medical information. The internet is increasingly becoming an important vehicle for accessing that information with a variety of online resources for medical professionals.

1.1.3 Haygarth J and others (3) have stated the developments in on-line Information retrieval from the user viewpoint. Discusses the ease with which users can search data bases unaided, the changing role of the information scientist, implications for the information manager and electronic publishing.
1.2 History of Medical Literature

The Edwin Smith papyrus, the world's oldest surviving surgical document. Written in hieratic script in ancient Egypt around 1600 B.C., the text describes anatomical observations and the examination, diagnosis, treatment, and prognosis of 48 types of medical problems in exquisite detail. Plate 6 and 7 of the papyrus, pictured here, discuss facial trauma.

1.2.1 History of Index Medicus

The Medical Bibliography started in 1856 by Dr. John Billings, he was a Surgeon working for Armed Force of America, and he was made in-charge of the Library. During those days Medical literatures were scattered and many were duplicated. He initiated the process of bringing them under one roof and built up the collection of 52,000 pamphlets. Billings decided to index the collection by author and subject. In 1874, he began the work of indexing by subject the journal articles, books, thesis, reports, and pamphlets, to produce the comprehensive Index-Catalogue of the Library of the Surgeon-General.
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Accordingly, starting in 1879, Billings published the new items from medical journals as a separate, monthly current awareness service called *Index Medicus*. In those days, all issues of *Index Medicus* for an entire year, including both author and subject lists, easily fit into a single bound volume; they require 16 bound volumes today. The idea that each article in the medical literature should be indexed under the subjects discussed in the article would lead to the development of the MeSH that we use today.

In 1960, Rogers guided the publication of the newly revived monthly *Index Medicus* along with a freshly revised and expanded list of standardized subject headings. The list—called Medical Subject Headings, or MeSH—consists of single- and multi-word terms that are used to index and catalog the medical literature. This paper commemorates the 40th anniversary of MeSH—the controlled vocabulary, or thesaurus, that makes it possible to search the biomedical literature in the way we do today.

Main headings became more specific in subsequent editions, but MeSH continues to be used both in subject cataloging and indexing (a novel notion in 1960), and standardized topical subheadings remain a key feature of the MeSH vocabulary.

Each year, *Index Medicus* gets bigger. In 1960, the annual accumulation occupied three volumes. In 1999, the author entries filled six volumes and the subject entries another ten. To look up articles indexed under a particular topic over a span of years requires consulting many hefty volumes.

### 1.2.2 History of Online Databases

In the 1960s the system Development Corporation, one of the world’s first computer software companies and a significant military technology contractor, first used the term “data base” to describe a system to manage United States Air Force personnel. The term “databank” had also been used in the 1960s to describe similar systems, but the public seemed less accepting of the that term and eventually adopted the word “database”, which is universally used today. A number of corporations, notably with IBM and Rockwell at the forefront, developed
database software throughout the 1960s and early 1970s. MUMPS also knew as M), developed by a team at Massachusetts General Hospital in the late 1960s and was the first programming language developed specifically to make use of database technology. In 1970 the rational database model was born. Although this model was more theoretical than practical at the time, it took hold in the database community as soon as the necessary processing power was available to implement such systems.

1.3 Definition of Database

Data base is an organization of data files having information or reference material on a particular subject, or subjects. It is typically structured so that headings or keywords can be referenced easily, which permits efficient and simple access to-and retrieval of-records. The individual files are further structured into hierarchy of records and fields.

Database is defined as, data means—a raw material producing information, in other words that data needs to be managed in order to be available for processing and have appropriate quality. The term database means it is often used to refer to any data available for information processing or retrieval operations, the term implies a particular structuring of the data, both conceptually and in physical storage. The concept of Database is central to a management information system. A database is a mechanized, formally defined, centrally controlled collection of data in an organization.

A database is a mechanized, formally defined, centrally controlled collection of data in an organization. The data records are physically organized and stored so as to promote sharability, availability, Evolvability and integrity. A software system which performs the functions of defining, creating, revising data, updating data and building applications. Many different end users and a variety of application programmes can access the database, and it is desirable to have an organizational function and exercise control over the database. Database is Collection of structural and organized related information which is accessible to the user on demand in automatic search by the use of the computer (Gupta O P)21.
1.3.1 Online Medical Databases (OMD)

Online Medical Database (OMD) is a computerized management system established in 1979, created for the benefit of physicians, patients, clinics, and hospitals. Online Medical Database provides physicians not only with the possibility of real-time monitoring of their patients' health, but also with a comprehensive and easy-to-use interface designed from the point of view of its users. Unlike other applications, Online Medical Database is built upon a compatible which uses it and modular system. A system conceived to be adaptable to the needs and structures of each medical center.

Online: In computer information search when equipment is directly linked with central processing unit through communication line to connect available database.

“Online” means that, in accessing the systems, the use’s computer is directly connected by a modem and telephone line to the source computer containing the information. To search the database, the user must type particular commands or instructions in a form that the computer understands to find the needed reference and to display term on a monitor or print them.

Online Database: Continuous up dated database on any subject which can be used through communication links directly.

1.3.2 Medical Science Databases

There are several Online databases in the field of Medical Science, some of the important online databases that need to be mentioned are MEDLINE, Best Evidence Medicine, Cochrane Collaboration, EMBASE, MD Consult, Science Direct and Ovid-gateway etc., These are discussed in brief in succeeded sections.

Online Medical Database is a computerized management system, stated in 1979. Initially Online Medical Database created by the National Medical Library for the benefit of Medical professionals and Patients.
1.3.3 Important of Investigation in Online Databases

There are several health science databases are provided by the National Library of Medicine, Cochrane Collaboration, OVID SP and EMBASE, more databases from other vendors. Some Online Databases have full text (such as AIDSDRUGS, CANCERLIT, CENTRAL PUBMED, Science Direct, MD Consult, CINHAL etc. But end users should be aware of these databases and it is the primary duty of the Library professionals organizes various awareness programme on these. Davis, G. B. and Olson, M. H (22)

1.4 Need and Importance of the Study

Health Science Databases are growing at an alarming rate. To learn how to search efficiently and effectively the databases and how information is structured in them is most important to get targeted results. There are different types of online databases including bibliographic databases, full text databases and citations are available in general and in particular in the field of Medical Science. It is clear that, more accurate searching methodology need to be developed to overcome the limitations of accessibility. Databases are the important tools in a library in retrieving the needed health information and thus helping the researchers working in various fields.

The main purpose of this study is to determine the needs, search pattern Information gathering, and use of online Medical databases by the Medical Professionals. Professionals need to adopt newer teaching/training methods, and introduce innovative techniques to handle different online databases. There were no major survey undertaken earlier to study the general usage of Online Medical Databases, but one needs to know to what extent the existing Online databases services are used by the professionals and to know their problems and limitations in accessing databases. Therefore, the present study has undertaken to ascertain the above facts. The present study also aims to analyze the ways in which the professionals search the resources to collect the needed information. [Davis, G. B. and Olson, M. H (4)]
Karnataka State has 36 Medical Institutions imparting medical education to undergraduate, postgraduate courses. There are 10,000 faculty members assigned for teaching for 2225 Undergraduate students and 800 for postgraduates. Out of these 36 Institutions, 14 are located in Bangalore city, among them 7 Institutions are imparting undergraduate and Postgraduate courses and 7 Institutions are facilitating Super specialty courses in various branches of postgraduates. These 14 institutions have around 2100 faculty members and approximate 600 students involved in Academic and research activities.

The above 14 Institutions have well equipped Library and Information Centers facilitating students scholar and teachers by subscribing to various Medical Science Databases like Medline, Cochrane, EMBASE, ProQuest, MD Consult, OVID database, GP Med, Science Direct etc. Subscription to these databases calls for heavy investment on the part of the Management of the respective Institutions. Therefore, it is necessary that such huge expenditure becomes useful investment and that could only be achieved through maximum usage of these databases by all faculty scholars and students. The reviews of literature reveals that, very limited attempt has been made to know the extent of usage of E-resources in India in general Karnataka in particular. Therefore, it is felt necessary to know the usage of said databases, the pattern of usage and problems encountered while using these databases. This investigation will help us not only to understand the level of usage of these databases but also unfolds of problems of the users and thereby it would be possible to find out the ways and means of improving their usage.

1.5 Statement of the Problem

The present problem is conceived under the title “Use of Online Databases by Medical Science Professionals in Bangalore City” The present study in general intends to make an attempt to understand the information requirement of Medical Professionals and exam in how these requirement are fulfilled. Particularly this study will try to assess, to what extent the medical science databases subscribed by the libraries are being used.
1.6 Objectives of the Study

In the light of above discussions the following objectives of the study have been listed.

1. To know the various online databases and services available to the Medical Professionals.

2. To know the extent of awareness and familiarity of faculty, scholars and students with online medical databases, access tools related to their academic and research activities.

3. To assess the range of preference of online databases and which databases are highly preferred in their research activities.

4. To know the various skills, techniques and strategies adopted by the users to search and access the various Medical Online databases.

5. To design a model to assist the users in searching process and thereby enhance the use of online services by Medical Professionals.

6. To assess the frequency and extent of usage of online databases by Medical Professionals.

7. To know the various problems, limitations and barriers encountered by the users in accessing Online Medical Databases.

8. To find out the various remedial measures to overcome such problems.

9. To provide suitable and appropriate suggestions to enhance the usage of resources both qualitatively and quantitatively.

1.7 Hypotheses

Following hypothesis have been formulated for the present study.

1. Though there are many online databases are available the awareness and Knowledge of search strategies by users is poor.
2. The extent of awareness and familiarity of resources depends upon the type of users.
3. The frequency and extent of use varies from database to database.
4. The range of preference of databases varies from nature of databases and usage.
5. Organizing training and awareness programmes enhance the usage.
6. Various skills, techniques and strategies adopted by users to scale databases varies.

1.8 Methodology

The Investigation started with literature search on the area of research. Investigator searched LISA Plus database, Medline, OVID Database, Cochrane Library, J Gate database, and other related Medical databases. Important primary and research papers were consulted and covered in the study. Before designing a detailed and structured questionnaire a pilot study has been made to collect a required information and feedback from the respective users. After obtaining the relevant feedback a detailed questionnaire have been designed to collect the required information from the faculty, students and Librarian of respective Institutions of Bangalore City. The data collected have been analyzed and co-related with the data obtained from the questionnaire to improve the authenticity of the results.

The data collected through questionnaire has been analyzed with help of statistical package for social sciences (SPSS). Statistical methods like percentage, Chi-square and mean score were used. Chi-square (x): Chi-square (x) has been used to complete the difference in regard to non-metric data like age-wise, status-wise and institute wise distribution of sample. The results obtained have been presented in the different form of tables, Charts, Graphs and Diagrams etc.

1.9 Scope and Limitations of the study

The study intends to cover Medical Field and its branches like Surgery, Pediatrics etc., not its related areas such as Dental, Pharmacy, and Nursing. The databases covered under the study will be those subscribed by the Institutions. These include MEDLINE, Cochrane, EMBASE and MD Consult. The Geographical
coverage of the institutions is limited to Bangalore city and 14 Medical Science Institutions comes under the jurisdictions of Bangalore city have been covered in the present study. These institutions are offering Graduate, Postgraduate and Super specialty courses in various branches of the Medical Sciences. The users covered under the study are Postgraduate students and Faculty in the said Institutions excluding undergraduate students and guest users of the library.

1.10 Contents of the Questionnaire

Section – A: Demographic Information-Demographic characteristics of the Population:

In the demographic information not only the personal details but also Activities involved, like in Teaching, Research, Clinical practice, Diagnosis and Academic progress.

Section – B: Computer Literacy, Access and Location

In the section, familiarity with the use of Computer, where all do access, reason for not accessing, skill level of computer usage, how frequently use computer for Online databases search, how much time do take on an average per session to search, who does your literature search and how do you prefer to do your search.

Section – C: Knowledge and Use of Electronic Sources

In this section the first question was awareness of service at the Institute. Since how long have been accessing online databases, indicate usefulness of Online database, how often do you access online databases, frequency use of online databases, how important are online databases at your work, how often using general search engine, preference of downloading resources, difficulty of accessing electronic resources and what are the barriers or obstacles encountered in accessing online databases.

Section – D: Access Barriers, Training Needs and Support Service

Have you undergone training, how did you learn using online databases, who trained, aware of search field, aware of search symbols and hints, level of satisfaction with literature search, do you need training, what area need training in online databases,
skill level improve after training, preference to use print source or e-source and expectation of services and support needed from Library.

1.10.1 Organization of the Study

Chapter – I: Introduction, The topic of research explains a concept Online Databases and highlights the need and important investigation it states the problem define the concept and presents the objective of the study it also explains methodology, collection of data, and analysis the scope and limitation of the study will also be outlined. Further it provides a brief summary of the remaining chapters.

Chapter – II: will present detailed account of Online Databases, in the field of Medical sciences it describes their structured content and organization of each database it also provides various provision made to access information from these databases.

Chapter – III: presents a literature review on the topic of the research it covers studies carried on by scholars in India and Abroad on the use of databases in general and Medical science databases in particular.

Chapter – IV: gives a profile of 8 Institutions of Medical Science to be covered under the study it also provides data relating the collection facility and services in the libraries of these 8 institutions.

Chapter – V: is the heart of Investigation result, it presents primary data relating to use of various medical science database by the users. It provides data collected both from through the questionnaire and as well as from records.

Chapter – VI will be concluding chapter it presents summary of the findings and presents a model for improving usage of Medical Science databases. It also gives suggestion further research.
1.11 Summary

Biomedical scholars are increasingly turning to electronic databases (both bibliographic and full text) to find information. No database covers all the literature in any particular field, each of the database has some limitation. Users will have some questions like, ‘Do I have the right database to find required literature? Where to find the right database?’ There are some popular health science databases provided by the National Library of Medicine, Cochrane Collaboration, OVIDSP and EMBSO, in addition there are hundreds of more databases from other vendors. Select the right database for the best information. Some Online Databases have full text (such as AIDSDRUGS, CANCERLIT, CENTRAL PUBMED, Science Direct, MD Consult, and CINHAL etc. The end users should aware of these databases and it is the essential duty of the librarian to organize awareness and training programmes for the effective usage of E-sources.

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