

USE PATTERN OF LIBRARY & INFORMATION CENTRE BY MEDICAL PRACTITIONERS IN MEDICAL RESEARCH INSTITUTES AT BANGALORE: A STUDY

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Abstract: This paper is the result of survey carried out the utilization of medical college library by medical practitioners in Bangalore as pilot study. Here the researcher tried to trace the information needs of health science practitioners in medical research institutes at Bangalore city. With regard to the library usage 698 (97.20%) claimed that they visited the library to study and use web resources for research and reference work. 397 (56.90%) stated they are frequently visit to access web resources this is followed by 383 (55.50%) respondents to refer journals. The further results are usage of library, purpose to visit library, purpose to use web resource, difficulties in obtaining required information, and problems to access web resources in library.

Key words: Library, Medical Practitioners, Web Resources, ICT, Library Services.

1.0 Introduction

Information is an important natural resources, it is an indispensable raw material for performing different activities in all level of human life. Medical practitioners need up-to-date information because they are responsible for improving the principle of health by identifying and preventing the disease and curing of those disorders for which treatment exists. Medicine is the field of which encompasses a variety of [health care](#) practices evolved to maintain and restore [health](#) by the [prevention](#) and [treatment](#) of [illness](#) in [human beings](#).

Information is considered a vital resource for communication of knowledge of one individual to another therefore information is become an inevitable element of human activities and development The developments in information & communication technology now tries to satisfy the information needs of the human being in diverse manner. Faculty in medical practitioner requires a working knowledge of medical information resources to incorporate information resources into case studies and other teaching tools.

Librarians working in health science libraries have a wide range of information needs by the medical practitioner. It is the responsibility of libraries to satisfy the medical practitioners needs to be able to access and use resources with timely and accurate. As knowledge about the health effects of exposure to occupational and environmental chemicals increases, medical practitioners and other interested individuals need to be able to access and use resources that provide timely and accurate. To better understand the health information needs of medical practitioners and the methods by which they locate this information, the study is focused on those issues specific to use pattern of library by medical practitioners.

2.0 Health Information Seeking Behavior

The information needs of medical practitioners steam from a variety of factors including patient care, patient education, professional curiosity, and research. Additionally the rapid advancements in technology and science have expanded the knowledge base in all fields of medicine and health care. With the application of information technology and the advent of web-based services, contents are now available to health practitioners on their desktop. Health practitioners need to be in constant touch with new discoveries in the health practice. Libraries today are

more than shelves with books and providing access to online resources, such as e-mail, newsgroup, e-journals, online databases and e-books to users.

In 1991, Osheroff and colleagues developed a typology that assesses the information needs of medical practitioners, specifically physicians, by analyzing the questions posed during clinical teaching. They concluded that information needs are driven by the extent of a patient's problem, a patient's inquiry, the professional's knowledge base, and his or her level of awareness of available resources and curiosity to find out more information. The information needs of medical practitioners can be defined in following three components:

- i. Information that is needed for decision making and that is already known by the medical practitioner (currently satisfied needs)
- ii. Information that is not known by the medical practitioner but that he/she recognizes as being applicable to the decision-making process (consciously recognized needs) and
- iii. Information that is important to the circumstances at hand but that the medical practitioner does not realize is applicable (unrecognized needs)

Williams and colleagues (1992) categorized the information needs of medical practitioners by the reason that medical practitioners begin their search for information, to:

- Confirm or disconfirm existing knowledge;
- Assist in solving a new or unfamiliar health care problem;
- Update basic knowledge on a topic through review;
- Obtain information from another specialty when dealing with a patient or person with multiple problems;
- Highlight particular patient care concerns to other members of the health care team;
- Find out about a rare or unusual patient care problem;
- Determine whether a knowledge gap exists in the literature and whether a new research project or publication should be planned; or
- Assist in implementing new administrative or organizational initiatives.

Health practitioner due to the nature of their work teaching, research and in some cases clinical practice should have ready access to medical information. By their teaching styles and course requirements, they affect the use of the library's collection and students' perception of the library. Today the library services are transitioning from local traditional collection to global resources provided on demand via the most advanced networking technologies. However for the medical librarians have to bring more challenging technological issue demanding addition of more knowledge and skills to learn and new standards to fulfill the information needs of medical practitioners.

3.0 Review of Literature :

Patient care emerged as the primary reason for health information seeking information of health practitioners. Review of literature provides a brief review of earlier studeis on the topic by those in the field of library and information science studied by usage of medical library. Also highlighting their significant contribution and gaps in research.

Mabawonku and Atinmo (1980) assert that information which is presented pictorially improves learning in some circumstances, which can improve information use by Medical Practitioners. Johnson and Meischke (1993) note that individual information seeking has become a critical element in determining health behaviors. Al-Ansari and Al-Enezi (2001) conducted a study to assess the current status of health sciences libraries in Kuwait. Library facilities, use of IT, information services and co-operation were the various facets explored. Survey revealed that majority of the library staff was non-professional. Libraries were offering only basic information services and a significant number of libraries were not automated.

Agaba et al. (2004) examined the utilization of electronic information resources by the academic staff of Makerera University in Uganda. Author examined the users' awareness, type of resources provided and utilization of resources. It was found that majority of the staff was aware about the availability of electronic information resources but did not utilize them. Ratnakar (2009), studies about an overview of the consortia initiated by the Indian Council of Medical Research to share the resources of its medical libraries among its 25 institutes.. In the recent years, library consortium has emerged as a viable solution for resource sharing among libraries. Books, journals, audiovisual media, and other electronic resources can be used to disseminate information to professionals

MD. Sahak (2011) attempts to identify the usage of library services, resources and facilities. With regards to the library usage all respondents, 205(100%) claimed that they visited the library to study and use the Internet. They also frequented the library to do their assignments 199 (97.1%); discussions with friends 176 (85.9%) and for leisure reading 192(93.7%). Numerous studies have shown that medical professionals perceive their own collection to be the most accessible and will use those collections and libraries are offering significant number resources to their research and reference work.

4.0 Need and purpose of the Study

Bengaluru is the capital of India's southern Karnataka state. The capital have many well recognized Health Science Research Centers to be among the top medical research centres in India in the spheres of medical education, research and health care services. Medical practitioners need to be in constant touch with new discoveries in the health practice. It is indispensable to study the needs, availability and usage of information resources by medical practitioners. Naturally medical science professionals have varied information needs to provide a better teaching to students/treatment for patients.

This study aims is to describe an approach of use of library by medical practitioners. It is necessary to find, what the medical faculty and students prefer to get information from the library? What are the information resources and services available on the library? What is the awareness among the faculties of health science universities about available online health information resources? In this concern there is need for effective utilization library and information centers which provides a solution as well as information dissemination for healthcare practices.

5.0 Objectives of the Study

Specifically speaking this study has been carried out to achieve the following objectives.

- To examine the Medical Practitioners approach to the different type of information sources.
- To examine the information search done by Medical Practitioners for current information.
- To examine the availing of relevant information by professionals from library and information centers.
- To know the role of information media to fulfilling the information requirements of Medical Practitioners.
- To find out the information agencies and communicational channels used by professionals for exchange there required information with each other.
- To know the problems and difficulties faced by doctors in acquiring the needed information.
- To indicate the expectation of professionals on the existing medical information system

6.0 Scope and Limitations of the Study:

The present study attempts to trace out the information requirements of the pre-clinical, paramedical and clinical medical practitioners. Due to time limit, the study has planned to cover the academic and researcher who are located in Bangalore city [M.S. Ramaiah Medical College, Dr. B. R. Ambedkar Medical College, Rajarajeshwari Medical College and Hospital, Sathagiri Medical College and Research Center, St. Johns Medical College, KIMS, NIMHANS, MVJ Medical College, Bangalore Medical College, Jayadeva Institute of Cardiology, [KIDWAI Memorial Institute of Oncology](#), Vydehi Institute of Medical Sciences]. Since the study being conducted in a time bound situation only and sample of selected number of medical practitioners has been considered.

7.0 Methodology:

The survey method has been adopted for the study and well-structured questionnaire was distributed for collection of data for this purpose a suitable questionnaire was designed keeping in view of the objectives of the study. The questionnaire was assured the confidentiality of information they for the study. For this study investigator considered Medical Practitioners from various Hospital Research Centres in Bengaluru, the study aims to explore attitude towards library usage and use of electronic information resource by Medical Practitioners.

8.0 Results

Researcher was distributed 1000 questioners to medical practitioners and 718 questionnaires were returned duly filled with 71.80% of response rate. The data collected were tabulated and analyzed in the following table.

Table-1: Demographic Characteristics of Respondents

Demography respondents (n=718)		Number	Percentage
Gender	Male	567	78.97
	Female	151	21.03
Age	Below 30	184	25.63
	30 - 39	286	39.83
	40 - 49	164	22.84
	50 and above	84	11.70

Table 1 demonstrates the demographic characteristics of respondents. Data shows that out of 718 respondents 78.97% are male respondents and 21.03% are female respondents. 184 (25.63%) of respondents come under the age group of below 30 years considered as junior medical practitioners. 286 (39.83%) of respondents come under the age group of 30-39 years, 164 (22.84%) respondents are come under the age group of 40-49 years, 84 (11.70%) respondents come under the age group of 50 above.



Figure 1: Library Access & Usage

This survey attempts to shows out of 718 respondents, 698 (97.2%) of respondents visit library to get need information and 20 (2.79%) of respondents never use library for need information.



Figure 2: Library Access & Usage

Figure 2 describes the frequency visit made by medical practitioners to library, among the total respondents 159 (22.8%) of respondents visit library daily, 188 (26.90%) respondents are visit 2/3 times in a week, 189 (27.10%) of respondents are visit once in a week and 162 (23.20%) of respondents visit 2/3 times in a month for getting needed information.

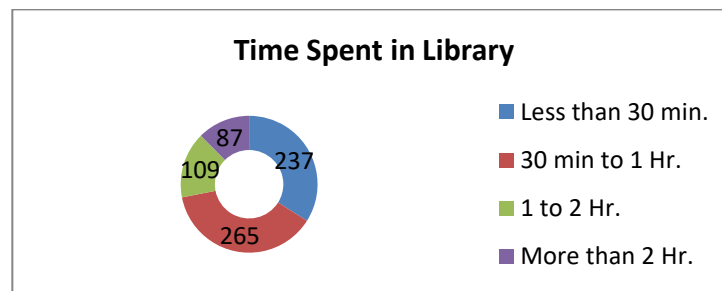


Figure 3: Library Access & Usage

Figure 3 represents the time spent in Library 2374 (34.00%) respondents spent less than 30 mins in a library, 265 (38.00%) respondents spent 30 mins to 1 hour, 109 (15.60%) respondents spent 1 to 2 hours and 12.50% of respondents spent more than 2 hours in library for getting required information.

Table 2: Purpose Of Visiting Library

Purpose Study	Most of the Time		Rarely		Never	
	R	%	R	%	R	%
Study	305	44.00	345	49.43	48	06.87
Book reference	328	47.00	284	40.69	86	12.32
Journal reference	383	55.00	283	40.54	32	04.58
Web resource access	397	56.90	285	40.83	16	02.29
To read newspaper / magazines	260	37.20	278	39.83	160	22.92
To take photo copy	353	50.60	280	40.11	65	09.31
To refer thesis & dissertations	264	37.80	351	50.29	83	11.89

It is revealed from the above table 2 that Out of 698 respondents 305 (44.00%) medical practitioners visit library most of the time and 345 (49.43%) medical practitioners visit library rarely for study purpose, 328 (47.00%) medical practitioners visit library most of the time for book reference and 284 (40.69) medical practitioners visit library rarely for book reference. Recent research is the most referred information by medical practitioners 383 (55.00%) medical practitioners visit library most of the time for journal reference, table shows that majority i.e. 397 (56.90%) of the respondents most of the time visit library to access web resources. 278 (39.83%) respondents rarely visit to read newspaper, 353 (50.60%) most of the time visit to avail photocopy facilities, 351 (50.29%) respondents expressed the rarely visit library to refer thesis and dissertations.

Table 3: Searching Methods of Source

Searching Criteria	Most of the Time		Rarely		Never	
	R	%	R	%	R	%
Title	286	41.00	306	43.84	106	41.35
Author	369	52.90	263	37.68	66	09.45
Publisher	86	12.30	209	29.94	403	57.73
Editor	93	13.30	107	15.33	498	71.34

Table 3 explores the searching methods to access resources in library, majority of the respondents i.e. 369 52.90%) most of time search through author, 286 (41.00%) respondents search through title, 209 (29.94%) respondents rarely search through publisher, 93 (13.30%) respondents express that most of the time they prefer on editor basis and 498 (71.34%) respondents said that they never search on the basis of editor name.

Table 4: Place of Access of Resources for Teaching

Location	Always		Most of the Time		Rarely		Never	
	R	%	R	%	R	%	R	%
Central Library	203	29.00	363	52.01	89	12.75	43	06.16
Departmental Library	87	12.00	94	13.47	329	47.13	188	26.90
Internet	209	30.00	387	55.44	86	12.32	16	02.29
Discussion with colleagues	87	12.00	349	50.00	178	25.50	84	12.00
Seminars/Conferences Workshops	43	06.20	63	09.02	276	39.54	316	45.30

It is evident from the table 4 that among total respondents majority of the respondents i.e. 209 (30.00%) expressed that they always access resources from the internet, followed by 387 (55.44%) respondents expressed that most of the time they access through internet. 203 (29.00%) of medical teaching professionals always use central library to collect resource for teaching, 52.01% of medical teaching professionals most of the time use central library to collect resource for teaching and 363 (52.01%) respondents agreed that most of the time they access through central library. Few institutions given a department library facility, through departmental library 87 (12.00%) expressed that they always access through departmental library and 329 (47.13%) stated that they rarely access from the departmental

library. further 349 (50.00%) stated that they get resources form discussion with friends / colleagues and 276 (39.54%) agreed that they get the required information from seminars / conference / workshop.

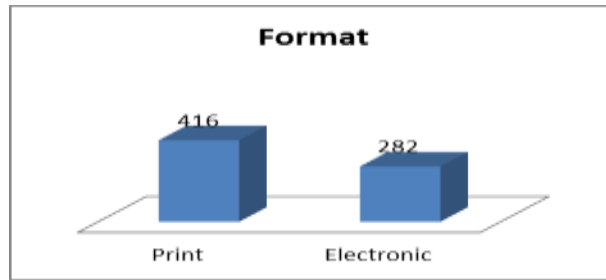


Figure 4: Most preferred information format for accessing information.

Figure 4 shows most preferred format to access information. Out of 698 respondents 416 (59.60%) medical practitioners prefer print and 282 (40.40%) medical practitioners prefer electronic next to print to accessing information.

Table 5: Most Preferred resource for Medical Practice

Sources	Most of the Time		Rarely		Never	
	R	%	R	%	R	%
Books	373	53.40	302	43.27	23	03.29
Periodicals / Magazines	317	45.40	286	40.97	95	13.61
Encyclopaedias	139	19.90	371	53.15	188	26.93
Dictionaries	299	42.80	301	43.12	98	14.04
Handbooks	147	21.10	362	51.86	189	27.07
Multimedia (CD/CD)	69	09.89	331	47.42	298	42.69
Government publications	53	07.59	387	55.44	258	36.96

Data from the table 5 explores the most preferred resources for medical practice purpose. 373 (53.40%) respondents use most of time books for specific information, 302 (43.27%) respondents rarely use book for specific information, 317 (45.40%) respondents use periodicals / magazines most of the time for medical practice and 286 (40.97%) rarely use periodicals / magazines. 299 (42.80%) respondents most of the time dictionaries for specific information, 43.12% of respondents rarely use dictionaries for specific information. Data reveals that 147 (21.10%) respondents most of the time and 362 (51.86%) respondents said they Rarely use handbook for medical Information. 69 (09.89%) respondents expressed that they Most of the Time use multimedia’s like CD/DVD and 387 (55.44%) respondents agreed that Rarely they use government publications as a medical information resources.

Table 6: Library Collection Satisfaction Level

Level of Satisfaction	Respondents	%
Highly Satisfied	87	12.50
Satisfied	238	34.10
Partially Satisfied	287	41.10
Not Satisfied	86	12.30

The respondents were asked to indicate their level of satisfaction that used library for their research purposes. It is evident from table 6 that majority of the respondents that is 287 (41.10%) partially satisfied from the library collection, 238 (34.10%) said thy satisfied from the library collection and 87 (12.50%) respondents said they were highly satisfied from the library collection and 86 (12.30%) mentioned that they were not satisfied from the library collection.

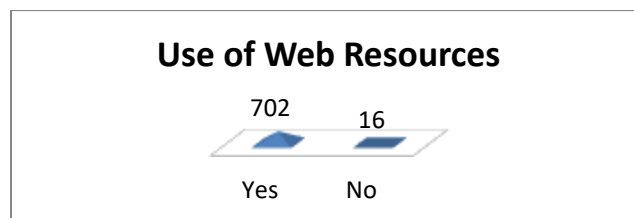


Figure 5: Library Access & Usage

The above figure 5 point out that among 718 respondents 702 (97.77%) respondents use web resources for required information and 16 (02.22%) respondents said that they haven't accessed the web resource for required information.

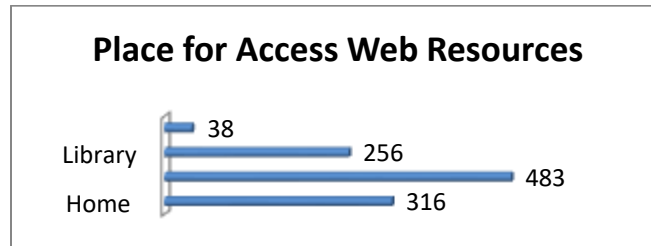


Figure 6: Place for Access Web Resources

Figure 6 represents the place to access web resources by medical practitioners 316 (45.00%) respondents access web resources at home to get necessary information, 483 (68.80%) users use web resource at department, 256 (36.50%) respondents access web resource at library to get necessary information and very few i.e. 38 (05.41%) respondents expresses that they access web resource at different locations to get necessary information for better treatment and teaching.

Table 7: Purpose of Web Resources

Sources	Most of the Time		Rarely		Never	
	R	%	R	%	R	%
Teaching Support	497	70.80	205	29.20	0	0
Writing Papers	341	48.60	268	38.18	93	13.24
Preparing for Lecturers	367	52.30	248	35.33	87	12.39
Undertaking Research	356	50.70	283	40.31	63	08.97
Improve Knowledge	231	32.90	363	51.71	108	15.38
Keep-up-to data	337	48.00	309	44.02	56	07.97
Answering Students Question	291	41.50	353	50.28	58	08.26

In order to assess the usage of Web resources researcher asked the purpose of using web resources, the data reveals that 497 (70.80%) respondents use web resource most of time followed by 341 (48.60%) respondents used for writing papers, 367 (52.30%) respondents used for preparing lecturers. It is observed from the table that 363 (51.71%) respondents rarely use web resource for improve knowledge. 337 (48.00%) respondent's uses web resources for keep up to data and 353 (50.28%) respondents used web resources rarely for answering student's question.

Table 8: Method of Learning of Web Resources

Method of Learning	Respondents	%
Guidance from Colleagues and Friends	276	39.30
External Courses	214	30.50
Self-Instruction	456	65.00
Training from College Library	523	74.50

The above table 8 indicates highest number of medical practitioners i.e. 523 (74.50%) expressed that they learned to access web resources through training from college library, followed by 456 (65.00%) learned through Self Instruction, 276 (39.30%) medical practitioners opinioned that they learned through guidance from colleagues / friends and 214 (30.50%) respondents learned from external courses to access internet for needed information.

Table 9: Preferred Tool for Web Resource Access

Web Resources	Respondents	%
Computer	690	98.3
E Book Reader	89	12.7
Laptop	366	52.1
Mobile Phones / Tab	259	36.9

Table 9 shows highest number of respondents i.e. 690 (98.30%) are professionals use computers to access web resource, 89 (12.70%) medical practitioners use e-book reader, 366 (52.10%) medical practitioners uses laptop and

259 (36.90%) respondents access web resource and 36.90% of medical practitioners use mobile phone/tab tool to access web resource for need information for better treatment or teaching.

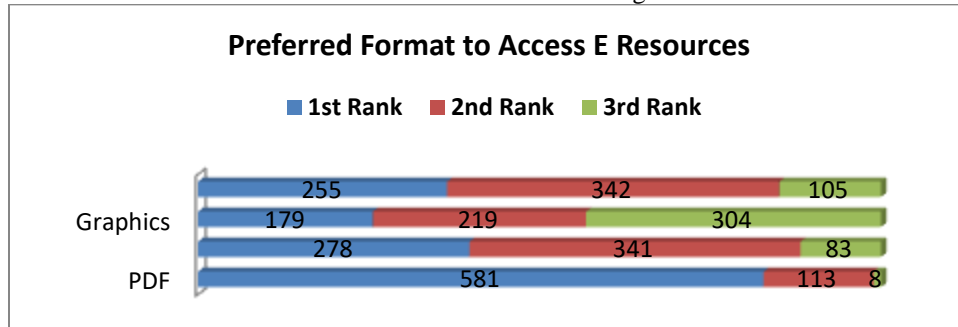


Figure 7: Rank wise format to access E resources

The above figure 7 represents the rank wise preference of electronic format for accessing information. Among 702 respondents 581 (82.80%) preferred 1st rank for PDF format, 341 (48.58%) users preferred 2nd rank for MS Word format, 179 (25.50%) users preferred 1st rank for graphics and 255 (36.30%) users preferred 1st rank for video format. It is evident from the table that majority of the professionals prefer Pdf format to refer for their research and development work.

Table 10: web resources access

Web Resource	Respondents	%
Through the Library Web Site	369	52.56
Using Search engines (Google/Yahoo)	659	93.87
Consulting Experts/Library Staffs	356	50.71
URL given in Journals	452	64.38

In order to test how does medical practitioners access web resources researcher point out the places of accessing web resources, table 10 shows that among 702 respondents 659 (93.87%) respondents told they were access through search engines like Google / Yahoo, 452 (64.38%) respondents expressed that they go through journal URL, 369 (52.56%) expressed that they access through Library Web site and 356 (50.71%) respondents expressed that they consult experts / library staff to access the web resources.

Table 11: Level of Computer Literacy

Level of Computer Literacy	Respondents	%
Expert	66	9.4
Above average	289	41.16
Average	231	32.9
Below Average	116	16.52

The table 11 describes the level of computer literacy of medical practitioners. 289 (41.16%) respondents expressed that they are above average in computer literacy, followed by 231 (32.90%) respondents are average 116 (16.52%) respondents are below average and only 66 (9.40%) respondents opinions that they are expert in computer literacy for accessing required information in web resource.

Table 12: Medias For Gathering Needed Information

Media	Respondents	%
E mail	256	36.46
World Wide Web	589	83.9
Social Networks (Whatsapp, Facebook)	186	26.49
Electronic Databases	613	87.32
Subject Gateways	316	45.01

This study attempts to know the various communication media used by medical practitioners gathering needed information. Table 12 shows in the sample 613 (87.32%) medical practitioners use E Databases, 589 (83.90%) medical practitioners use WWW 316 (45.01%) medical practitioners use Subject Gateways, 256 (36.46%) medical practitioners use E-mail and only 186 (26.49%) medical practitioners use social networks for gather needed information.

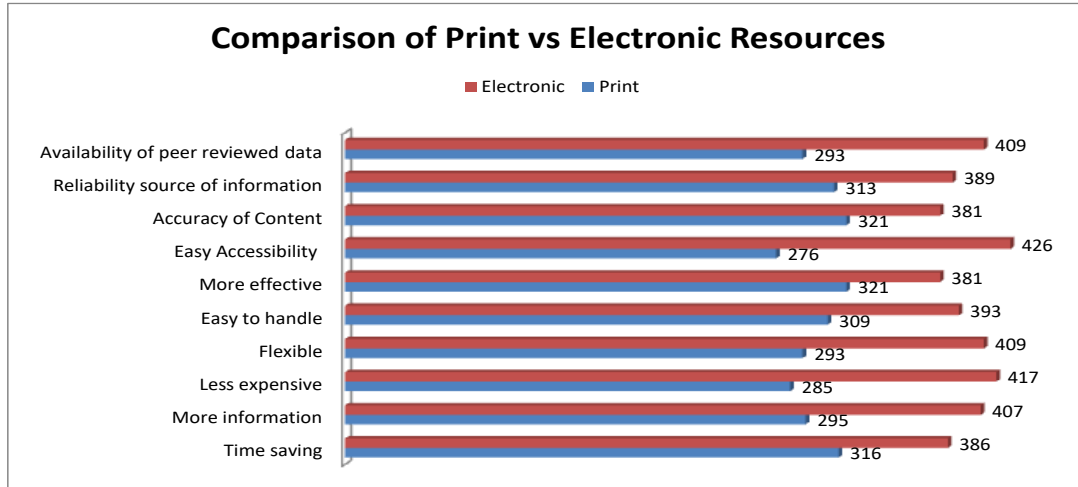


Figure 8: Comparison of Print Vs Electronic Resources

The respondents were asked to compare the print vs. electronic resources based on various factors. It is evident for the figure 8 that majority of the respondents prefer in all factors like Accessibility, Flexible, Cost, timeliness and other factors compared to print. The figure shows that 426 (60.68%) medical practitioners said electronic is less expensive compared to print, 417 (59.40%) respondents and 409 (58.26%) medical practitioners said electronic resources are flexible and availability is more compared to print.

Table 13: Referring e-resources for treatment / teaching

Information Resources	Always		Most of the Time		Often		Rarely		Never	
	R	%	R	%	R	%	R	%	R	%
E-Journals	152	21.65	196	27.92	176	25.07	145	20.66	33	4.701
E-Books	89	12.67	156	22.22	126	17.94	152	21.65	179	25.5
E-Conference Proceedings	22	03.13	56	07.97	73	10.39	155	22.08	396	56.41
E-Standards/ Specifications	41	05.84	63	08.97	89	12.67	166	23.65	343	48.86
E- Databases	136	19.37	126	17.95	190	27.06	201	28.63	49	6.98
E- Thesis and Dissertations	87	12.39	101	14.39	163	23.21	172	24.5	179	25.5
Subject Gateways	103	14.67	117	16.67	154	21.93	189	26.92	139	19.8
Social Networks	36	05.12	74	10.54	113	16.09	183	26.07	296	42.17
E- Reference resources	76	10.82	83	11.82	118	16.80	181	25.78	244	34.76
Students & faculty generated contents	18	02.56	51	07.26	69	9.829	88	12.54	476	67.81

Table 13 represents the formats of information resources for referencing for treatment and teaching in medical practice. Among the total respondents 152 (21.65%) of respondents said they always refer e-journals and 196 (27.92%) respondents expressed that most of the time they refer e-journals. 156 (22.22%) respondents said they refer e-books most of the time, 73 (10.39%) respondents said they often use e-conference proceedings. Electronic databases are most referred by medical practitioners as they cover latest R&D related information, 136 (19.37%) medical practitioners said they always use e-databases and 126 (17.95%) medical practitioners expressed that they most of the time use e-databases. 189 (26.92%) medical practitioners rarely used subject gateways, 296 (42.17%) medical practitioners said they never used social networks to refer, 181 (25.78%) respondents said they rarely use e-reference resources and only 88 (15.54%) respondents rarely use students & faculty generated contents for their clinical and teaching purposes.

Table 14: Familiar With Web Resources

<i>Web Resources</i>	<i>Respondents</i>	<i>%</i>
American Chemical Society	413	58.83
Biological Abstracts	510	72.64
Cambridge University Press Journals	359	51.13
Citation Index	281	40.02
EBSCO Database	481	68.51
Elsevier's Science Direct	698	99.43
Emerald	585	83.33
Helinet	701	99.85
MD Consult	695	99
Nature	613	87.32
PubMed/Medline	688	98
Royal Society of Chemistry	418	59.54
Springer Link	677	96.43
Taylor & Francis	588	83.76

Researcher given some of the important web resources related to medical sciences, the table 14 indicates that among the total respondents majority 701 (99.85%) medical practitioners familiar with HELINET consortium promoted by Rajiv Gandhi University of Health Sciences, Bangalore further 698 (99.43%) respondents familiar with Elsevier database, 695 (99.00%) medical practitioners familiar with MD consult for better treatment and teaching in medical filed.

Table 15: E-Resource Satisfaction Level

<i>Level of Satisfaction</i>	<i>Respondents</i>	<i>%</i>
Highly Satisfied	205	29.20
Satisfied	284	40.46
Partially Satisfied	159	22.65
Not Satisfied	54	7.69

Table 15 indicates the e-resource usage satisfaction, out of 702 respondent's 284 (40.46%) respondents satisfied in e-resource available in library and 205 (40.46%) respondents highly Satisfied with e-resource available in the library, further few 159 (22.65%) respondents said they partially satisfied and only 54 (7.69%) respondents said they not satisfied with e-resources available in the library.

Table 16: Difficulties in Obtaining Required Information

<i>Information Resources</i>	<i>Strongly Agree</i>		<i>Agree</i>		<i>Disagree</i>	
	<i>R</i>	<i>%</i>	<i>R</i>	<i>%</i>	<i>R</i>	<i>%</i>
Inadequate library resources	153	21.30	196	27.30	176	24.51
Inadequate library services	89	12.40	156	21.73	126	17.55
Information not readily available	22	03.06	56	07.79	73	10.17
Lack of modern technology	136	18.90	126	17.55	189	26.32
Lack of Searching Skills	87	12.10	101	14.07	163	22.70
Lack of time	103	14.30	117	16.30	153	21.31
Not aware of the availability of library material	76	10.60	93	12.95	124	17.27

Medical libraries have various types of resources, respondents were asked about mention the difficulties while obtaining the required information. Table 16 shows that due to inadequate library resource 153 (21.30%) respondents strongly agree facing difficulties in required information, 156 (21.73%) respondents are agree that they feel there is inadequate library services, difficulties in required information due to inadequate library services, only

56 (07.79%) respondents agree that information not readily available in the library. 136 (18.90%) respondents strongly agree that they are facing lack of modern technology. 163 (22.70%) respondents disagree for the factor that they have lack of searching skills, 117 (16.30%) respondents agree that they have lack of time and 93 (12.95%) respondents agree for they not aware of the availability of library materials which leads difficulty in obtaining the required information.

10.0 Findings and Recommendations

Major findings for this study included the following

10.1 Demographic Characteristics and Utilization of Library

- a. Maximum numbers of professionals are male (78.97% %).
- b. Majority of their age group in between 30-39 (39.83%).
- c. 97.20% of respondents access library facilities.
- d. 27.10% medical practitioners visit library once in a week
- e. In the library 38.00% respondents spent 30 mins to 1 hour.
- f. Most of the time respondents visit library for various purpose like reference of books (47.00%) & journals (55.00%), access web resources (56.90%).
- g. Majority of the respondents (52.90%) use author search criteria for required books.
- h. 52.01% of respondents stated that most of the time they access through central library and 55.44% of respondents claimed that they access from the internet.
- i. It notified that still 59.60% of respondents prefer print along with e- resource.
- j. Medical practitioners most of the time prefer books (53.40%) & periodical (45.40%)

Majority of the respondents (41.10%) stated that they partially satisfied from the library collection.

10.2 Awareness of Web Resources

- a) Almost all the medical practitioners 97.77% well aware of the web resources.
- b) Majority of the 68.80% access web resource at their department.
- c) Most of the medical practitioners use web resources for preparing for lectures (52.30%) and undertakings research.

10.3 Skills in Usage of Web Resources.

- a. 65.00% medical practitioner explained they learned through self-instruction.
- b. Most of the respondents feel Computer (98.30%) is the most preferred tool for access web resources.
- c. Majority 582 no. of medical practitioners prefers PDF is the most comfortable format.
- d. 93.87% of medical practitioners prefer search engines to access web resource.
- e. 41.16% respondents felt they have above average in computer literacy.
- f. World Wide Web (83.90%) is the most used format to gather needed information.
- g. Majority of the respondents prefer e resource compare to print in concern to accessibility, cost, time and other parameters.
- a. Medical practitioners were most of the time use e-journals, e-books, e-conference proceedings, and other e-databases for reference in treatment and teaching activity.
- b. Respondents using various web resources like Helinet (99.85%), Elsevier (99.43%), springer link (96.43%) and other web resources.
- c. 40.46% respondents satisfied in e-resource available in library.

10.4 Barriers of Electronic Information Resource Access

Inadequate library resources, inadequate library services, not availability of readily information, lack of modern technologies, lack of searching skills these were the major barrier preventing medical practitioners from access the web resources.

10.5 Recommendations

Based on the findings the following suggestions are made to improve the medical library services.

- It is recommended that the medical libraries should be built need based collection.
- For effective clinical practice medical practitioners have to review and regularly analyze resources available in the library.

- The adoption of ICT should be considered by medical libraries to provide the current information effectively to fulfil the complex needs of the medical practitioners.
- Appropriate action should be taken by media libraries to develop state of the art library services and effective consortium to share resources among libraries.
- User education is an important component of library services, it is suggested that library professional should adopt effective user education, orientation / training programme to retrieve the available resources in the library.
- Provide Wi-Fi campus service for enable easy access.

Provide facilities like digital library, off campus access and internet access facility for medical practitioners.

- Provide infrastructural facilities like separate reading room with better furniture (Cushion) & A/c.
- Health science professionals should be essential to visit the library at least once in a week to get current information.
- Current awareness regarding latest/ newly added books list should be display in notice board through social network sites.
- Library professionals must encourage through library promotion activities to update on health science field.

11.0 Conclusion:

The need for information is growing as natural result. The acquisition of relevant, up-to-date information is clearly of prime important to medical practitioners because they are responsible for improving the principles of health by identifying and preventing the disease and curing of those disorders for which treatment exists, and in all cases the improvement of pain and minimizing the disabilities. This study indicates the utilization of library medical practitioners from selected medical institution in Bangalore. The response to the survey showed that medical practitioners were well aware of library resources and services. Medical practitioner use web resources for the clinical practice. Despite the perceived benefits of e-resources related to ICT Infrastructure, lack of time, lack of modern technology is the major barriers to access. Even web resources are becoming valuable asset for medical college libraries to proactive in usage of web resources in medical practice for effective utilization of library resources and services by the medical practitioners.

12.0 References:

1. Agaba, D., Kigogo-Bukenya, I. M. N., & Nyumba, J. B. (2004). Utilization of electronic information resources by academic staff at Makerere University. *University of Dar es Salaam Library Journal*, 6(1), 18-28.
2. Liverman, C. T., Ingalls, C. E., Fulco, C. E., & Kipen, H. M. (1997). Understanding the Information Needs of Medical Practitioners. Retrieved from:<http://www.ncbi.nlm.nih.gov/books/NBK45472/>
3. Mabawonku, Iyabo and M. I. Atinmo, (1980) Audio-Visuals in the Health Care Delivery System of Oyo State of Nigeria. *West African Journal of Education*. Vol. 21 No. 3, 91-106.
4. Osheroff, J. A., Forsythe, D. E., Buchanan, B. G., Bankowitz, R. A., Blumenfeld, B. H., & Miller, R. A. (1991). Physicians' information needs: analysis of questions posed during clinical teaching. *Annals of Internal Medicine*, 114(7), 576-581.
5. Ratnakar, K. V., Prerna, & Satyanarayan, K. (2009). Consortia to Promote Access to Medical Information: Some Experiences of the Indian Council of Medical Research. *DESIDOC Journal of Library & Information Technology*, 29 (5).
6. Sahak, M. D., Saad, M., & Sharif, M. (2011). A survey on the use of library resources, services and facilities: a case study at the Faculty of Medicine and Health Sciences, Universiti Putra Malaysia. Retrieved from:
<http://ir.uitm.edu.my/8294/1/JIKM%201%281%29,%20127-139,%202011.pdf>
7. Williams RM, Baker LM, Marshall JG. *Information Searching in Health Care*. Thorofare, NJ: SLACK Inc; 1992.