E-RESOURCES: AS ITS APPLICATION AND USER SATISFACTION IN SELECTED MEDICAL LIBRARIES WITHIN KATHMANDU VALLEY

Thesis submitted to:
Central Department of Library and Information Science
Tribhuvan University
In partial fulfilment of the requirement for the Degree of
Master of Arts in Library and Information Science

Submitted by:
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LETTER OF RECOMMENDATION

This is to certify that this thesis submitted by Anil Raj Sharma entitled **"E-RESOURCES: AS ITS APPLICATION AND USER SATISFACTION IN SELECTED MEDICAL LIBRARIES WITHIN KATHMANDU VALLEY"** is an original work prepared under my supervision and guidance. I hereby, recommend this thesis for final approval.

……..

Mr. Bishnu Prasad Aryal

Thesis Supervisor

Date: .....

LETTER OF ACCEPTANCE

The thesis prepared and submitted by Anil Raj Sharma entitled "E-RESOURCES: AS ITS APPLICATION AND USER SATISFACTION IN SELECTED MEDICAL LIBRARIES WITHIN KATHMANDU VALLEY" has been evaluated and accepted as a partial fulfillment of the requirement for the degree of Master of Arts in Library and Information Science.

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Thank You

Anil Raj Sharma

DEDICATION

This work is completely dedicated to

My Family

ABSTRACT

This thesis entitled "E-RESOURCES: AS ITS APPLICATION AND USER SATISFACTION IN SELECTED MEDICAL LIBRARIES WITHIN KATHMANDU VALLEY" has been carried out to fulfil the partial requirements for the Degree of Master of Arts in Library and Information Science. An attempt was done to explore the status of core medical e-resource used in the medical libraries within Kathmandu valley. It tried to identify the weaknesses and strength of medical libraries in acquiring and handling e-resources efficiently as per users' request and interest. Similarly, user behaviour and satisfaction were also studied. The main focus of this study was to find out the Internet sites that are providing e-resources need of our medical professionals.

This study has been divided into six chapters, first chapter dealt with background information, second chapter dealt with literatures in relevant subjects, third chapter dealt with focus of the study; here different e-resources as well as the medical libraries under study were examined. Fourth chapter dealt with research methodology used to carry out the survey. The analyses of data obtained were presented in tabular form, charts, and figures where necessary for clarity. Sixth chapter dealt with summary, conclusion, and recommendations.

Medical libraries of five medical colleges within Kathmandu valley were chosen for the study. The population were users of those medical libraries who visited library during the period of March 4 and March 29, 2016 and were either postgraduate students or above. Two different sets of questions were prepared, one for librarians and another for users. One hundred questions were sent for users, altogether 76 users filled up the questionnaire and returned back. The information thus obtained, entered in IBM SPSS v20 for analysis and MS Excel 2007 to create figures for clarity.

According to the findings, medical libraries under study were found to be adequately equipped with necessary computer hardware, software and Internet speed to locate and download medical e-resources with support from IT professional. However, most of the librarians lacked knowledge about available e-resources. Financially, nothing had been invested beside infrastructure i.e. computer and Internet.

The users were observed to be aware in e-resources. Among them 42.1% visited library to use e-resources, 40.8% responded that they posses satisfactory online searching skills. For e-resources use, 32.9% felt considerable use while same percent used print and e-versions equally. Most of users used to visit Google or Google Scholar to find and locate medical articles. The students preparing for dissertation and those wanting to become abreast in one's field used e-resources most. Few of them were using it for treatment of patient as well. For medical articles users used to visit PubMed, Google / Google Scholar, HINARI, Medscape and UpToDate sites most. For e-books they look for free e-book provider, torrents, and HINARI the most. The format and device of choice were; PDF at 93.4% and PC or laptop computer and smartphone/tablets both are at 60.5%. For the inhibiting factors, 84.0% felt subscription to access, insufficient e-resources (60.0%), lack of knowledge about tools & technology and proper guidance were also blamed. The problems for its usage were observed to be unavailability of needed material (63.2%) and insufficient e-resources in subject of interest (63.2%). It was observed that users are not relying only on library computers, in fact they are bringing their own devices to use in quiet space of library.

Majority of users (43.4%) are just satisfied followed by 23.7% poorly satisfied with the e-resources provided through library. This indicates that the users are not well satisfied by the e-resources they are getting.

In the summary, the librarian and the users both needed exposure and training in e-resources availability and usability. Since not all of databases can be subscribed, subscribing the needed databases through consortium and resource sharing through network have been recommended to use it cost effectively. Free Wi-Fi Internet, quiet space, and uninterrupted electricity was what users were expecting from libraries, therefore, it is recommended too.

Keywords: e-resource, Internet, medical libraries

PREFACE

Information technology (IT) has radically changed the perspective of the whole information system, particularly with the emergence of computer applications. Health care workers are early in exploiting its benefits enormously in the developed world. But in the under developed countries, they are starved of the information that is of vital importance to health care. Information poverty is the most serious obstacle faced by health professionals in the developing world. Because healthcare professionals need high-quality information, medical libraries have been early adopters of electronic resources. There are many high quality e-resources available in the Internet as well as offline, but at an unaffordable cost for us living in poor countries. UpToDate, HINARI, Medscape, PubMed & PubMed Central, Cochrane Library etc. are few to mention. Except UpToDate, others are almost free to some extent. HINARI is one of them, developed to provide free of cost or at very low-cost online resource on biomedical journals & books and related social science literatures for low-income countries. It has been lifeblood for up-to-date medical information provider for Nepalese medical libraries. So it was felt to study what e-resources are being used most by our healthcare workers and what they wish to have in more cost effective way. This study tries to find out answer in five different medical libraries within Kathmandu valley asking different questions to the PG students or above.

The study has been organized in six different chapters namely: Introduction, Review of Literature, Focus of the Study, Research Methodology, Analysis and Presentation of data and Summary, Conclusions and Recommendations. The data collected were analyzed by using IBM SPSS v.20 software and MS Excel 2007 for tabular & graphical representation to make it clearer. Since this study has been carried out as a partial fulfilment of requirements for Masters of Arts in Library and Information Science (MLISc), it is confined by some limitations. However, maximum effort has been made to make the study precise. Thus researcher hopes that the study will be a useful document to know about the status of e-resources in medical libraries within Kathmandu valley in Nepal.

Anil Raj Sharma

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TABLE OF CONTENTS

CONTENT OF TABLES

CONTENT OF FIGURES

LIST OF ACRONYMS

AACR	Anglo America Cataloguing Rule
AGORA	Access to Global Online Research in Agriculture
ARDI	Access to Research for Development and Innovation
CME	Continuing Medical Education
DORA	Declaration on Research Assessment
DRM	Digital Rights Management
GNI	Gross National Income
HDI	Human Development Index
HINARI	Health Internetwork Access to Research Initiative
ICT	Information and Communication Technology
IOM	Institute of Medicine
ISO	International Organizations for Standardization
KMC	Kathmandu Medical College
LDC	Least Developed Countries
MBBS	Bachelor of Medicine and Bachelor of Surgery
MD/MS	Doctor of Medicine / Master of Surgery
MDGP	Doctor of Medicine / General Practice
MDR	Medscape Drug Reference
MeSH	Medical Subject Heading
NAMS	National Academy of Medical Sciences
NCBI	National Center for Biotechnology Information
NIH	National Institutes of Health
NLM	National Library of Medicine
NMC	Nepal Medical College
OARE	Online Access to Research in the Environment
PAHS	Patan Academy of Health Sciences
PDF	Portable Document File
PBN	Post Basic Nursing
PMC	PubMed Central
TUTH	Tribhuvan University Teaching Hospital
WHO	World Health Organization

CHAPTER I: BACKGROUND OF THE STUDY

1.1 Introduction

Information in this twenty-first century is vital commodity for everyone. It is key resource for the professional and institutional development for every faculty leading the world. The advancements in scientific research have led to the growth of new technologies in the field of information and communication. We are now more informed, entertained and educated than people in the past. Information and knowledge is rising in an exponential rate, organizing this information systematically was a challenge, necessity and opportunity. Library took that responsibility and doing so, it became a collection of sources, resources, services, and ultimately a hub in handling those information and knowledge. The individuals responsible for those tasks became experts in finding, organizing, managing, disseminating, and interpreting information more efficiently, subsequently were called librarians and a new field emerged as library & information science. Traditionally, libraries housed different manuscripts, books, and whatever printed materials it acquired in its developmental process. As it grew, more new sub fields became necessary for its survival and were emerged accordingly, subsequently it merged with information science to better organization, storing, and dissemination of knowledge.

In today's world, library cannot limit its services only in collecting, organizing, managing, and disseminating its collection to the patrons in traditional way. Providing online resources through Internet and computer technology is also very important services it has to offer to cope with the evolutionary advancements in information world. New information and communications technologies, as well as new educational models, require librarians to re-evaluate the way they develop, manage and deliver resources and services. (Johnson, Kay, n.d.) The emergence and widespread use of Internet and web technologies have made profound impact on traditional library operations, management and services. Libraries of all sizes and types are now adopting the latest technologies and innovations in order to find new ways to organize and manage information resources and to provide user-centred information services. (Tabassum, M. R. 2015). Thus, library must be connected to the Internet and equipped with necessary software and hardware to get online resources no matter whether it is

purchased or freely available. Internet is one of the most important and complex innovations of mankind and the most modern world wide system for storage and transfer of information (Wahid & Ali, 2010). Sources of information available via the Internet are increasing exponentially. This comes with a steady increase in Internet use for education and for research. (Thanukosdi, S. 2010)

The Internet, databases and the World Wide Web have helped to overcome geographical limitations associated with the print media. Furthermore, the time lag between production, publication and delivery of print media has been drastically reduced. The exploitation of the information and communication technology in medical science is enormous. Nepal though a poor and small nation cannot remain unaware about those innovations and acceptance of new technologies in the field of medicine. As the time passes by, the technologies being used are also getting cheaper and affordable, hence widely used and accessed by communities, earlier considered as poor, worldwide. Thus, access to digital resources is also available for them too, as long as they are connected to the Internet.

1.1.1 Internet

The Internet is a global network that links multiple networks, and through them, millions of individual computers around the world. Both, computers and Internet together produced the technological revolution of the late twentieth century. Since its conception, Internet has been proving its value and importance. Internet technology has also changed a lot. Its accessibility has been also changing as time passes by. It was developed through Advanced Research Projects Agency Network (ARPANET), a United States Department of Defence project in the late 1960s. There were networks established through cables and modems. Today, Internet has occupied a distinctive position in various spheres of human life. Its growth is spearheaded by mobile devices, which have increasingly become part of modern living as everyone wishes to be connected to the Internet all the time. This is possible owing to increasing availability of broadband Internet connection at a reduced cost, availability of more devices with Wi-Fi capabilities, technological affordability at lower cost, and high penetration of smartphones. The technological developments have made it possible for us to access plethora of services such as finding information, online shopping, booking tickets, navigating through maps and communication over email, social media and mobile apps.

But, the next revolution, where in the Internet, like mobile phones, different devices are going to occupy ubiquitous positions in our lives as it starts connecting things in the physical world and expected to have a big impact in the way we live. It is called "Internet of Things," connecting any object which includes everything from cell phones, coffee makers, cars, washing machine, air conditioners, lamps, wearable devices and almost anything else one can think of. (Pujar, S. M. & Satyanarayan, K V. 2015)

1.1.2 History of computer and Internet in Nepal

Computer was introduced in Nepal by then His Majesty's Government for the population census of 1972 (2028 BS). This was the second generation computer of IBM company called IBM 1401. The government had paid NRs 1,25,000/- per month as rent for this computer. An Electronic Data Processing Centre was established for that purpose, which was later called as National Computer Centre (NCC). Again for the population census of 2038 BS, ICL 2950/10 computer having 64 terminals was brought in Nepal with the aid of UNDP. After 2039 B.S. microcomputer like; Apple, Vector, Sirius were introduced in the capital. From that time onwards computers have been used in different government sectors like hospitals, banking, agriculture, universities etc. At present, Computer Association of Nepal (CAN) is the governing body of Nepal. In 1994, Mercantile Office Systems and Royal Nepal Academy of Science and Technology contracted an Internet feed from a site in India. Since the transmission was over cable, the quality of the line was very poor. Although, through 2010 less than 23% of Nepal's population used the Internet, use of the Internet in Nepal is still growing rapidly. This is the result of a competitive Internet service provider (ISP) market. (wikipedia.org)

Nevertheless, after Microsoft introduced windows based operating system, the development and wide use of computers and adoption of Internet was drastically increased, as it was easy to use and accepted by wide range of user community worldwide. Many researchers, academicians, and the consumers of information worldwide started to exploit its benefits. Similarly, the information production also gradually started shifting from hard formats (i.e. paper books, journals etc.) to soft (i.e. electronic) formats (Oyedapo & Ojo, 2013). Many of the information consumers use

personal computers, tablets, and smartphones to be connected with the Internet and use those devices to read and write for academic purposes. Similarly, the formats in which books, journals, and literatures were written or produced also found their way into those devices. It is a great leap forward from a letter being written in clay tablets, papyrus, clothes, or papers to a microchip. A person can now carry tons of books and journals in a small memory card of their choice in soft copy forms. Moreover, these devices and storage medium became cheaper and cheaper day by day for the users to adopt it economically affordable. Their scopes in these devices are highly appreciated. In this changing scenario, for its survival, library could not confine itself in providing traditional services only. They must adapt themselves traditionally as well as modern.

Most libraries will continue to offer both print and digital collections for many years to come, however, they have already started embracing digital collections. New purchases and purchases of books, journals, magazines, and abstracting and indexing services are heavily weighted toward digital, however, digital books (e-books) are only beginning to become a presence in library collections. (Tenopir, C. 2003). Electronic collections are suitable for libraries for many reasons, including, but not limited to, the following: (a) e-books and e-journals can be linked from and to indexing and abstracting databases; (b) access can be made from not only the premise of a library but the user's home, office, or dormitory whether or not the physical library is open; and (c) digital collections save space and are relatively easy to maintain. When total processing and space costs are taken into account, electronic collections may also result in some overall reductions in library cost (Montgomery and King, 2002). Apart from physical collection, many libraries also need to build their own collection with substantial amount of e-resources to meet the challenges. Moreover, the print formats are becoming expensive day by day and physical durability is more prone to deteriorate rapidly with considerable use by the library patrons. On the other hand, an electronic format of the resources doesn't have to endure such abuses met by physical format, although they have their own drawbacks. An e-resource can be delivered online whereas the print material has to be carried a long way and pass through a lot more vendors before getting into a users hand. The publishers of the electronic format also need not invest in printing presses and distribution system, which substantially reduces the cost of electronic forms.

1.1.3 Copyright

In this changing scenario, library faces new challenges in copyright issue, restrictions imposed by the e-publishers. The usages of electronic form by libraries, and the services through their collections are hindered by copyright law because, unlike with traditional printed works, the laws of digital copyright are still being formed and library couldn't be exempted, as everyone should obey the rule of law. The republication of material on the web by libraries may require permission from rights holders, and there is a conflict of interest between libraries and the publishers who may wish to create online versions of their acquired content for commercial purposes. The Fair Use Provisions (Under Copyright Act of 1976) provide specific guidelines under which circumstances libraries are allowed to copy digital resources. Four factors that constitute fair use are "purpose of the use, nature of the work, amount or substantiality used, and market impact." Some digital libraries acquire a license to lend their resources. This may involve the restriction of lending out only one copy at a time for each license, and applying a system of "digital rights management (DRM)." Proposals have been put forward suggesting that digital libraries be exempt from copyright law. Although this would be very beneficial for the libraries, it may produce a negative economic effect and authors may be less inclined to create new works.

Another issue that complicates matters is the desire of some publishing houses to restrict the use of digital materials such as e-books purchased by libraries. Publishers want to limit the number of times an e-book can be checked out before the library would need to repurchase that book. Harper Collins began licensing use of each e-book copy for a maximum of 26 loans. After the limit is reached, the library can repurchase access rights at a lower cost than the original price. From a publishing perspective, this sounds like a good balance of library lending and protecting themselves from a feared decrease in book sales. (wikipedia.org)

In the United States' Digital Millennium Copyright Act of 1998, the prohibitions contained are subject to a number of exceptions. One is an exception to the operation of the entire section, for law enforcement, intelligence and other governmental activities. And first of the six additional exceptions is for non-profit library, archive and educational institution, which states "The prohibition on the act of circumvention

of access control measures is subject to an exception that permits non-profit libraries, archives and educational institutions to circumvent solely for the purpose of making a good faith determination as to whether they wish to obtain authorized access to the work."

In the Copyright Act, 2059 (2002) of Nepal, reproduction is allowed for teaching and learning which states "The following acts may be done for teaching and learning activities without authorization of the author or the copyright owner in a manner not to be prejudicial to the economic right of such author or owner: (a) To reproduce a small portion of any published work by way of citation, writing or audio-visual aid (b) To reproduce, broadcast and exhibit some portions of the work for purposes of educational activities to be performed in the classroom. All copies reproduced pursuant to sub-section have to indicate the source and the author's name." Reproduction by library and archives: "A public library or archives, which makes available the work stored in it at the request of a person doing research or study without deriving economic profits directly or indirectly, looses any work with it or such work is destroyed or is old or is incapable of being obtained, it may reproduce one copy of such a work without authorization of the author or the copyright owner of such work."

The library is also seen as a source of training and guidance to a community of learners who are concerned with navigating the complexities of locating and using e-resources and services. Moreover, the move toward an online environment has resulted in a shift from the systematic one-to-one information flow of the past to a new model of information in many-to-many, dynamic relationship. (Johnson, Trabelsi and Tin) Internet technologies permit the widespread distribution of digital content to many users simultaneously anytime and anywhere. (Ward, JP 2001)

In a digital library, materials including text, visual material, audio material, images, maps, are stored in electronic media formats (as opposed to print, microform etc.), along with means for organizing, storing, and retrieving the files and media contained in the library collection. The electronic content may be stored locally, or accessed remotely via computer networks from a centralized sever (wikipedia.org). The term "digital library" was first popularized by the NSF/DARPA/NASA Digital Libraries Initiative in 1994. The term virtual library was initially used interchangeably

with digital library, but is now primarily used for libraries that are virtual in other senses. A distinction is often made between content that was created in a digital format, known as born-digital, published online before print versions, and information that has been converted from a physical medium, e.g. paper, through digitization. The term hybrid library is sometimes used for libraries that have both physical collections and electronic collections. For example, American Memory is a digital library within the Library of Congress. (wikipedia.org)

Medicine is among many other sciences, an area in which the expansion of information is enormous and is critically dependent on up-to-date information. Library and information professionals should take initiatives to prepare list of e-resources and their techniques for retrieving relevant information. (Thanukosdi, S. 2010). E-journals and e-books are presenting librarians with resource management challenges. Electronic resources require commitment of a significant portion of the library's budget. The most central component is the staff time and expertise that must be dedicated to the selection and maintenance of e-resources to provide a high quality array of e-resources for library users. A robust electronic resource collection results only from a strong commitment from the library, collaboration between library staff and other partners, and communication with library users. (Simpson, S. N. [et. al], 2005).

There are different sorts of e-resources available in the Internet, paid and unpaid. Like, Program for the Availability of Research Information (PERI), a program of the International Availability of Scientific Publications (INASP), HINARI Access to Research in Health Programme, AGORA (Access to Global Online Research in Agriculture), OARE (Online Access to Research in the Environment), ARDI (Access to Research for Development and Innovation) and eIFL (Electronic Information for Libraries). Many paid e-resource databases are expensive for underdeveloped countries like Nepal. Few medical students and very few researchers in the developing world can pay the usual fee of US$20–US$45 to download one article. Not even some private universities can afford the minimum journal subscription rates, even though these subscriptions would help the universities to become less isolated from global medical research (Villafuerte-Gálvez, J. et al. 2007).

1.1.4 HELLIS

HEELIS, Health Literature Library and Information Services, is a network system among the 10 member countries of WHO South-East Asia Regions: Bangladesh, Bhutan, DPR Korea, India, Indonesia, Maldives, Myanmar, Nepal, Sri Lanka and Thailand. HELLIS network is an effective mechanism for health literature / information support to health team and researchers in the region. In August 1979, World Health Organization had introduced the HELLIS network programme within SEARO with a vision to support in providing the health literature to its member countries for upgrade of health services. In 1982, then His Majesty's Government of Nepal/Ministry of Health subsequently accepted the HELLIS National Focal Point for Nepal that continued up to 1989. In 1993, reorganization of organogram of the Ministry of Health, National Health Education, Information & Communication Centre was established under the Department of Health Services. This Centre has been designated as National focal point of HELLIS network in Nepal from 1993 onwards. Presently, this centre is conducting the different activities as per the objectives of HELLIS network which are listed as (a) to provide healthy information services to the health personnel of member countries (b) to utilize the existing resources of member countries and (c) to strengthen the health services of member countries.

1.1.5 NeLIC

Another effort to make e-resources available at affordable cost for Nepalese libraries was initiated by Nepal Library and Information Consortium (NeLIC). It was established on 10 December, 2009 as a non-profit organization with the objective of becoming the nodal body to help provide educational information services in Nepal by a group of institutions with the idea of facilitating access to electronic journal databases and other electronic resources either free or at highly reduced prices to Nepali educational institutions. For its member institutions, it provides access to BioOne, Cambridge Journals Online, Oxford journals collection, IMF eLibrary, Edward Elgar Publishing, Intellect Journals Collection, Oxford Textbook of Medicine, New England Journal of Medicine, Pediatric Neurology Briefs, Royal Society Journals Collection, Project Muse and JSTOR. For more e-resources negotiations are on with eIFL and INASP, to procure Wiley-Blackwell at affordable rates. Currently it charges NRs 10,000/- as a membership fee and NRs 5000/- for annual subscription. There are 49 Nepalese institutions as its members as of now (2016). (www.nelic.org)

A study conducted on e-resources' availability found 46 electronic resources: 25 databases, 8 search engines and 13 libraries for health science e-resources only. (Manterola, C. [et. al.], 2014) Among them are HINARI, UpToDate, MedScape, PubMed, Cochrane and so on. The databases existing today might not necessarily keep continuing forever. Moreover, the trend is that every universities or college in developed countries maintain their own e-resources and databases for their students, teachers, and faculties. So no one can say exactly how many of them exist. Therefore, only major players available and popular in our region or could be accessed from our regions could be studied.

1.2 Statement of the problem

At almost every level within the health sector, access to timely and relevant health information, for making informed decisions, is a basic necessity. It was quite understood that significant number of medical professionals at the medical academic institutions are exploiting the benefits of e-resources. But, to what extent these e-resources are being used is quite unknown till now. It is also indistinct how the users are accessing the medical e-resources, its frequency, and their behaviour. Fee based subscription to e-resources is expensive even for developed countries in the world. For an under developed country like Nepal, sufficient budget for e-subscriptions cannot be imagined. So, actually how do they get access to these e-resources is an important factor of the study. So this study tries to peek into the use of medical e-resources and measure the satisfaction level of the user community upon the availability of e-resources. Thus, this study tries to find what e-sources is being accessed most by our medical professionals and students and what are the inhibiting factors and problems in accessing, obtaining, and usages of such e-resources.

1.3 Objective of the study

1.3.1 General objective:

General objective of the study is to find the application of e-resources and users satisfaction in the selected medical colleges in KTM valley.

1.3.2 Specific objective:

a) To know the financial strength of library in providing the medical e-resources.
b) To know the technical strength of library in providing the medical e-resources.
a. To identify the core medical electronic resources used in medical libraries in Nepal.
c) To identify the problems in accessing and use of medical e-resources.
d) To measure the satisfaction level among users who use these e-resources.

1.4 Scope and Limitations of the study:

There are seven medical colleges running within Kathmandu valley till date according to Nepal Medical Council. The medical students, teachers and faculties in these institutions use various materials for their study including but not limited to textbooks, journals, health magazines, and the Internet for e-resources. They might be using offline content on their personal devices as well. This study is limited to the use of e-resources thus used by medical professionals pursuing postgraduate degree or above and medical faculties of different medical colleges of Kathmandu valley. The study focuses on the e-resources no matter whether it is downloaded from library or on their own as long as they use it through their respective personal devices or library computers. It does not cover the use of library books, journals, etc. in printed formats. It is limited to only five medical colleges of Kathmandu valley and the users who visited library during March 4 and March 29, 2016 and having or undergoing postgraduate degree. The conclusions drawn from this study will be just an indicative not conclusive.

1.5 Significance of the study:

The finding of the study will try to list out the core medical e-resources being used in medical academies. The study will highlight the problems and difficulties faced by users while accessing e-resources, the inhibiting factors. It can play an important role in providing e-resources efficiently and timely to the medical professionals. The study will enhance the information provider's knowledge and understanding about e-resources that their patrons use. It will help to understand about the current status of e-resource usages in medical libraries within Kathmandu valley and the trends in acquiring them. The present study will help to be acquainted with the usages, benefits, and importance of the e-resources in medical academic libraries. The study can help the medical libraries make recommendations and suggestions to the medical professionals

about e-resources availability. Ultimately, it will help the medical professionals to provide qualitative health care services to the citizens of the nation.

1.6 Organization of the study:

This study consists of six chapters. The sequence of the topic and sub topics of the study has been organized in the following manner to make it understand. Chapter one contains background information which includes Introduction, Statement of the Problem, Objectives of the Study, Research Questions, Scope and Limitations, Significance, Definition of the Terms used or glossaries, and a topic on how it is organized. Chapter two contains literatures reviewed that are interrelated to this study. The saying, opinions, and findings of the experts and excerpts according to their relevancy. Chapter three is related to the focus of the study. Here related subjects regarding e-resources background information on selected medical academies and their libraries are discussed. Chapter four contains methodology used for the study. Here, research methodology including research method, design, sampling procedure, data collection procedure, population and sample size, methods of data collection, designing the questionnaire (variables), data collection procedure, and data analysis procedure are discussed. Chapter five consists of analysis, presentation and findings of data. This chapter deals with obtained findings, figures and data of the selected medical libraries. Chapter six consists of summary, conclusion and recommendations. The concise forms of the findings are presented in summary. The study has recommended certain points for the future improvement with some remarks. At the end, supplementary sections are presented in appendix.

1.7 Definition of terms:

Access: The ability to locate, to gain entry, and to use an electronic resource. (US National Library of Medicine, National Library of Health)

Database: A "database" is defined as a virtual source of information containing a set of primary source records belonging to the same context and stored systematically (DORA, 2013). Database is a MeSH and DeCS term introduced in 1998 by NCBI and in 2000 by Virtual Health Library (VHL) respectively as a type of publication that corresponds to the creation of a structured file of information or data that is logically

related, stored and recovered using computer-based media (NCBI, 2013). Such documents are relevant to decision-making in health care.

E-resource: An "electronic resource" is defined as any work encoded and made available for access through the use of a computer. It includes electronic data available by (a) remote access and (b) direct access. Remote access refers to the use of electronic resources via computer networks. (AACR2, 2002 edition; glossary). Direct Access refers to the use of electronic resources via carriers (e.g., discs/disks, cassettes, cartridges) designed to be inserted into a computerized device or its auxiliary equipment.(Library of Congress, 2008)

MEDLINE: Medical Literature Analysis and Retrieval System Online, or MEDLARS Online is a bibliographic database of life sciences and biomedical information. It includes bibliographic information for articles from academic journals covering medicine, nursing, pharmacy, dentistry, veterinary medicine, and health care. Compiled by the United States National Library of Medicine (NLM), MEDLINE is freely available on the Internet and searchable via PubMed and NLM's National Center for Biotechnology Information's Entrez system.

Entrez: The Entrez Global Query Cross-Database Search System is a federated search engine, or web portal that allows users to search many discrete health sciences databases at the National Center for Biotechnology Information (NCBI) website. The NCBI is a part of the National Library of Medicine (NLM), which is itself a department of the National Institutes of Health (NIH), which in turn is a part of the United States Department of Health and Human Services. The name "Entrez" (a greeting meaning "Come in!" in French) was chosen to reflect the spirit of welcoming the public to search the content available from the NLM. (wikipedia.org)

Smartphone: Smartphone is a mobile phone that performs many of the functions of a computer, typically having a touchscreen interface, a camera, Internet access, and an operating system capable of running downloaded apps, playing music, viewing images and text.

Tablet: A tablet computer, commonly shortened to tablet, is a mobile computer with a touchscreen display, circuitry, and battery in a single device, equipped with sensors, including cameras, a microphone, and an accelerometer. Tablets are typically larger than smartphones or personal digital assistants with screens 7 inches (18 cm) or larger screens, measured diagonally. The touchscreen display uses the recognition of finger or stylus gestures replacing the usage of the mouse and keyboard. They usually feature on-screen pop-up virtual keyboards for typing. (www.en.wikipedia.org)

E-reader: An e-reader, also called an e-book reader or e-book device, is a mobile electronic device that is designed primarily for the purpose of reading digital e-books and periodicals. Any device that can display text on a screen may act as an e-reader, but specialized e-reader designs may optimize portability and readability. The main advantages of electronic paper e-readers are better readability of their screens, especially in sunlight, and longer battery life.

PDF: Portable Document Format (PDF) is a file format used to present and exchange documents reliably, independent of software, hardware, or operating system. Invented by Adobe, PDF is now an open standard maintained by the International Organization for Standardization (ISO). They can also be signed electronically and are easily viewed using free Acrobat Reader.

Torrent: BitTorrent is a communications protocol for the practice of peer-to-peer file sharing that is used to distribute large amounts of data over the Internet. BitTorrent is one of the most common protocols for transferring large files.

Wi-Fi is the name of a popular wireless networking technology that uses radio waves to provide wireless high-speed Internet and network connections. A common misconception is that the term Wi-Fi is short for "wireless fidelity," however this is not the case. Wi-Fi is simply a trademarked phrase that means IEEE 802.11x.

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CHAPTER II: REVIEW OF LITERATURE

This chapter includes the review of concepts, interpretations, and finding of previous research done on the similar field. Journal articles, published theses, news in prints, are reviewed for the purpose of the study. Recently published articles specially related to this topic with reference to health sciences as well as relevant articles, and the related studies are reviewed.

Oyedapo & Ojo (2013)

Oyedapo & Ojo write the importance of electronic resources cannot be over emphasized as it has radically changed the activities of academic libraries and research activities in all universities and research institutions worldwide. Researchers are constantly working with Internet resources and search engines, and using e-mail extensively as a normal form of communication. E-resources have radically changed the way information is gathered, stored, organized, accessed, retrieved and consumed in all libraries of the world, especially academic libraries. Academic libraries are shifting from print to electronic resources. They are acquiring various electronic databases for different disciplines to meet the objectives of academic libraries consequently to contribute to the teaching role of its parent institutions. Which supports the mission of the library and enrich the educational programme of its parent institution by providing library resources, services and facilities to meet the teaching, learning and personal development needs of its community.

Karina Berzins and Anthony Hudson (2011)

Study done in Linking London LLN Partner Institutions observed although e-resource use is a high priority for institutions, there were two main problems that were holding back the wider utilisation of these technologies. Firstly, within institutions uneven skill-sets of personnel, and secondly, a lack of internal dissemination of e-resource use. There was potential to optimise e-resource use, by encouraging partner institutions to share the financial burden of the technologies, or by sharing good practice in this area. The research found that there was a high level of willingness amongst partner institutions to collaborate more in this way. It was clear that for many individual academic and teaching staff, the innovations such as e-portfolios, computer based

assessment, web 2.0 and social networking technologies were all used as an aid to learning and teaching on a day to day basis.

Shamin Renwick (2005)

Shamin Renwick's study at The University of the West Indies discovered that faculty had high knowledge about the e-resources available at University's Medical Sciences Library at 80%. The highest use of e-resource was for communication and the main uses were for both professional and personal research, supporting teaching activities, and administrative purposes were next, and lesser usage was for recreation. Usage wise, Internet / Web, email, search engines, online databases, PubMed, and online journals were noted at significant level. The e-resources used online were MedCarib, EJS, and MD Consult along with library's own website. A well known resource MEDLINE on CD-ROM was relatively high. Highest daily use was Web and email. E-resources were used to support faculty's research, teaching, and, to a lesser extent, clinical practice also. In teaching, its use was high in terms of recommending e-resources, to a lesser extent; respondents expected students to use e-resources in presentations and communicated with students via email. Regarding usefulness of e-resources, majority of them agreed and 92% felt e-resources were important to their work.

Madeleine Shanahan (2009)

Study on Australian Medical Imaging Workers (MIWs) by Madeleine Shanahan examined a range of electronic information resources and tools that health practitioners use to update their professional knowledge and explored workplace access to the learning resources and tools. The study found ease of access to information resources was positively associated with increased frequency of use. Access to the Internet varied both across and within health professions. Factors that limit access to the Internet included low numbers of computers with online access, imposed access restrictions and lack of time during work hours to search for information. Study perceived value of four electronic resources, namely Internet, online journals, health and medical databases and tele- or videoconferencing, for updating professional knowledge. It was revealed that the vast majority of MIWs considered the Internet, online journals, and health and medical databases to be of valuable electronic resources for updating professional knowledge. Teleconferencing and videoconferencing were considered less valuable

with 26.4% of practitioners describing not important for updating their professional knowledge. It has been indicated that they value electronic resources as it provided them with easier and quicker access to the information they were seeking. They used electronic resources such as the World Wide Web, online journals and health and medical databases to update their professional knowledge. The study has also shown that frequency of use of electronic resources and tools to meet professional learning needs was positively associated with increased ease of access within the workplace.

Thanukosi, S. (2010)

S. Thanukosi (2010) study on medical professionals of Chennai found high level of preference towards utilization of database on Highwire Press, Ingenta and on Springer Link. They had moderate level of preference towards utilization of database on Blackwell Synergy, Science Direct, MedBio World, and All Health Net. Respondents had low level of preference towards utilization of database on LWW (Lippincott Williams & Wilkins) online, MedInd, and Health Inter Network India.

S. Sarasvady & N. K. Khatri

The study was conducted on six selected libraries where widespread use of electronic resources were observed. The data sets for the study were 200 print journals and corresponding electronic versions of them. Among the surveyed users, 86% expressed awareness about the journal availability in electronic form, and indicated they use them regularly. Regarding the preferences, 58% preferred the electronic journals, 27% print, 15% needed both.. Younger the users, more preference was towards electronic journals because it was easy to navigate large number of resources in Web. Those who chose printed journals gave lack of Internet connectivity and lack of exposure as the main causes. It was showed that hard copy of the research papers was imminent for library off hours. Hard copy users were not familiar with electronic journals. The other reasons for non-use of electronic journals were: non-availability of back volumes in electronic journals; Impossibility of using electronic journals physically at different places etc.; Most users mentioned that they used electronic journals mainly from their libraries. The young participants showed high level of awareness of the collections and willing to resort for more. The preference for the

electronic format was related to the discipline and age of the respondents and was higher among academic staff in Biomedicine and Engineering, and among the younger generation of academic users. Most of the participants understood that the number of electronic journals is increasing and the number of print versions is decreasing, and they resort to the electronic format. It was observed that doing research increased the opportunity for using electronic journals for participants. It was also found a significant correlation between the reason for consulting the journals and the age of the participants. The younger users were inclined for electronic journals for study, research and carriers, whereas older participants used them for both research and teaching. Greater use of electronic journals among young academic users was not only due to acquaintance with new technologies, but also to the fact that they are more active in carrying out research. It was concluded that many users will resort to electronic journals if more orientation programmes are conducted.

Ruiz, Jorge G. [et. al.] (2006)

According to Jorge G. Ruiz [et. al.], e-learning also called Web-based learning, online learning, distributed learning, computer-assisted instruction, or Internet-based learning, is the use of Internet technologies to enhance knowledge and performance. E-learning technologies offer learners control over content, learning sequence, pace of learning, time, and often media, allowing them to tailor their experiences to meet their personal learning objectives. In diverse medical education contexts, e-learning appears to be at least as effective as traditional instructor-led methods such as lectures. However, students do not see e-learning as replacing traditional instructor-led training but as a complement to it, forming part of a blended-learning strategy. There is evidence for the effectiveness and acceptance of e-learning within the medical education community. Digital repositories of e-learning materials exist with peer review, where instructors or developers can submit materials for widespread use or retrieve them for creating new materials. Faculty skills may differ for traditional teaching and creating e-learning interactive environment. The integration of e-learning into undergraduate, graduate, and continuing medical education will promote a shift toward adult learning in medical education, wherein educators no longer serve solely as distributors of content, but become facilitators of learning and assessors of competency.

Manterola, C. [et. al.] (2014)

Access to information is being increasingly easy and user friendly; however, the sheer volume and diversity of Internet sites has grown drastically, so it is common for users to feel overwhelmed by the amount of information. Despite the large amount of information available on the Internet, getting valid scientific information and evidence may not be a simple task. The study was conducted to identify the different databases, search engines and libraries available to retrieve published scientific information in health sciences Database publication type. A search on Altavista, Google and Yahoo, Ixquick and Copérnico meta search engines and in the database "Documents in Information Science" (DoIS) and the addresses found were grouped into: databases, search engines and libraries. The search performed returned 46 electronic resources, 25 databases, 8 search engines and 13 libraries.

Simpson, Susan Nash [et. al] (2005)

Simpson, Susan Nash [et. al] (2005) writes in their article *"The electronic resources librarian in the health sciences library: an emerging role"* the emergence of electronic resources has changed the way academic libraries select, acquire, manage, and provide access to materials. A new set of special skill is required by those who are responsible for managing e-resources. The unique attributes and advantages of e-resources are responsible for the growing predominance and rapid adoption by both libraries and their users. The process of selection in the electronic arena is an increasingly intellectual, collaborative, and multi-disciplinary activity compared to the print resources. Large e-resources packages purchased by consortia have changed how titles are acquired for library use. The electronic resource selection involves consultation with a number of library departments to achieve the best outcome. The selection and acquisition process is complex when dealing with e-resources. Many aspects of the package proposed by the vendor can be negotiated, including price. The cost sharing made possible by a consortia contract may make participation a cost beneficial option for libraries. Electronic resources, by their nature, have caused a shift from collection development to collection management by special skills of an "e-resource librarian" or "serial librarian" or "collection development librarian" whatsoever they want to call it.

Chiu, Tzu-Heng (2010)

Tzu-Heng's Chiu's study was on the financial ground and building a library consortia to tackle problems. Libraries in hospitals of Taiwan were facing budget insufficiency while the costs of medical journals were increasing year by year. Generally speaking, there were 3 main reasons for the development of digital library consortia: (a) to share resources in each library by a virtual union catalogue or interlibrary loan services; (b) to acquire better prices than with single purchasing by negotiating between consortia and suppliers to save funds of libraries; and (c) to alter suppliers' pricing policies, licensing agreement, and annual price increase range by consortium's power. The study revealed a list of high demanding core medical e-resources based on recovered questionnaire. The list included 10 databases, 9 e-journals, 1 e-book and 1 bibliography management tool. Sorted by the order of the demand, the final list of core medical e-resources were: Databases. (a) UpToDate, (b) MD Consult, (c) Cochrane Library, (d) MicroMedex, (e) CINAHL, (f) Medline (Ovid-SP), (g) Nursing Collection (Ovid-SP), (h) EBSCOhost Academic Search Premier (ASP, ASC), (i) ICD-10 Online, (j) PsycInfo. E-Journals: (a) CEPS, (b) BMJ, (c) LWW, (d) Oxford Journals Online, (e) Wiley InterScience, (f) CNKI, (g) Cell Press, (h) SpringerLink, (i) AMA. E-Books: Harrison Online. Bibliographic management tool: Endnote

Beth G. Robb and Elaine R. Hicks (2010)

In 2005, the study results indicated that 25% scanned (read) journals and books in print, while 45% scanned (read) journals in electronic format. It was the beginning of the shift to electronic format. The library assistant reported spending less than 10 minutes a day re-shelving print journals. With the usage numbers for the top 12 journals ranging from a high of 30 uses to a low of 3 uses, it was clear that, most print journals were not being used, especially when compared to the larger use during study period. On the survey results presented by the librarian and the student volunteers, discussions continued to bring out the overwhelming use of electronic journals over print titles. Costs presented comparing ‘‘print plus online access’’ to ‘‘online access only’’ supported the decision to provide just online access. However, some journal required print purchase to obtain the online access for example, the New England Journal of Medicine which had 30 print uses over the six-month period. After evaluating all print journals, 36 titles met the criteria for retention in print.

Joanne Gard Marshal and Julia Sollenberger (n.d.)

For the study the list of information resources used was generated by the Value Study Planning Group, based on their experience with health sciences library collections. The results provided a picture of the type of resources used by a large number of health professionals when they searched for information related to a specific patient care situation. The 4 most frequently used resources were online journals (46%), PubMed/MEDLINE (42%), UpToDate (40%), and online books (30%). The overall rating for UpToDate was high due to the large proportion of residents who reported using this resource (77%). Print books and journals were also ranked in the top 10 resources used. Although CINAHL was used in 10% of the incidents overall, it was used substantially more by the nurses (18%). The data showed nurses were using a wide range of resources in addition to the nursing titles. Only 4% of the respondents reported using consumer health resources to answer their patient care questions. Impact of the information from all resources used showed that 48% respondents changed the advice that they gave to their patient. It suggested that the information found in multiple resources might be contributing to enhanced communication between health professionals and patients. The continuing use of print resources as well as the library and librarian were reminders that the profession is continuing to support information access in multiple formats and multiple access locations.

Hassan, A. M. El (2008)

Hassan, A. M. El writes in his article; *Publication, dissemination and utilization of health research results in Sudan: impact on health problems of poor communities*, of the 109 respondents who were asked about the paper on the treatment of visceral leishmaniasis, (94.4%) had not read the paper. The main reason given was that it was not available in hard copy, and they did not have the facility to obtain it from the Internet. Fifty-one per cent of respondents had not read the article on the treatment of Mycetoma, the reason given by 86% of those was the unavailability of the journal. It was clear that important local health problems were being investigated by researchers in the country. The majority of research was in the area of infectious diseases and dealt with problems of the marginalized and poor sectors of the community. The results of research were rarely used for the better diagnosis, management or prevention of those health problems. The main reason was that the research was published in foreign journals, to which most practitioners and other health workers do not have access. Lack

of Internet facilities was blamed largely because of the costs involved. Though many part of the country had Internet access, only facilities in the big cities used services like HINARI. Lack of awareness of such services was preventing increased use of it. Researchers in the universities were reluctant to publish in local journals for two reasons: it was more prestigious to publish in international journals, and the universities give more weight to research published in foreign journals when considering promotion of their staff.

Tabassum, M. R. (2015):

Tabassum, in his article "Usage of a digital library system at a private university library in Bangladesh, writes in order to facilitate digital library adoption and usage, user-centric digital library systems must be designed. He emphasizes the quality of content in terms of its richness, up-to-datedness, adequacy, completeness, clarity, relevance and usefulness when creating digital libraries. The study also found that digital library content, digital library system characteristics, and digital library service quality have influenced both perceived ease of use and perceived usefulness of digital library. Digital library adoption and usage are faced with a number of challenges.

Chattopadhyay, Anjana (n.d.)

Anjana Chattopadhyay in her article, *Evaluation of health and biomedical information resources and services in South East Asia Region,* writes medical librarians need specialized information management skills to deliver health care information. It is essential that libraries strengthen their own collection and develop strategies to utilize resources from others through cooperation. Many publishers are coming toward to make negotiable pricing policy for package of print and online journals for a group of libraries having similar subject of interest. Formation of journal consortium among group of libraries has become a common practice in social science, science & technology, and medicine. High price of medical journals and data bases makes an individual institution difficult to purchase it. Resource sharing of these databases may ensure easy and wider access to these materials. Indigenous medical journals and databases form an important tool for research scholar, through which he can monitor the achievement made by his country in that specialized field. Electronic healthcare information resources produced by the developed world may not necessarily be relevant

to the needs of those living in less privileged countries. Librarian needs to provide locally relevant content to users so that information supply matches with local user's needs, rather than simply imposing information upon him. The study concluded that contents of the leading Western and American journals are biased against locally prevalent disease of poverty and they failed to provide due importance to diseases affecting the poor. Emphasis has to be put upon developing countries to develop their own platform to reflect the real picture of world health conditions rather than imposed information. Obtaining and disseminating health and biomedical information is an important function of World Health Organization. HELLIS Network started in 1979 in SEA Region and then HINARI is an initiative taken by WHO in this regard.

Neupane, R. (2012)

Most of the libraries and medical professionals from medical college libraries in Kathmandu valley have been using HINARI as a source of medical literature. Around 80% of the library users visit library to read medical journals and to access online resources. The postgraduate students of medicine have been accessing HINARI frequently ranging from daily to once in a month. Around 91.7% of the respondents downloaded articles from HINARI for offline use. The users downloaded articles for supplement of text book and research purposes. This finding shows that e-resources like HINARI is being used heavily for medical e-resources in medical college libraries in Kathmandu valley.

Yadav, C. B. (2012)

Out of 10 libraries he studied, 8 libraries have emerged as digital library from 2009 to 2011. Almost all of the libraries he studied had Internet connection from ADSL to fiberoptics having varying speed of 256 kbps to 512 kbps. They had enough desktop computers for users to use and majority of respondent libraries (50%) had collected more than 500 to 6000 e-collections in their libraries. This suggests that libraries in Nepal have been going digital slowly. Similarly, e-resources are also being exploited gradually.

Saba and Lauria (2012)

Newsweek, one of the most internationally acclaimed magazine brands in the world, stopped publishing print edition after nearly 80 years from December 31, 2012. The decision to go all-digital was because more consumers favoured tablets and mobile devices over print in an increasingly commoditized, 24-hour news cycle online. Decision for the magazine to become a subscription-based digital publication rebranded as Newsweek Global. Rising cost for printing and distribution and fall in revenue were blamed for cessation of print edition.

BBC (2016)

BBC online posted, on its UK section under heading "Independent to cease as print edition," The Independent and Independent on Sunday newspapers are to cease print editions in March, leaving only an online edition quoting their owner. At its peak, its sales hit around 428,000 copies a day and 25 years later, the number of copies being sold on a weekday in news agents is rather close to 28,000 only. The long decline in print readership has led to many declarations that print editions will be dead in a few years' time.

Literatures reviewed have shown that e-resources have radically changed the way information is being gathered, stored, organized, accessed, retrieved and consumed in all libraries of the world, especially academic libraries. It was observed that ease of access within the workplace has positive impact in the frequency of use of electronic resources and tools. Majority of the users agreed the usefulness of e-resources and at one instance 92% felt e-resources were important to their work. Sarasvady & Khatri's showed the preference of e-resources verses printed version verses both at 4:2:1, which indicates print version is still preferred and is not going to die as observed by Saba and Lauria and BBC for the demise of printed versions of Newsweek and The Independence dailies. Their study also showed most of users resorting to the new technologies and similarly e-resources.

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CHAPTER III: FOCUS OF THE STUDY

Internet has changed the way we acquire information drastically. Long waiting for the printed journals and books to arrive via mail or book seller is becoming obsolete. Electronic publishing via Internet is considered as the timely, accurate and effective way of communication among academic and research communities worldwide. Libraries are playing vital role in collecting, organizing, and disseminating the information thus produced. Internet and information communication technology (ICT) have played very important role in helping libraries do so. Both have been utilized heavily by producers and consumers of information in distribution and consumption of e-resources widely across the globe at few clicks of mouse button. The new innovations, discoveries, or findings are being communicated within seconds between the concerned and interested stake holders in their respective fields. It would have been very difficult and time consuming to search information through traditional library system if Internet and ICT have not been employed. There are multi sorts of e-resources available online and users are being accustomed to it gradually and their interest on them is also increasing. Hence this study is focused on online e-resources and its usage by medical professionals. The study is focused on use of e-resources in medical libraries of medical institutions within Kathmandu valley and users above postgraduate degree in these institutions.

3.1 Medical library

A library designed to assist physicians, health professionals, nurses, allied health workers, students, medical researchers, and information specialists in finding health and scientific information to improve, update, assess or evaluate patient health care is known as medical library. It is generally found in hospitals, medical schools, and in medical or health associations. A typical medical library has access to MEDLINE, a range of electronic resources, print and digital journal collections and print reference books. Some academic medical libraries are located in the same building as the general undergraduate library but most are located near or within the medical college or faculty. The United States National Library of Medicine (NLM) is the largest biomedical library in the world, and it is linked to the National Institutes of Health.

3.2 E-resources

The resources available in electronic format accessible via computer network or stored in any storage medium like CD/DVD, hard drives, portable drives are known as e-resources. The Internet provides considerable amount of e-resources. The use of Internet as a tool is changing the way users search and get timely information. This has led to the rapid development and popularity of web resources. In the recent years, there has been a phenomenal growth of electronic journals. It included electronic books and journals, and bibliographic and reference databases."Electronic resources consists of data (information representing numbers, text, graphics, images, maps, moving images, music, sounds, etc.) or combinations of data and programs" (Maxwell,1978). The term "electronic resource" actually refers to the collections of books, journal articles, magazine and newspaper articles in electronic format. Different forms of e-resources include e-books, electronic versions of printed books, e-journals, electronic issues of journals and articles, online and offline databases, electronic abstracts / indexes etc.

3.2.1 HINARI

HINARI (Health Internetwork Access to Research Initiative) is a programme set up by WHO together with major publishers. It enables low- and middle- income countries to gain access to one of the world's largest collections of biomedical and health literature. Up to 15,000 journals (in 30 different languages), up to 47,000 e-books, up to 100 other information resources are now available to health institutions in more than 100 countries, benefiting many thousands of health workers and researchers, and in turn, contributing to improve world health. HINARI is a part of Research4Life, the collective name for four programs: HINARI (focusing on health), AGORA (focusing on agriculture), OARE, (focusing on environment), and ARDI (focusing on applied science and technology). Together, Research4Life provides developing countries with free or low cost access to academic and professional peer-reviewed content online. The publishers involved have committed to continuing with it until at least 2020. Eligible categories of institutions are: national universities, professional schools (medicine, nursing, pharmacy, public health, dentistry), research institutes, teaching hospitals and healthcare centres, government offices, national medical libraries and local non-governmental organizations. The country lists are based on four factors: Total GNI (World Bank figures), GNI per capita (World Bank figures), United Nations Least Developed Country (LDCs) List, and Human Development Index

(HDI). Some large, emerging countries including India and China are excluded by the program because their total GNI exceeds US$1 trillion. The founding partners Elsevier, John Wiley & Sons, Springer, Wolters Kluwer – Lippincott Williams & Wilkins, World Health Organization, Yale University Library along with other 180 partners are currently contributing to the database.

3.2.2 PubMed

PubMed is a free search engine accessing primarily the MEDLINE database of references and abstracts on life sciences and biomedical topics. PubMed comprises more than 25 million citations for biomedical literature from MEDLINE, life science journals, and online books. Citations may include links to full-text content from PubMed Central and publisher web sites. The United States National Library of Medicine (NLM) at the National Institutes of Health maintains the database as part of the Entrez system of information retrieval. PubMed, first released in January 1996, ushered in the era of private, free, home- and office-based MEDLINE searching. The PubMed system was offered free to the public from June 1997.

3.2.3 PubMed Central

PubMed Central (PMC) is a free full-text archive of biomedical and life sciences journal literature at the U.S. National Institutes of Health's National Library of Medicine (NIH/NLM) PMC serves as a digital counterpart to NLM’s extensive print journal collection. Launched in February 2000, PMC was developed and is managed by NLM’s National Center for Biotechnology Information (NCBI). As an archive, PMC is designed to provide permanent access to all of its content, even as technology evolves and current digital literature formats potentially become obsolete. NLM believes that the best way to ensure the accessibility and viability of digital material over time is through consistent and active use of the archive. For this reason, free access to all of its journal literature is a core principle of PMC. However, individual authors continue to hold copyright on the material in PMC and users must abide by the terms defined by the copyright holder. PMC is a repository for journal literature deposited by participating journals, as well as for author manuscripts that have been submitted in compliance with the public access policies of participating research funding agencies. PMC is not a publisher and does not publish journal articles itself. In addition to its role as an archive, the value of PMC lies in its capacity to store and cross-reference data

from diverse sources using a common format within a single repository. With PMC, a user can quickly search the entire collection of full-text articles and locate all relevant material. PMC also allows for the integration of its literature with a variety of other information resources that can enhance the research and knowledge fields of scientists, clinicians and others.

3.2.4 Medscape

Medscape is a web resource for physicians and health professionals. It features peer-reviewed original medical journal articles, CME (Continuing Medical Education), a customized version of the National Library of Medicine's MEDLINE database, daily medical news, major conference coverage, and drug information – including a drug database (Medscape Drug Reference, or MDR) and drug interaction checker. All content in it is available free of charge for professionals and consumers alike, but registration is required. it is a professional portal for physicians with 30 medical specialty areas and more than 30 physician discussion boards. It offers up-to-date information for physicians and other healthcare professionals. Medscape is owned by WebMD which released an iOS application of Medscape CME in 2009, followed by an Android version two years later. So it is available in portable devices as well.

3.2.5 UpToDate

UpToDate is a subscription based premier evidence-based clinical decision support resource, designed to provide physicians access to current clinical information trusted worldwide to help them make the right decisions at the point of care. It addresses specific clinical issues in the form of topic reviews. According to UpToDate, it “is designed to get physicians the concise, practical answers they need when they need them most — at the point of care.” It is proven to change the way clinicians practice medicine, and is the only resource of its kind associated with improved outcomes. It incorporates the latest evidence and the clinical experience of more than 6,300 leading physician authors and editors. UpToDate, Inc. is a company in the Wolters Kluwer Health division. The UpToDate system is marketed as an evidence-based clinical resource. It includes a collection of medical and patient information, access to Lexi-comp drug monographs and drug-to-drug, drug-to-herb and herb-to-herb interactions information, and a number of medical calculators. It claims to have been written by over 5,700 physician authors, editors and peer reviewers. It is available both via the

Internet and offline on personal computers or mobile devices. It requires a subscription for full access. The company was launched in 1992 starting with nephrology and have since added over twenty other specialties, with more in developing process, which cost US$495 per year as of 2014. In Norway, the service is paid for by the Norwegian Electronic Health Library and is therefore accessible from any IP-address in the country. After the 2011 tsunami in Japan, access was made free in Japan. It was also made available for free in New Zealand after the Christchurch earthquake and in 2010 in Haiti earthquake. Similarly, after the April 2015 earthquake in Kathmandu, it was made free to all accessed from Nepal for a brief period of time. The Global Health Delivery Project at Harvard University administers its access for those who offer medical care to poor or underserved populations outside the United States. Its articles are anonymously peer reviewed and it mandates the disclosure of conflicts of interest by the authors of its articles.

3.2.6 Cochrane Library

The Cochrane Library (named after Archie Cochrane) is a collection of databases in medicine and other healthcare specialties provided by the Cochrane Collaboration and other organizations. At its core is the collection of Cochrane Reviews, a database of systematic reviews and meta-analyses which summarize and interpret the results of medical research. The Cochrane Library is to make the results of well-conducted controlled trials readily available and is a key resource in evidence-based medicine. It is a subscription-based database, originally published by Update Software and now published by John Wiley & Sons, Ltd as part of Wiley Online Library. In many countries it has been made available free. There are also arrangements for free access in much of Latin America and in "low-income countries typically via HINARI. All countries have free access to two-page abstracts of all Cochrane Reviews and to short plain-language summaries of selected articles.

3.3.1 National Academy of Medical Sciences (NAMS):

Bir Hospital is the oldest and one of the busiest hospital located at the centre of Kathmandu city in Nepal. It was established in July 1889 by Bir Shamsher Jung Bahadur Rana. It is run by the National Academy of Medical Sciences, a government agency since 2003. The hospital provides medical and surgical treatments to people from all across the country. It currently has a capacity of 535 beds. This

medical institute plays an important role in training the medical and nursing professionals in the country. NAMS as an academy (Deemed University) established in 2002, aims at imparting postgraduate and super-specialty medical education in the country. Post graduate education at NAMS is a residential program of three years duration offering degrees such as MD/MS, MDS, DM, M Ch and post basic nursing (PBN). Every year it produces trained post graduates in different subjects of clinical medicine like general surgery, internal medicine, orthopaedic surgery, pathology, radiology etc. It has become an Internship centre for MBBS students passed from China and Russia and other parts of the world, as well as elective students from abroad. Hundreds of nurses of different levels get nursing training in this hospital. Therefore, NAMS library has developed itself into a kind of reference library for postgraduate students.

3.3.2 TUTH (IOM):

The Institute of Medicine (IOM) was established with the goals of producing human resources for health services, provide health services through its health institutions, and conduct research in health sciences in Nepal under Tribhuvan University. In the first decade of its establishment, it developed a total of 12 campuses scattered over the country out of which 3 campuses were in Kathmandu and 9 campuses were outside the Kathmandu Valley. TU Teaching Hospital was established in 1983 with the generous support of the Japanese Government. It was graciously inaugurated by then His Majesty the King Birendra in February, 1986. T. U. Teaching Hospital is an integral part of the Institute of Medicine. In the beginning, the emphasis was given to training of middle level health workers. But importance was felt for higher level health education in the country and MBBS was started from 1978. From 1982, three year Postgraduate Generalist Training (MDGP) was started in collaboration with University of Calgary, Canada. From 2008, super specialized training started with M Ch Program in surgery in the field of: gastroentorology, urology, neurosurgery, cardiothoracic and vascular. From 2013, IOM is running 29 different programs from proficiency certificate level to the highest postgraduate degree in medicine, public health, paramedical, nursing and traditional medicine (Ayurved Science) through 9 campuses scattered all over the country.

3.3.3 NMC

Nepal Medical College and Teaching Hospital (NMCTH) was established in the year 1997, situated at Attarkhel of Jorpati VDC, in Kathmandu. It comprises the College and Teaching Hospital. The college has all the required departments of clinical and basic science that are required for the MBBS curriculum. NMC's mission is to educate human resources for health and at the same time keep themselves updated with the latest trends in medical and health sciences education by self-enquiring minds of biomedical, socio-cultural and epidemiological scientific research. A total of about 1000 undergraduate students are pursuing their study in different fields of medicine and about 46 PG students in preclinical (basic science) subjects, 52 students in clinical subjects, 12 students in MSc medical are pursuing their study in postgraduate study. The NMC library has an appropriate setup with the facility of sitting arrangements for 400 persons at a time. It has around 13,000 documents collection which includes books, periodicals, theses, research reports, newspapers and subject related bulletins etc. The books are categorized in Reference and Circulation section. The library has also an e-library facility. It specially has been separated for all the students, doctors, researchers, faculty members and staff within the library premise from where they can search and retrieve the online information / networking (Internet, e-mail, database, HINARI, PERI, PubMed etc.). The NMC Library has been running the Lib-Info library automation software. The library has updated NMCTH publication the "Nepal Medical College Journal," in its collections as reference materials which is indexed in Medline Index Medicus since 2003, first time by the private sector.

3.3.4 KMC

Kathmandu Medical College (KMC) functions from two complexes: Duwakot; Basic Sciences and Sinamangal; Clinical Sciences. KMC is permanently affiliated to Kathmandu University and fully recognized by the Nepal Medical Council (NMC) and the Sri Lanka Medical Council. KMC has also been listed in the WHO's World Directory of Medical Schools. KMC is also an Associate Member of the Network of Community Based Medical Schools that has its headquarters at Ghent in Belgium. With very modern equipment and services, KMC strives hard to provide comprehensive, high quality tertiary care services to its clients. Regarding postgraduate studies, the MD Pathology was started from 2003. MD/MS in clinical areas Medicine, Surgery, Paediatrics, Obs/Gynae and Anesthesia were started from February 2009. KMCTH is

recognized as a centre for the training of fellowship of the college of Physicians and Surgeons of Pakistan (CPSP) in five specialties. Library in KMC has two spacious libraries: one for basic sciences and the other for clinical sciences. They have adequate number of books as well as many general, scientific and medical journals. Multiple copies of text books, Internet/e-mail connection and photocopying facilities. The libraries also have self learning areas with videos and CD-ROMs for computer based learning. Additionally, each department has a small departmental library.

3.3.5 PAHS

The Patan Academy of Health Sciences (PAHS) is a public not-for-profit tertiary academic institution dedicated to improving Nepal's rural health by training health workers for rural Nepal. PAHS is dedicated to improving the health status of the people of Nepal by producing doctors who are willing and able to provide health care to disadvantaged Nepalese living in remote or rural areas. The history of PAHS goes back to 1951-52, when Christian missionaries set up a maternity unit at then Cholera Hospital (now Infectious Disease Hospital). In January of 1956, the maternity unit moved to Shanta Bhawan (Shanta Shamsher's palace). In the year 1982, it merged with Lalitpur District Hospital to become Patan Hospital at its new building in Lagankhel, Lalitpur. It now serves the people with 450 beds and all the major facilities in medical and surgical practice. Patan Hospital in the year 2008, went under newly established Patan Academy of Health Sciences and started teaching MBBS since 2010. The academy initially consists of a School of Medicine. PAHS is based at Patan Hospital, which is a major teaching hospital for the academy. Besides that, Patan Hospital is also a teaching and learning ground for NAMS and TUTH postgraduate students in different subjects like, General Practice, Surgery, Pediatrics, Internal Medicine, and Orthopaedics.

PAHS as an academic institution has its own well-equipped library with ample space, which serves the Faculties, Interns, Residents, Medical Students, Nurses, and other allied health professionals, for their educational needs. The library has more than1300 titles of books including 1050 reference books. About 900 bound volumes of backdated journals consisting about 70-75 titles available from 1990. It has a Media Tech Center with 34 desktop computers in its Basic Science Block for users to use

computers and access Internet. The PAHS library offers free access to the databases UpToDate (www.uptodate.com) and HINARI as well.

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CHAPTER IV: RESEARCH METHODOLOGY

4.1 Introduction

Research is an organized, systematic, data-based, critical scientific enquiry or investigation into a specific problem undertaken with the objective of finding answers or solution to it (Sekaran, 2000). The research process involves a series of well-thought-out activities of gathering, recording, analyzing and interpreting the data with the purpose of finding answers to the problem. The entire processes based on the philosophies, principles and mechanisms of research by which we attempt to solve problems or search the answers to questions are collectively known as the research methodology (Pant, P. R. 2009). Various methods are applied to extract information about the libraries and behaviour and views of their users.

Questionnaires were used as the survey instruments / tools for gathering relevant information. The questions used in questionnaire are both closed as well as some open for the sake of not omitting any relevant data. The statistical methods used for the analysis of data are descriptive; i.e. tables, percentages, and diagrams to depict the data thus obtained.

4.2 Research Method

The research method used for this study was quantitative by the presentation of descriptive statistical data. Survey method was used to collect data using structured questionnaire. Two sets of survey questionnaires were prepared for collection of information about the libraries from the staffs of concerned libraries and another for information about the users of concerned libraries and their views.

4.3 Research Design

The study tried to find out the core medical e-resources that is being used in different medical colleges within Kathmandu valley. Hence descriptive and analytical research design has been employed. The survey instrument used for data collection is both quantitative and qualitative through structured questionnaire and secondary data were taken from the records of respective colleges and their libraries.

4.4 Sampling Procedure

The study of complete population was not feasible because of many seen and unseen constraints. Hence, adequate samples were drawn which were representative of a population by selection of appropriate sampling methods. One hundred populations from the selected 5 medical academic libraries were selected randomly for the purpose of this study.

4.5 Data Collection Procedures

Methods of data collection for the objectives of the study required data and information from the primary source. It was acquired with the help of a structured questionnaire. The questionnaire was designed to cover all the required data and information for the study as far as possible. Some of the information were collected from the library staff.

4.6 Population and Sample Size

Randomly selected medical libraries are the sample units for the study. The population of the study was selected medical libraries and their users; PG students and above, i.e. lecturers, researchers and professors of the respective medical colleges during the period from March 4, 2016 to March 29, 2016, who used medical e-resources the most. The librarian of concerned libraries were the respondents for the designed questionnaire for library specific data. For the user survey, PG students (and above), lecturers, researchers and professors willing to fill-up the questionnaire were chosen. The return rate is low at 76%. The total number of questionnaire sent was 100. Among them, 76 of the users returned the questionnaire by filling it out in time.

4.7 Designing the Questionnaire (Variables)

The survey instrument used was designed for the purpose of this study only. The items were developed after reviewing the literature and other similar survey contained in the literatures. For the library questionnaire, first section consisted of the basic information about the concerned medical library and staffs. Subsequent sections contained information regarding the infrastructure, information and communication technology, e-resources collection, acquisition, budgeting, library services, usages, and suggestions (if any). For the user questionnaire, first section contained demographic data. Subsequent sections consisted information on library use, library resources, e-resources, infrastructure needed for e-resources, online searching tools & behaviours,

Internet addresses, user views and satisfaction level. Some of the questions contained an open option for trapping any relevant information that was not in our knowledge but is an essential part for the study from user point of view.

4.8 Measurement Scales

The scales used to measure attitudes and opinions were: (a) nominal scale with fixed alternative items (b) Rating scale and (c) Likert-Type scale.

a) Nominal scale with fixed alternative items offers the respondent a choice among two or more alternatives (Kerlinger, 2000). Some of the questions contained dichotomous answers, with only Yes or No alternatives.

b) Rating scale measures individuals and their reactions, characteristics and behaviors by observation. This scale presents a series of statements from which respondents select one as the best reflecting his/her evaluation, (Kerlinger, 2000). In this study categorical rating scales are used to determine the respondents' views regarding the statement. It generally has three options viz. Poor, Average, High or in reverse High, Average, Poor.

c) Likert-type scale consists of a number of statements which express either a favorable or unfavorable attitude towards the given statement to which it seeks respondents' reaction. It is a scale measuring the degree to which people agree or disagree with a statement (Likert, 1932). This scale was developed by U.S. psychologist Rensis Likert, which is an important landmark in attitude measurement. It has been employed in this study more frequently to study the attitude scale of the respondents. The respondents are usually asked to 5-point scale to measure their attitude such as a) Very High; b) High; c) Nor high nor low; d) Low; e) Very Low

4.9 Data Collection Procedure

Data were collected through the questionnaire from the staff and users of the medical college libraries during March 4 and March 29, 2016.

Table 4. 1: Size of sample for the user survey

Medical Libraries	Questionnaires		Received
	Sent	Received	
National Academy Medical Sciences	20	16	80%
Patan Academy of Health Sciences	20	15	75%
Tribhuvan University, Teaching Hospital	20	16	80%
Nepal Medical College	20	15	75%
Kathmandu Medical College	20	14	70%
Total	**100**	**76**	**76%**

4.10 Statistical Procedure and Data Analysis

The collected data and information using questionnaire, or secondary source were organized in a systematic order for analysis; through editing, coding, and classification using computer software IBM SPSS v.20 and MS Excel 2007 for data analysis, presentation and description of the results. Most of the analyses were done by tabular presentation, diagrammatic presentation and results are interpreted using crosstab tables given by the SPSS software figures and charts by MS Excel for clarity.

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CHAPTER V: DATA ANALYSIS, PRESENTATION, AND FINDINGS

Analysis of the obtained data has been done with the help of frequency table, cross tabulation and different charts for clarity. The data were carefully entered and edited to ensure quality using IBM SPSS v.20 and MS Excel 2007 software where necessary.

5.1 Analysis for medical libraries' strength and weakness for e-resources

Table 5.1.1 Staff composition of the libraries

Staff Category	Institution					Total	n = 47 Percent
	PAHS	NAMS	TUTH	NMC	KMC		
M Lib & Inf Sc	1	0	2	0	1	4	8.5%
B Lib Sc	0	0	0	1	1	2	4.3%
Short Term Course	4	2	2	2	8	18	38.2%
IT Technician	1	0	4	0	1	6	12.8%
Clerical Staff	1	3	7	4	2	17	36.2%
Total	**7**	**5**	**15**	**7**	**13**	**47**	**100.0%**

Source: Field survey 2016

Figure 5.1.1: Staff composition of library studied

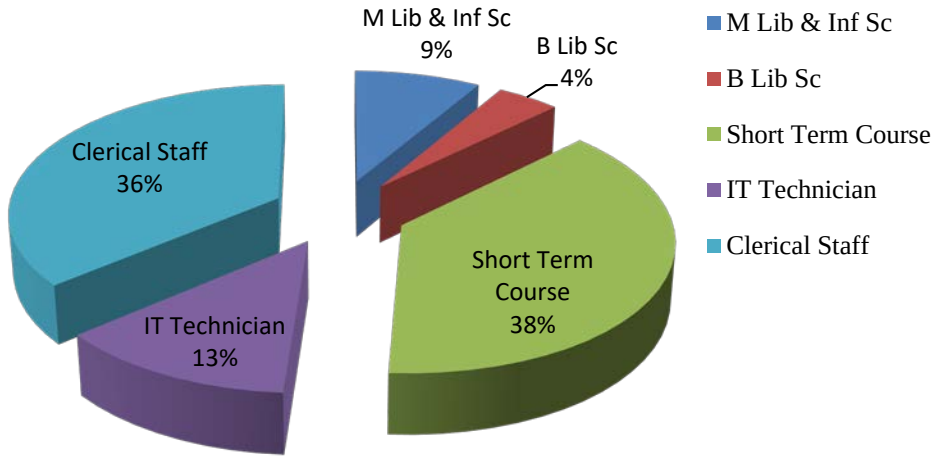

Table 5.1.1 and figure 5.1.1 show the staff composition of the medical libraries studied. The data shows 8.5% of the librarians have Masters Degree, 4.3% have

Bachelors Degree, 38.2% have short term course, 12.8% are related to IT field, and 36.2% are clerical staffs. Majority of the staffs 38.2% have only short term course and 36.2% are clerical staffs.

5.1.2 ICT tools and services in the libraries

Table 5.1.2: ICT tools and services

	Institution				
	PAHS	NAMS	TUTH	NMC	KMC
Separate E-section	No	No	Yes	Yes	Yes
Opening hour (hr)	11-12	11-12	12 >	6-10	12 >
No of computers	40 >	5-10	10-20	10-20	40 >
Internet Speed	2 Mbps>	2 Mbps>	512 Kbps	512 Kbps	256 Kbps
IT Dept	Yes	Yes	Yes	Yes	Yes
Wi-Fi Access	No	Yes	Yes	Yes	Yes
Has own website	Yes	No	No	No	No
Links to E-resource site	No	No	No	No	No

Source: Field survey 2016

Table 5.1.2 shows the ICT tools and services possessing and provided by the medical libraries. The data shows TUTH, IOM have the longest opening hours starting from 8 in the morning to 12 am midnight. It shows lowest opening hour in NMC library. PAHS and KMC both have more than 40 computer for the users where as NAMS has only 5-10 computers. This shows that higher studies' students bring their own devices to use e-resources i.e. they use only Internet from the libraries through Wi-Fi but no computers that is why these library have high speed of Internet and Wi-Fi facility. The data shows almost all of the institutions provide IT department for library's help in ICT solutions. Only one library of PAHS has its own website provided by third party (pahs-np.demo.libguides.com), but all of the libraries lack useful links to the e-resource sites.

5.1.3 Budget allocation and decision making for e-resources

Table 5.1.3 Budget allocation and decision making for e-resources

Budgeting aspects	Institution				
	PAHS	NAMS	TUTH	NMC	KMC
Budget allocation	Don't know	Don't Know	Don't Know	NRs 20,00000	Don't know
Sufficiency	Not Suffi.	Not Suffi.	Very Low	Just	Just
Percent for E-resource	N/A	N/A	N/A	N/A	N/A
Decision maker	Institution Mgmnt/ Admin	Library Committee	Institution Mgmnt/ Admin	Institution Mgmnt/ Admin	Library Committee
Key: N/A= not applicable; Suffi.= Sufficient					

Source: Field survey 2016

Table 5.1.3 shows the picture about budget allocation and decision making for e-resources in these libraries. The data shows only librarians at NMC knows about their budget allocation; all other librarians do not know about budgeting of their libraries. Two felt the budgeting is just sufficient; two libraries felt it is not sufficient and one library felt it is very low for their activities. But for e-resources none of them are allocating single penny. Only two library committees can decide for themselves but three libraries cannot make decision for themselves. Their institutional management or administration makes decision for the library matters.

5.1.4 Subscription for e-resources database or journal

Table 5.1.4: E-resource subscription for database or journal

Observed Databases for E-resources	Institution				
	PAHS	NAMS	TUTH	NMC	KMC
HINARI	M / Free	M / Free	M / Free	M / Free	M / Free
PubMed	Free	Free	Free	Free	Free
UpToDate	M / Free	N/A	N/A	N/A	N/A
NepJOL	Free	Free	Free	Free	Free
Medscape	M / Free	M / Free	M / Free	M / Free	M / Free
Key: N/A= not applicable; M= Membership					

Source: Field survey 2016

Table 5.1.4 shows the subscriptions for e-resource database or journal. The databases recorded here were tabulated thus obtained through the responses by the concerned librarians. The table shows almost all possess membership and free access to HINARI database, PubMed and Medscape. Only one PAHS library has UpToDate subscription and it is also getting it for free. It was observed that NepJOL is also used in these libraries for Nepalese journals. The librarians have no idea about other sites their patron visit for medical e-resources.

5.1.5 E-resources usage by user type

Table 5.1.5: E-resources usage by user type

User type	Institution					Total points	Ranking
	PAHS	NAMS	TUTH	NMC	KMC		
Postgraduate Students	3	1	1	2	2	**9**	1st
Faculties	2	3	2	3	3	**13**	2nd
Research Scholar	1	2	5	1	5	**14**	3rd
Undergraduate Students	4	5	4	4	1	**18**	4th
Nurses	5	4	3	5	4	**21**	5th
Allied Health Workers	6	6	6	6	6	**30**	6th
Key: 1 for highest use and 6 for lowest use; Ranking: 1st is higher use and 6th is lower use							

Source: Field survey 2016

Figure 5.1.2: E-resources usage by user type:

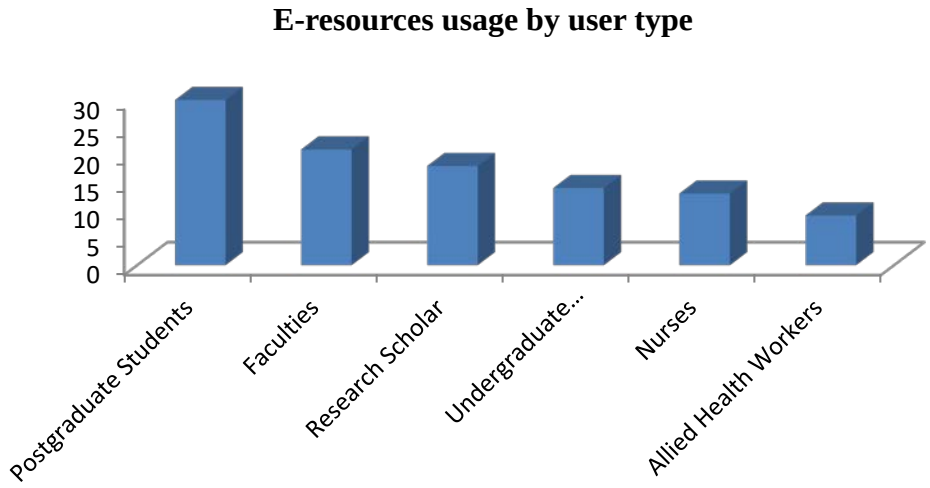

Table 5.1.5 and figure 5.1.2 shows the e-resource usage by user type in the medical libraries studied. The figure was created reversing the total points obtained from the table 5.1.5 for clarity. The data reveals it is mostly used by postgraduate students, followed by faculties, research scholars, then by undergraduate students, then by nurses and finally by allied health workers.

5.1.6 E-resources possessed by the library

A question was also asked about the e-resources like e-books, e-journals, etc possessed in electronic format by the libraries the response was poor to present in table. Only two libraries responded, where PAHS library has 321 e-books in PDF format, 10 e-books in EPUB format, 193 CD/DVDs, and 2 JPAHS journals. The other library to respond was NMC and it has 8 e-books and 1 KMC Journal in electronic format.

5.2 Analysis of user views and survey obtained through questionnaire

5.2.1 Demographic Information: Gender and Age Group

Table. 5.2.1.1: Gender Distribution

Gender	Frequency	Percent
Male	52	68.4
Female	24	31.6
Total	**76**	**100.0**

Table. 5.2.1.2: Age Group

Age Group	Frequency	Percent
25-30	48	63.2
31-35	15	19.7
36-40	5	6.6
41-45	5	6.6
46>	3	3.9
Total	**76**	**100.0**

Figure 5.2.1.1 Gender

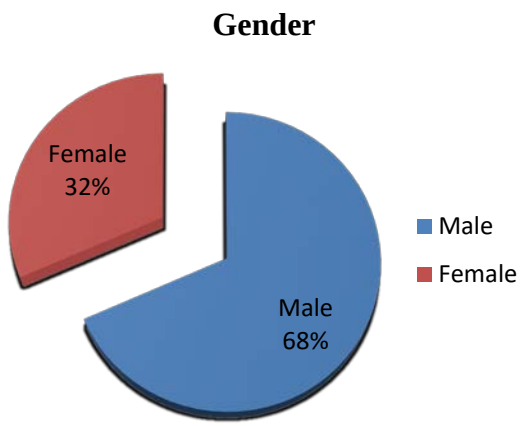

Figure 5.2.1.2 Age Group

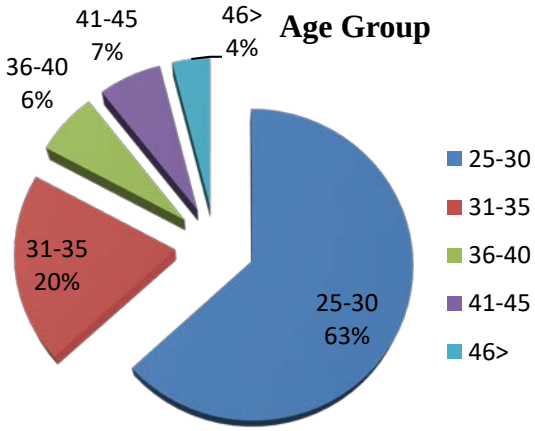

Table 5.2.1.1 and 5.2.1.2 and Figure 5.2.1.1 and Figure 5.2.1.2 shows the respondents' gender and age group. Gender wise the sample was divided into male 68.4% and female 31.6% which indicates that the postgraduate medical education is still dominated by male than females. Data shows 63.2 % of the group lies between 25-30 years of age and the frequency gradually decreases as the age of the respondents increases to lesser at 3.9% lying in the group 46 > which indicates the postgraduate medical education is very popular among the younger generation students.

5.2.2 Frequency of library visit by the users

Table 5.2.2: Frequency of individual library user by institution

Source: Field survey, 2016

Frequency	Institution					(n=76)	
	PAHS	NAMS	TUTH	NMC	KMC	Total	Percentage
Daily	3	10	15	5	7	40	52.6%
Twice a week	5	3	1	4	0	13	17.1%
Once a week	4	2	0	2	3	11	14.5%
Fortnightly	3	1	0	4	4	12	15.8%
Total	**15**	**16**	**16**	**15**	**14**	**76**	**100%**

Table 5.2.2 reveals the frequency of users visiting library institution wise cross tabulation. This shows clearly daily visitors are 52%, twice a week visitors are 17.1%, once a week are 14.5% and fortnightly visitors are 15%. This shows that daily visitors are more than half of the total library visitors during this study.

5.2.3 Purpose of library visit:

Table 5.2.3: Purpose of library visit by respondents

User response (all that apply)	Responses		Percent of Cases
	N	Percent	
Read study printed book & journals	42	25.0%	55.3%
Read Newspaper	32	19.0%	42.1%
Read / Study E-books & E-journals	32	19.0%	42.1%
Use Internet for online e-resources	32	19.0%	42.1%
Check e-mail / Surf net	15	8.9%	19.7%
Use computers for document works	15	8.9%	19.7%
Total	**168**	**100.0%**	**221.1%**

Source: Field survey, 2016

Figure 5.2.2: Purpose of library visit by respondents

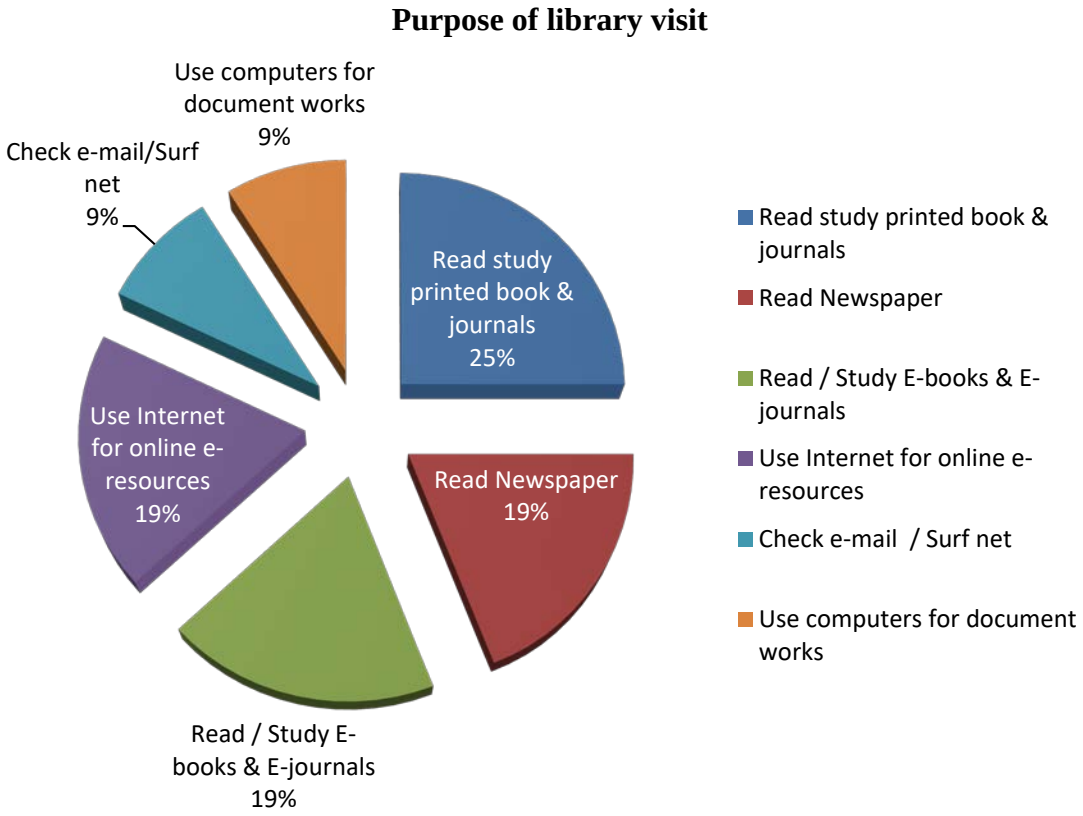

Table 5.2.3 and figure 5.2.2 shows the purpose of the library visit by the users. This shows that maximum users 55.3% visit library to read and study, 42.1% visit library to read newspapers, 42.1% visit library to use e-resources, 42.1% visit library to use online e-resources. Majority of the students still use library to study and read textbooks, which clearly shows that it is of course a reading / studying place.

5.2.4 Availability of computers by users in library

Table 5.2.4: Availability of computers in library institution wise cross tabulation

Users Response	Institution					(n=76)	
	PAHS	NAMS	TUTH	NMC	KMC	Total	Percentage
More than enough	0	0	0	0	1	1	1.3%
Just sufficient	6	9	8	10	6	39	51.3%
Hardly get any when needed	6	6	5	1	5	23	30.3%
Not at all	3	1	3	4	2	13	17.1%
Total	**15**	**16**	**16**	**15**	**14**	**76**	**100%**

Source: Field survey, 2016

Table 5.2.4 shows the users' responses on availability of computers institution wise. Among them, only 1.3% says it is "more than enough," majority 51.3% of the respondents felt it was “just sufficient.” Those feeling it "hard to get any when needed" stood at 30.3% and those who “never found” a computer to use stood at 17.3%.

5.2.5 Computer hardware and software availability for e-resources

Table 5.2.5: Responses on available computer's hardware and software

Users Response	Institution					(n=76)	
	PAHS	NAMS	TUTH	NMC	KMC	Total	Percentage
Enough	2	5	2	2	2	13	17.1%
Just sufficient	7	8	7	5	6	33	43.4%
Not enough	4	3	5	6	3	21	27.6%
Poor	2	0	2	1	1	6	7.9%
Not at all	0	0	0	1	2	3	3.9%
Total	**15**	**16**	**16**	**15**	**14**	**76**	**100.0%**

Source: Field survey, 2016

Table 5.2.5 shows the respondents who found it enough stood at 17.1%, while 43.4% of users found the hardware and software just sufficient, followed by 27.6% who found it not enough and those who found it poor stood at 7.9%. Those who think not at all stood at 3.9%. Overall, majority of users felt that it is just sufficient.

5.2.6 Sufficiency about library opening hours

Table 5.2.6: Time sufficiency about library opening hour institution wise

Users Response	Institution					(n=76)	
	PAHS	NAMS	TUTH	NMC	KMC	Total	Percentage
More than enough	1	2	2	2	4	11	14.5%
Enough	8	4	6	3	1	22	28.9%
Sufficient	2	5	6	6	6	25	32.9%
Hardly sufficient	1	2	0	1	1	5	6.6%
Need to extend hours	3	3	2	3	2	13	17.1%
Total	**15**	**16**	**16**	**15**	**14**	**76**	**100.0%**

Source: Field survey, 2016

Table 5.2.6 shows users' responses on library opening hours. Among them 14.5% of felt it is “more than enough”; 28.9% felt “enough”. And maximum of them, 32% felt it is sufficient; 6.6% felt hardly sufficient and those heavy users who felt "need to extend hours" stood at 17.1%.

5.2.7 Internet speed

Table 5.2.7: Users' response about Internet speed institution wise

Source: Field survey, 2016

Users Response	Institution					(n=76)	
	PAHS	NAMS	TUTH	NMC	KMC	Total	Percentage
Yes, it is superfast	0	3	0	0	0	3	3.9%
Sufficiently enough	4	4	1	1	1	11	14.5%
Just sufficient	6	6	6	9	8	35	46.1%
Poor	5	3	9	5	5	27	35.5%
Total	15	16	16	15	14	76	100.0%

Table 5.2.7 shows users' responses on the speed of the Internet at their library. Lesser, only 3.9% of the users felt it is superfast, 14.5% felt it is sufficiently enough, majority 46.1% felt it is just sufficient. For those who felt it is poor stood at 35.5%.

5.2.8 Individuals' skill on online searching

Table 5.2.8: Users' responses about skills in online searching

Users Response	Institution					(n=76)	
	PAHS	NAMS	TUTH	NMC	KMC	Total	Percentage
Little	2	0	0	0	0	2	2.6%
Satisfactory	7	8	7	5	4	31	40.8%
Good	6	5	4	10	5	30	39.5%
Very good	0	1	4	0	5	10	13.2%
Excellent	0	2	1	0	0	3	3.9%
Total	**15**	**16**	**16**	**15**	**14**	**76**	**100.0%**

Source: Field survey, 2016

Table 5.2.8 shows the users skill in online searching. Very low, only 2.6% felt they posses little skill. Majority, 40.8% felt that they have satisfactory skills, around the same range 39.5% felt that they have good skills, those having very good skill stood at 13.2% and having excellent skill on online searching stood at 3.9%.

5.2.9 Computer and Internet literacy needs of the respondents

Table 5.2.9.1: Computer and Internet literacy needs institution wise:

Literacy needs	Institution									
	PAHS		NAMS		TUTH		NMC		KMC	
	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Computer literacy	6	9	3	13	0	16	4	11	3	11
Internet Literacy	7	8	3	13	3	13	4	11	2	12
Online Searching Literacy	11	4	11	5	7	)9	8	7	4	10
E-resources availability	10	5	10	6	7	9	11	4	7	7
Total	**34**	**26**	**27**	**37**	**17**	**47**	**27**	**33**	**16**	**39**

Source: Field survey, 2016

Table 5.2.9.2: Overall computer and Internet literacy needs institution wise:

Literacy needs	Need training		Need no training	
	n=121	Percent	n=183	Percent
Computer literacy	16	13.2%	60	32.8%
Internet literacy	19	15.7%	57	31.1%
Searching literacy	41	33.9%	35	19.1%
ER availability	45	37.2%	31	16.9%
Total	**121**	**100.0%**	**183**	**100.0%**

Field survey, 2016

Tables 5.2.9.1 and 5.2.9.2 show whether they require training or not regarding computer, Internet, online searching and e-resources availability. Maximum users at 37.2% felt they need training on e-resources availability followed by 33.9% felt they need online searching literacy. Among them, 15.7% felt they need training on Internet literacy and only 13.2% felt they need training on computer literacy. Those who don't need training on respective literacy were not discussed as it was reciprocals of needing literacy.

5.2.10 Extent of e-resources use versus printed materials in study / work

Table 5.2.10: Extent of e-resources use versus printed materials in study / work

Extent of use	Institution					(n=76)	
	PAHS	NAMS	TUTH	NMC	KMC	Total	Percentage
E-resources exclusively	3	5	0	1	5	14	18.4%
E-resources moderately	10	4	6	1	4	25	32.9%
Electronic & print equally	2	6	5	7	5	25	32.9%
Mostly printed resources	0	1	5	6	0	12	15.8%
Total	**15**	**16**	**16**	**15**	**14**	**76**	**100.0%**

Source: Field survey, 2016

Table 5.2.10 shows how much e-resources the respondents use against print resources. Among them 32.9% of them used e-resources moderately and same 32.9% used e-resources and print resources equally. About 18.4% of them use e-resources exclusively. Those who used mostly printed resources stood at 15.8%. This shows clear inclination towards e-resource usage by the medical postgraduate students.

5.2.11 Opinions on giving up printed material for e-resources

Table 5.2.11.1: User responses on giving up printed materials for soft copy of same

Materials	Institution									
	PAHS		NAMS		TUTH		NMC		KMC	
	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Printed Journal	12	3	9	7	12	4	6	9	7	7
Printed books	8	7	3	13	2	14	2	13	6	8
Printed reference books	11	4	5	11	6	10	7	8	9	5
Printed dictionaries	10	5	9	7	11	5	8	7	12	2
Printed manuals	10	5	7	9	12	4	7	8	7	7
Total	**51**	**24**	**33**	**47**	**43**	**37**	**30**	**45**	**41**	**29**

Source: Field survey, 2016

Table 5.2.11.2: User responses on giving up printed materials for soft copy of same

Materials	Give up responses		Retain Responses	
	N	Percent	N	Percent
Printed journal	46	23.2%	30	16.5%
Printed books	21	10.6%	55	30.2%
Printed reference books	38	19.2%	38	20.9%
Printed dictionaries	50	25.3%	26	14.3%
Printed manuals	43	21.7%	33	18.1%
Total	**198**	**100.0%**	**182**	**100.0%**

Source: Field survey, 2016

Tables 5.2.11.1 & 5.2.11.2 show whether they want to give up the printed materials or not if they were provided with electronic version of the same. Among them 198 responses were pro give up and 182 responses were against give up. Maximum among against giving up response, 30.2% wants to retain books, which indicates that books are still favourite print media to read. Contrary to that 25%, maximum among give up responses wants dictionaries to give up in favour for electronic version of the same. This shows that books in print will still make its presence for long in the future, contributing the libraries to build collection.

5.2.12 Method of finding / locating electronic journal article

Table 5.2.12: Responses about methods of finding / locating electronic journal article

Source: Field survey, 2016

Methods (all that apply)	Responses		Percent of cases (n=76)
	N	Percent	
Internet search engine i.e. Google etc	55	24.2%	72.4%
Reference databases i.e. PubMed etc	50	22.0%	65.8%
Full text databases i.e. HINARI etc	34	15.0%	44.7%
Lists of references on printed journals	32	14.1%	42.1%
Citations in another publications	22	9.7%	28.9%
From teachers / colleagues	18	7.9%	23.7%
E-print / E-journal archives	8	3.5%	10.5%
With librarian's / staff's help	8	3.5%	10.5%
Total	**227**	**100.0%**	**298.7%**

Figure 5.2.3: Rresponses about methods of finding / locating electronic journal article

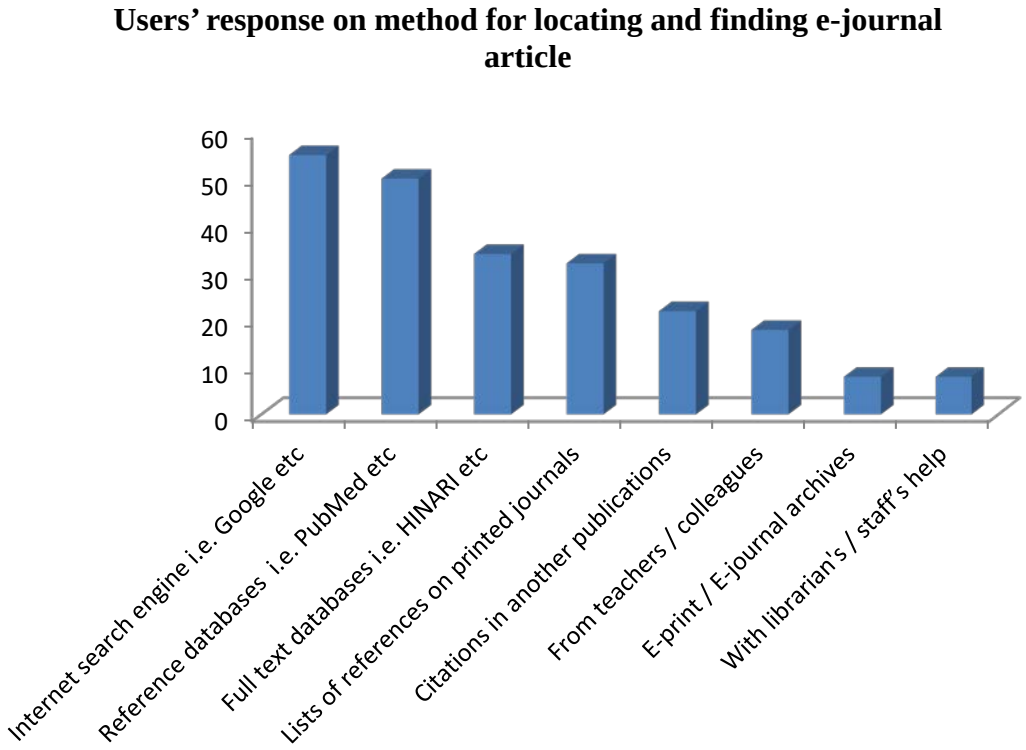

Table 5.2.12 and Fig 5.2.3 show the respondents behaviour on locating and finding e-resources. The table and figure show the method of searching. It showed 72.4% use Google/Google Scholar, 65.8% use reference database on medicine like PubMed, 44.7% use full text database like HINARI, 42.1% use references on printed journals, 28.9% use citations on another publications, 23.7% get it from teachers or colleagues. Those who get it from e-print/e-journal archives and librarian's help both stood at 10.5%. One field was kept open for anything beside these for searching and locating, none was observed among the respondents. This shows that searching Google and Google Scholar is the most favoured method of locating and finding e-resources among medical students having postgraduate degree or above.

5.2.13 Articles obtained in electronic form during last month:

Table 5.2.13: Users' response on articles obtained during last month

Articles	Institution					Total	(n=76) Percentage
	PAHS	NAMS	TUTH	NMC	KMC		
< 5	8	4	4	8	9	33	43.4%
5 -10	2	8	8	5	2	25	32.9%
10 -15	3	2	3	0	0	8	10.5%
15 -20	0	1	0	0	0	1	1.3%
20 >	2	1	1	2	3	9	11.8%
Total	**15**	**16**	**16**	**15**	**14**	**76**	**100.0%**

Source: Field survey, 2016

Table 5.2.13 shows the number of article obtained during last month. Data showed 43.4% obtained < 5 articles, 32.9% obtained 5-10 articles, 10.5% obtained 10-15 articles, 1.3% obtained 15-20 articles, and 11.8% obtained more than 20 articles during last month. This is clear indication that all of the respondents are active using e-resources by downloading articles online.

5.2.14 Purpose of information obtained from e-resources

Table 5.2.14: Purpose of information obtained from e-resources:

Source: Field survey, 2016

Purpose (all that apply)	Responses		(n=76) Percent of Cases
	N	Percent	
For study, dissertation	49	24.3%	64.5%
To keep up / breast	43	21.3%	56.6%
Research work	33	16.3%	43.4%
For complement reading	32	15.8%	42.1%
Treatment of patient	25	12.4%	32.9%
Teaching & counseling	20	9.9%	26.3%
Total	**202**	**100.0%**	**265.8%**

Figure 5.2.4: Purpose of information obtained from e-resources

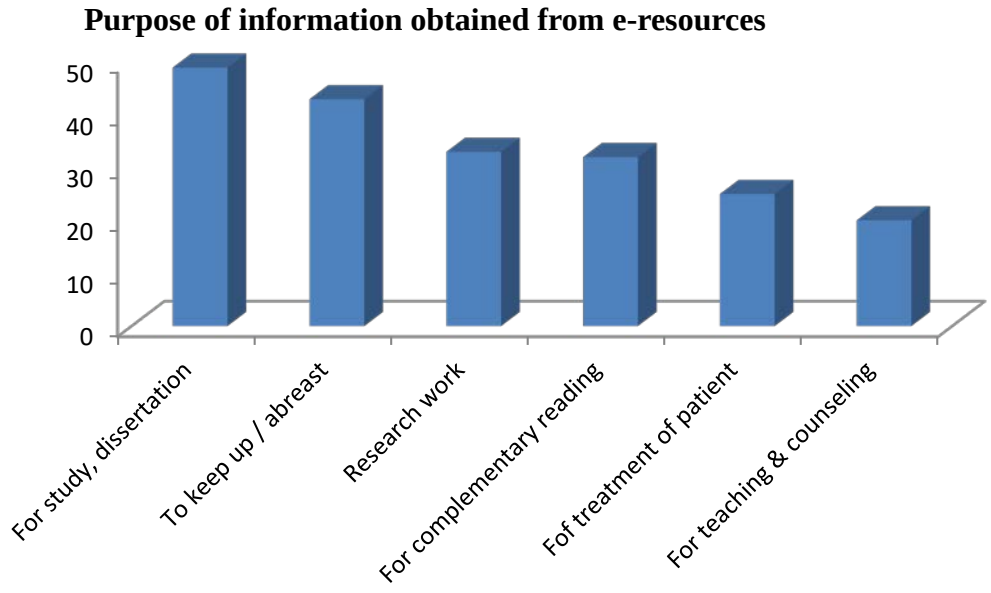

Table 5.2.14 and Figure 5.2.4 show that information obtained from e-resources are used for study and preparing dissertations, at 65.5% (maximum). To become abreast in one's field stood at 56.6%. Among them, 43.4% used it for research work, 42.1% for complementary reading, 32.9% for treatment of patient and 26.3% for teaching and counseling purposes.

5.2.15 Impact of e-resources on users' work

Table 5.2.15: Impact of e-resources on users' work:

Impact level	Institution					Total	(n=76) Percentage
	PAHS	NAMS	TUTH	NMC	KMC		
Exclusively	1	1	1	1	1	5	6.6%
Considerably	5	7	13	5	6	36	47.4%
Sufficiently	7	4	1	4	1	17	22.4%
To some extent	1	4	0	4	6	15	19.7%
Not at all	1	0	1	1	0	3	3.9%
Total	15	16	16	15	14	76	100.0%

Source: Field survey, 2016

Table 5.2.15 shows the impact of e-resources on respondents' work / study. This table shows 6.6% felt it has affected exclusively, 47.4% felt it has affected considerably, 22.4% felt that it has affected sufficiently. For 22.4% it has affected to some extent and for only 3.9% it has not affected at all. Majority of them 47.4% felt that it has affected considerably to their work and study.

5.2.16 Choice of format in using e-resources

Table 5.2.16: Choice of format in using e-resources

Formats (all that apply)	Responses		Percent of Cases (n=76)
	N	Percent	
PDF	71	78.0%	93.4%
EPUB	7	7.7%	9.2%
HTML/XML	4	4.4%	5.3%
MS Word	6	6.6%	7.9%
Other	3	3.3%	3.9%
Total	91	100.0%	119.7%

Source: Field survey, 2016

Figure 5.2.5 Choice of format in using e-resources

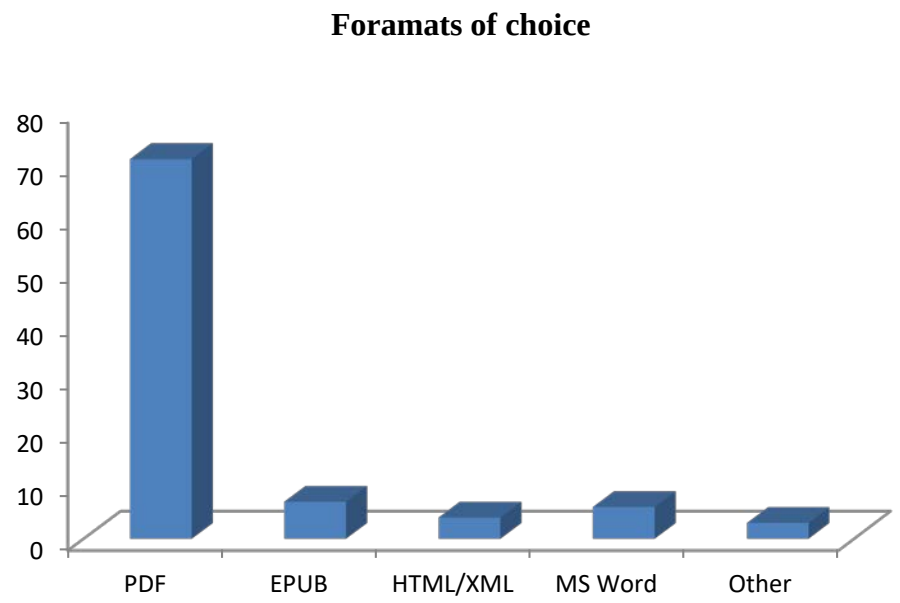

Table 5.2.16 and figure 5.2.5 show the preferences of respondents' format in which they want to read or use e-resources. Table reveals among the multiple responses that 93.4.0% likes PDF format, 9.2% likes EPUB format, 5.3% likes HTML/XML format, 7.9% likes Word format. Only 3.9% wanted other formats. Here they liked PPT i.e. power point format for e-resources. What is clear from this table is that PDF is the most preferred (93.4%) format for e-resources usage.

5.2.17 Choice of device in reading / using e-resources

Table 5.2.17: Choice of devices among users in using e-resources:

Respondents' choice of devices to use e-resources			
Devices: (all that apply)	Responses		Percent of Cases (n=76)
	N	Percent	
PC / Laptop	46	44.2%	60.5%
Desktop	8	7.7%	10.5%
Smartphone / Tablet	46	44.2%	60.5%
E-book reader	4	3.8%	5.3%
Total	**104**	**100.0%**	**136.8%**

Source: Field survey, 2016

Table 5.2.17 shows the respondents' choice of devices for using e-resources. The table reveals that 60.5% likes to read e-resources on PC or laptop computer, 10.5% likes to read on desktop computer, 60.5% likes to read or use those e-resources on Smartphone / Tablets, only 5.3% likes to read on e-book reader. The data shows that laptop, smartphone, and tablets are more popular than e-book reader or standalone desktop computer. Low percentage of e-book reader might be due to its competitiveness with smartphone for portability. This also suggests that users are using their own devices to use e-resources.

5.2.18 Internet sites visited for medical articles

Table 5.2.18: Internet sites visited for medical articles

Internet sites (all that apply)	Responses		Percent of Cases (n=76)
	N	Percent	
PubMed	57	20.3%	75.0%
Google	52	18.5%	68.4%
HINARI	51	18.1%	67.1%
Medscape	46	16.4%	60.5%
UpToDate	42	14.9%	55.3%
Respective website	15	5.3%	19.7%
Cochrane Library	9	3.2%	11.8%
NepJOL	7	2.5%	9.2%
Others	2	0.7%	2.6%
Total	**281**	**100.0%**	**369.7%**

Source: Field survey, 2016

Figure 5.2.6: Internet sites visited for medical articles

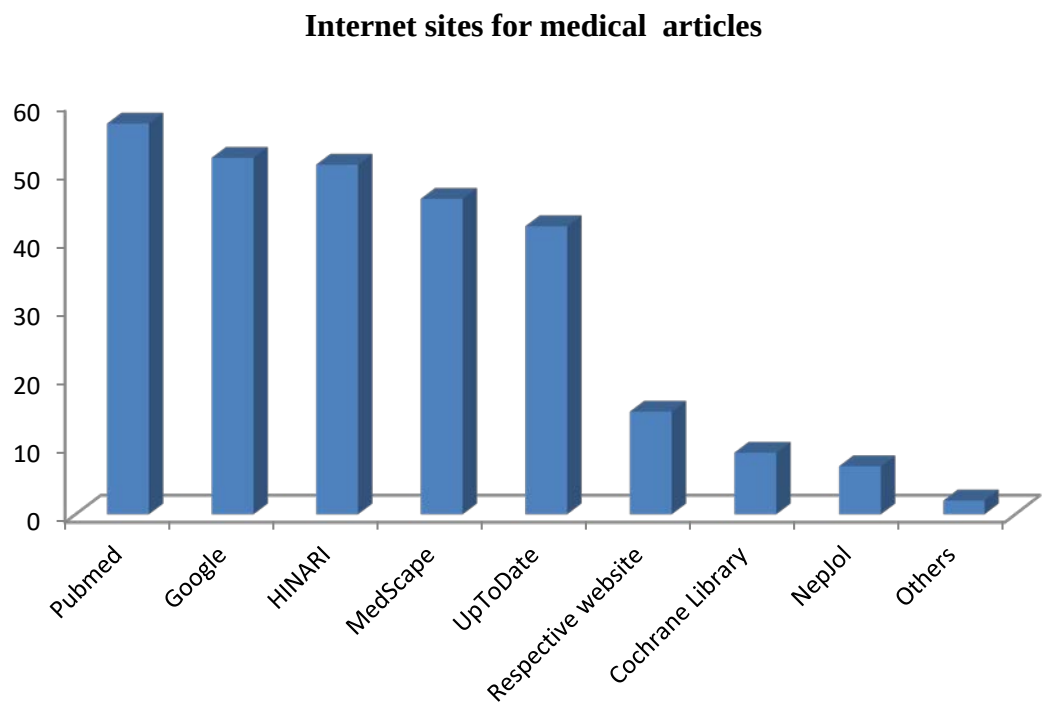

Table 5.2.18 and figure 5.2.6 above shows that for medical articles 75.0% of respondents are visiting PubMed, 68.4% of respondents are visiting Google or Google Scholar, 67.1% of respondents are visiting HINARI, 60.5% of respondents are visiting Medscape, 55.3% of respondents are visiting UpToDate, 19.7% of respondents are visiting respective publishers' websites, 11.8% of respondents are visiting Cochrane Library, 9.2% of respondents are visiting NepJOL, 2.6% of respondents are visiting other than provided to them. Maximum of the users are searching PubMed for medical articles when Google became second choice.

5.2.19 Internet sites visited for medical e-books

Table 5.2.19: Internet sites visited for medical e-books

Sites (all that apply)	Responses		Percent of Cases (n=76)
	N	Percent	
Free e-book provider	39	28.3%	51.3%
Torrents	36	26.1%	47.4%
HINARI	32	23.2%	42.1%
Library's own server	10	7.2%	13.2%
Publication houses website	9	6.5%	11.8%
Amazon	8	5.8%	10.5%
Others	4	2.9%	5.3%
Total	138	100.0%	181.6%

Source: Field survey, 2016

Figure 5.2.7: Internet sites visited for medical e-books

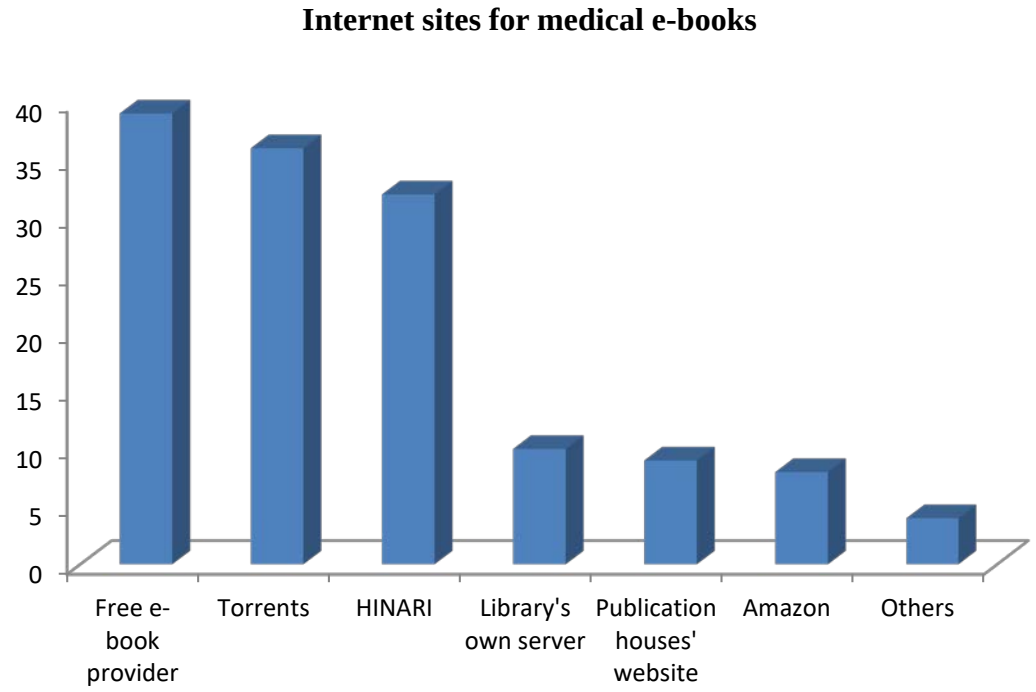

Table 5.2.19 and figure 5.2.7 depicts the picture about sites respondents visit for medical e-books. The table reveals 51.3% of them are visiting free e-book providers, 47% searching torrent sites, 13.2% are searching at library's own server, 11.8% are searching publication houses' websites, 10.5% searching Amazon and 5.3% are searching other sites. This shows clearly that most of the users are searching in free e-book providers' site. The users are looking for free, they don't want to pay. Most of the e-book is used free of costs. Second major percent is looking at torrent sites to fulfill their need regarding e-books, which is again looking for free. The purchasing trend has not yet started in this category.

5.2.20 Internet sites for random searching for e-resources

Table 5.2.20: Internet sites for random searching for e-resources

Sites (all that apply)	Responses		Percent of Cases (n=76)
	N	Percent	
Google	65	44.5%	86.7%
PubMed	25	17.1%	33.3%
Wikipedia	23	15.8%	30.7%
UpToDate	18	12.3%	24.0%
HINARI	15	10.3%	20.0%
Total	**146**	**100.0%**	**194.7%**

Source: Field survey, 2016

Figure 5.2.8: Internet sites for random searching for e-resources

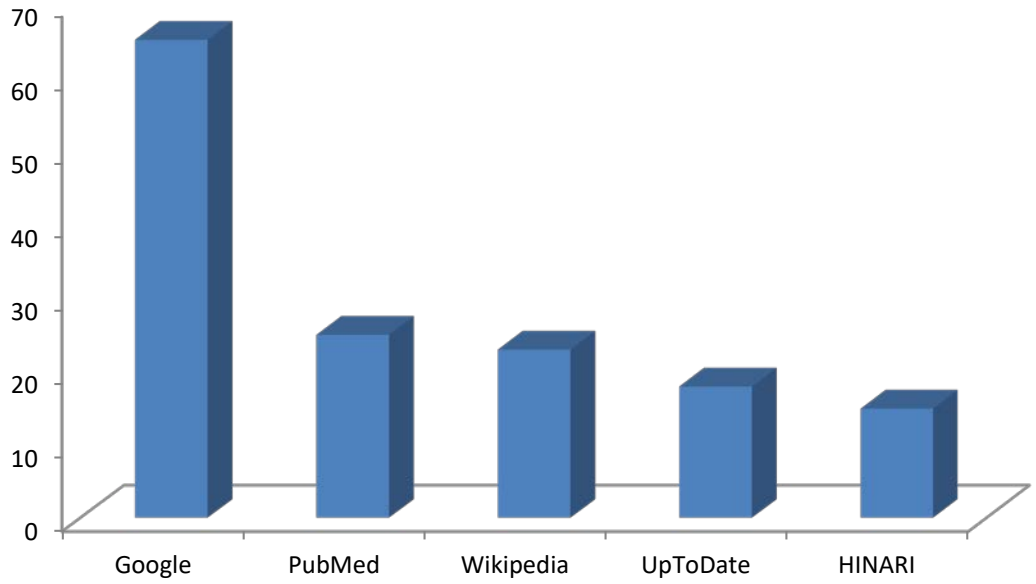

Table 5.2.20 and figure 5.2.8 shows the Internet sites used for random searching. This means searching without being specific about the sites. The table shows 86.7% users searching Google, 33.3% searching PubMed, 30.7% searching Wikipedia, 24.0% searching UpToDate, 20.0% are searching HINARI for medical e-resources. Google and Wikipedia is also a popular site for randomly searching medical e-resources beside medical resource site.

5.2.21 Methods for Internet e-resources downloading

Table 5.2.21: Methods for Internet e-resources downloading

Methods (all that apply)	Responses		Percent of Cases (n=76)
	N	Percent	
Direct download	43	39.4%	56.6%
Torrent	36	33.0%	47.4%
Download Manager	26	23.9%	34.2%
Others	4	3.7%	5.3%
Total	**109**	**100.0%**	**143.4%**

Source: Field survey, 2016

Figure 5.2.9 Methods for Internet e-resources downloading

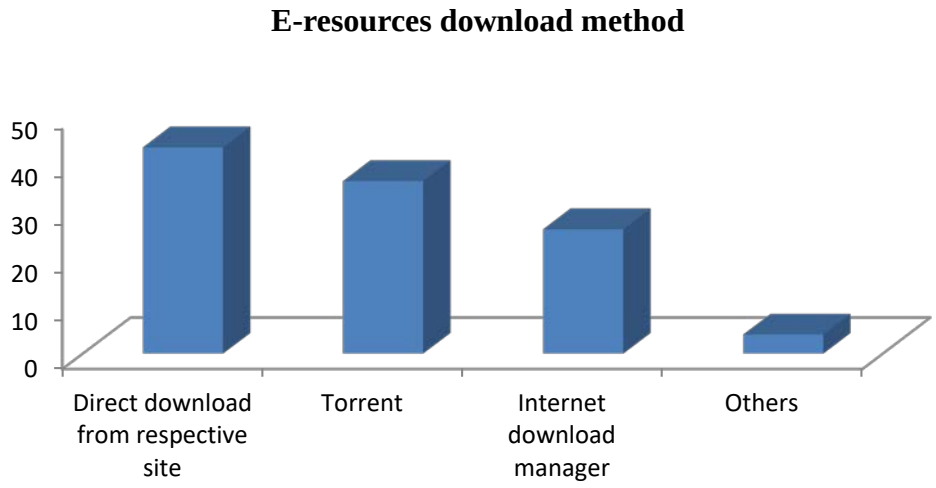

Table 5.2.21 and figure 5.2.9 show the respondents' method of downloading e-resources. The table reveals 56.6% are down loading directly, 47.4% are using torrent as their downloading tool, 34.2% are using different Internet download managers, and 5.3% are using other means to download e-resources from the Internet.

5.2.22 Finding key materials from e-resources available

Table 5.2.22: Finding key materials from e-resources available

Finding level	Institution					Total	Percentage (n=76)
	PAHS	NAMS	TUTH	NMC	KMC		
Very easily	0	0	0	0	1	1	1.3%
Easily	1	7	5	4	4	21	27.6%
To some extent	13	7	11	8	9	48	63.2%
With difficulty	1	2	0	3	0	6	7.9%
Total	**5**	**16**	**16**	**15**	**14**	**76**	**100.0%**

Source: Field survey, 2016

Table 5.2.22 shows the users responses about finding key materials from e-resources. The table reveals only 1.3% feeling it “very easily”, 27.6% felt it “easily”, and majority of them 63.2% feeling it “to some extent” and 7.9% felt it “with difficulty”. Since the majority of the respondents opted for “easily” and “to some extent” at 27.6% and 63.2% respectively, it is considered that users are finding what they have searched and obtained.

5.2.23 Getting e-resources out of one’s need

Table 5.2.23: Getting e-resources out of one’s need

Get contents	Institution					Total	(n=76) Percentage
	PAHS	NAMS	TUTH	NMC	KMC		
< 20%	0	2	0	4	2	8	10.5%
20 - 40%	5	6	7	5	3	26	34.2%
40 - 60%	5	5	7	5	5	27	35.5%
60 - 80%	5	2	0	1	4	12	15.8%
80% >	0	1	2	0	0	3	3.9%
Total	15	16	16	15	14	76	100.0%

Source: Field survey, 2016

Table 5.2.23 shows the percent of e-resources that responders are getting out of their need. The table reveals 10.5% respondents are getting less than 20%, 34.2% respondents are getting 20-40%, 35.5% respondents are getting 40-60%, 15.8% respondents are getting 60/80%, only 3.9% respondents are getting more than 80% of materials in e-resources out their needs.

5.2.24 Inhibiting factors of e-resource use

Table 5.2.24: Inhibiting factors of e-resource use

Factors: (all that apply)	Responses		Percent of Cases (n=76)
	N	Percent	
Subscription to access	63	21.9%	84.0%
Insufficient e-resources	45	15.6%	60.0%
Technical Problems; hardware etc.	44	15.3%	58.7%
Lack of knowledge about tools & tech	39	13.5%	52.0%
Lack of proper guidance	34	11.8%	45.3%
Lack of portability	30	10.4%	40.0%
Inadequate opening hours	28	9.7%	37.3%
Others	5	1.7%	6.7%
Total	288	100.0%	384.0%

Source: Field survey, 2016

Figure: 5.2.10 Inhibiting factors of e-resource use

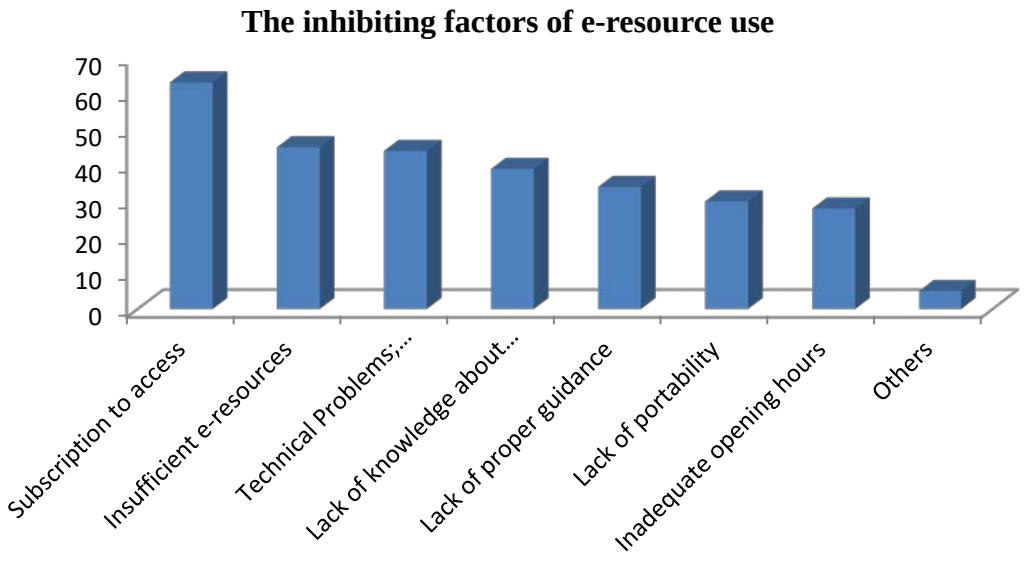

Table 5.2.24 and figure 5.2.10 shows the inhibiting factors of e-resource use. The table reveals 84.0% felt “subscription to access”, 60.0% felt “insufficient e-resources,” 58.7% felt “technical problems like software, hardware, electricity, connectivity etc.,” 52.0% felt “lack of knowledge about tools and technology,” 45.3% felt “lack of proper guidance,” 40.0% felt “lack of portability,” 37.3% felt “inadequate opening hours,” and 6.7% felt “others” as factors for inhibiting e-resource use. It was observed earlier in Table 5.2.19 that most of the users 51.3% are using free e-book providers site to get e-books and 47.4% are using torrents to download will obviously feel “subscription for access” as a main inhibiting factor. This is clear that purchasing and subscribing is still in its infancy to get e-resources from international community.

5.2.25 Problems with e-resource use

Table 5.2.25: Problem with e-resource use

Reasons (all that apply)	Responses		Percent of Cases (n=76)
	N	Percent	
Needed material not available	48	18.5%	63.2%
Available not sufficient	48	18.5%	63.2%
Technical problem	44	17.0%	57.9%
Difficult to locate	41	15.8%	53.9%
Not able to use	24	9.3%	31.6%
Difficult to read from screen	21	8.1%	27.6%
Not familiar with e-resources	18	6.9%	23.7%
I don't feel any problem	15	5.8%	19.7%
Total	259	100.0%	340.8%

Source: Field survey, 2016

Figure 5.2.11: Problems with e-resource use

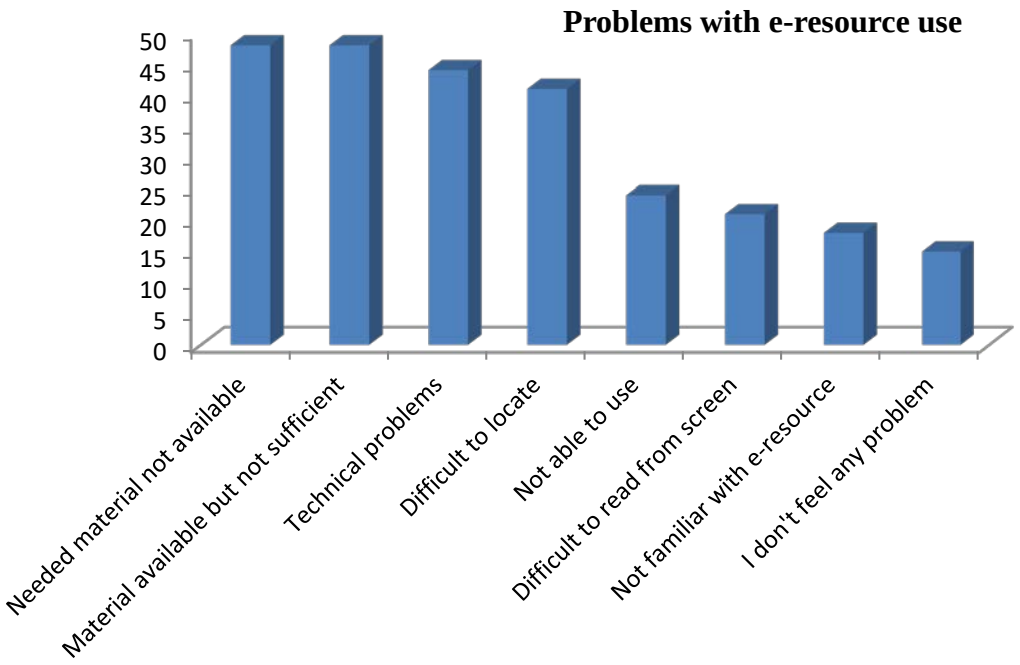

Table 5.2.25 and figure 5.2.11 shows the problems with e-resource use and its retrieval by the respondents. The data reveals, 63.2% felt that the needed material is not available in electronic format, equally 63.2% felt that the available material is not sufficient, 57.9% felt technical problem as main problem, 53.9% felt it difficult to locate, 31.6% felt not able to use e-resources as main problem, 27.6% felt it difficult to read from screen, 23.7% felt it not familiar with e-resources, and 19.7% felt no problem for e-resource use.

5.2.26 Satisfaction with library providing e-resources

Table 5.2.26: Satisfaction with library providing e-resources

Satisfaction level	Institution					Total	Percentage (n=76)
	PAHS	NAMS	TUTH	NMC	KMC		
Not at all	0	0	4	3	1	8	10.5%
Poorly satisfied	2	3	7	5	1	18	23.7%
Just satisfied	7	9	4	5	8	33	43.4%
Fairly satisfied	6	3	1	1	4	15	19.7%
Well satisfied	0	1	0	1	0	2	2.6%
Total	**15**	**16**	**16**	**15**	**14**	**76**	**100.0%**

Source: Field survey, 2016

Table 5.2.26 shows the satisfaction about library providing e-resources. The data shows 10.5% are not satisfied, 23.7% poorly satisfied, 43.4% just satisfied, 19.7% fairly satisfied, and only 2.6% well satisfied. Large or majority of the respondents, 43.4% of them are “just satisfied” with the library providing e-resources out of their need.

5.2.27 Respondents' recommendations for libraries to subscribe any databases:

At the end of the questionnaire an open option was left for the user's to mention any databases or subscription to any sites. Interesting suggestions were received in this section. The respondents suggested to subscribe:

- ACEP (American College of Emergency Physicians www.acep.org)
- EMBASE (Excerpta Medica dataBASE www.embase.com)
- www.scijournal.org
- Elsevier (www.elsevier.com)
- Wiley Online (onlinelibrary.wiley.com)
- Epocrates Online (www.epocrates.com)
- Medline Plus (www.nlm.nih.gov/medlineplus)
- Bookfi.org (en.bookfi.org).

5.2.28 Suggestions received from respondents

Many suggestions were received through questionnaire. Where their concerns were mainly with the Internet facility with enough speed. Most of the responders said subscription to the e-resources access is nuisance in using e-resources efficiently. One of the respondent from NMC wrote "If such methods for e-resources are successfully made accessible, it would be much more helpful for Nepali medical students and doctors to get recent advances in medical world. They can be sharpened with recent advances and patients can be treated with new techniques. If we want to get improved and go with the pace of the rest of the world then such e-resources and their applications are must without any delay."

CHAPTER VI: CONCLUSION AND RECOMMENDATIONS

This study is an attempt to explore the status of core medical e-resource used in the medical libraries within Kathmandu valley; the weaknesses and strength of medical libraries to acquire and handle these resources hand in hand with the users. It has also been tried to find the users individual behaviour and trend in using e-resources. The main focus of this study was to find out the Internet sites that are providing e-resources need of our medical professionals.

This study was carried out in five medical colleges within Kathmandu valley. The population frame for this study comprised only those users of the medical libraries who visited library during the period of March 4 and March 29, 2016. Out of seven medical colleges running within Kathmandu valley, only five libraries and their users were chosen for the survey. Only the postgraduate students, research scholars and faculties willing to fill up the questionnaire were chosen for the user survey part. The librarians of the respective libraries were asked to fill up questionnaire about their libraries regarding e-resources. The respondents were librarians of those medical libraries and 76 users who filled up the questionnaire. The information was collected through structured questionnaires. The data thus obtained, entered in IBM SPSS for analysis and MS Excel to make figures for clarity. The findings of the study are summarized as follows:

6.1 Conclusion

Analysis of the survey data, showed poor knowledge about medical e-resources availability among the librarians despite having adequate hardware, software, and Internet connectivity. Budgeting is also not clear for e-resources. However, the knowledge about e-resource among the users is high in contrast to their librarians. Many of the young postgraduate students are resorting to e-resource content but do not want to give up the printed books. E-resources usage for patient care is also observed as important usability. But the availability of only HINARI is not proving everything, more databases are needed in health science field. Data showed laptop, smartphone, and tablets are being used more to read and use these resources and PDF the most desired format to read. Off course, the users are using different medical e-resource sites but they are encountered with subscription to access in Dollars and Euros more

often. Therefore, the users are looking for free resources and pirated contents through torrents. The problems and inhibiting factors for its usage are subscription to access, slow Internet speed during busy hours, insufficient e-resources, lack of knowledge about tools and technology to use, and its availability. Despite many problems the users are satisfied to some extent by what they are getting through free e-book providers, PubMed, HINARI, Medscape, NepJOL and pirated contents through torrent.

6.2 Recommendations

Medical libraries in the teaching hospitals are more important for medical knowledge, understanding and research in medical science. Moreover, recent advancements in medical field is directly related to the patient care. The following recommendations have been made, based on findings of this study:

a) The majority of librarians were not familiar with the medical e resources being used by the users, despite having adequate infrastructure and support from IT department. Therefore, a strong need of training and exposure is felt in this field for the medical librarians. A frequent workshop or seminar about medical e-resource would be helpful. The more exposure the librarians get more they can provide competent service to its users.

b) Allocating budget for e-resource was not found in single library that were studied. In spite of making Individual expenses, subscribing some important databases through consortium will be more helpful for the medical libraries. Resource sharing through networking between all the medical libraries will also make the scarcity of e-resources some easy.

c) The users were found to be acquainted with computers and Internet but they were lacking in idea about its availability and tools and technology to use it. Therefore, trainings of such kind is felt necessary for its competent usage.

d) Although the libraries are providing necessary computer, hardware and software, the trend being developed was bringing their (user) own device in library to use e-resource. This was also supported by wide use of smartphone, tablets, and PC laptops. Therefore, libraries have to think in providing the Internet through Wi-Fi, an uninterrupted electricity and subscriptions to important databases to use e-resources efficiently.

e) Many of the users are either looking for e-book provider or torrent sites for pirated content. The purchasing trend has not started in our country. The government should think about that for reasonable monetary value and method for payment in local currency. Since subscribing for every databases is impossible, building a consortium for negotiation and cooperation with biggest e-resource provider is needed with government's help.

f) HINARI is the biggest journal article and e-book provider for underdeveloped countries. There is also some limitations, many of the contributors to HINARI restrict article before 1996 for free. They have vowed to provide the current contribution up until 2020. Strategies to meet challenges after 2020 should be started right now before panicking after 2020.

g) Libraries should take initiative for awareness about e-resources' availability and usability. For that purpose they must first take interest by themselves and be aware in those areas before embarking into patron education.

h) As it was earlier discussed that there are many databases emerging day by day. Every subfield in health sciences are producing their own databases. Beside, our knowledge on them, some suggestions were received from the users in regard to databases in health sciences. Few of them are as follows:

i. Epocrates Online (www.epocrates.com)
ii. ACEP (American College of Emergency Physicians www.acep.org)
iii. EMBASE (Excerpta Medica dataBASE www.embase.com)
iv. www.scijournal.org
v. Elsevier (www.elsevier.com)
vi. Wiley Online (onlinelibrary.wiley.com)
vii. Medline Plus (www.nlm.nih.gov/medlineplus)
viii. Bookfi.org (en.bookfi.org).

Since users are free to suggest anything they want, cost and benefits must be studied before subscribing to any database thoroughly.

i) It is felt that to know about the full scale e-resources in health sciences, more study and research have to be conducted in this field.

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APPENDICES

QUESTIONNAIRE FOR LIBRARIANS

Dear fellow librarians, I am collecting data your library through this questionnaire to fulfil the requirements of MLISc thesis entitled **"E-resources: as its application and user satisfaction in selected medical libraries within Kathmandu valley."** I humbly request you to complete this questionnaire. The information provided by you about your organization will be kept confidential and will be used solely for this study. Your cooperation will be highly appreciated for completing this study.

In this questionnaire, e-resources mean any or all of the following electronic items: electronic journals, electronic books, dictionaries, reference books, online & offline databases etc. which you can access via computer or personal devices (smartphone, tablet, iPad, e-reader etc.)

Demographic Information:

Name of Institution:
Year of Establishment:
Address:
Phone / email :
Institutional Homepage:
Library's Independent Webpage (if any):

Please tick (√) appropriate option/s suitable to your organization library:

1. How many staffs are there in your library? Please specify the number ……

2. Qualifications of the Staffs:

Degree	Number of staffs
a. MLISc	……
b. BLISc	……
c. Short-term course	……

d. IT Technician ……

e. Clerical / Other ……

3. You have separate e-resource section in your library:

   a) Yes b) No

4. How many hours you open library & e-resource section for users?

   a) < 6 hours b) 6 -10 hours

   c) 11-12 hours d) 12 > hours

5. What types of e-collections do you posses? Better if you specify the number:

a) Books in electronic format (Number .....)

b) Journals in electronic format (Number .....)

c) Theses / report/ research in electronic format (Number .....)

d) Audiovisuals, CD/DVDs etc. (Number .....)

e) Others ..... (Number .....)

f) Not applicable.

6. Do you follow copyright rules while using those e-resources?

   a) Yes b) No

7. You have Internet access in your library:

   a) Yes b) No

8. How many computers are there for users to access Internet?

   a) 5 – 10

   b) 10 – 20

   c) 20 – 30

   d) 30 – 40

   e) 40 >

9. The speed of Internet in your library:

   a) 256 Kbps

   b) 512 Kbps

   c) 1 Mbps

d) 2 Mbps

e) 2 Mbps >

10. Do you have an IT department / professional for your help?

a) Yes b) No

11. Who are using e-resources most? Please rate from 1 for higher use and 6 for lower use.

a. Faculties …….

b. Research scholars …….

c. Postgraduate students …….

d. Undergraduate students …….

e. Nurses …….

f. Allied health workers …….

12. Have any of your patrons approached you in the last 6 months asking you to get access to any Internet site for e-resources that you are hearing for the first time?

a)..... b).....

c)..... d).....

e) Do not remember f) Don't know

13. Annual budget allocation for your library?

a) NRs……. b) Don’t Know

14. Is that allocated annual budget sufficient for your library?

a) Very low

b) Not sufficient

c) Just sufficient

d) Sufficient enough

e) More than sufficient

15. Out of that how much is allocated for e-resources?

a) ..... b) Not applicable

16. Who decides for e-resource collection development?

a) Faculty b) Library Committee

c) Library Authority d) Institution Management / Admin.

e) Others.....

17. Which site do your patrons visit most to get e-resources according to your knowledge?

a) ..... b) .....

c) ..... d).....

e)..... f).....

18. Do you have subscriptions / membership to any e-books, e-journals or database site? (like HINARI, UpToDate, PERI, MedScape, NeLIC, etc) no matter if it is paid or free?

a) ..... b) .....

c) ..... d).....

e)..... f).....

19. If you pay how much do you pay in Nepalese rupees per year?

a) for (a).....per year or Free

b) for (b).....per year or Free

c) for (c).....per year or Free

d) for (d).....per year or Free

e) for (d).....per year or Free

f) for (d).....per year or Free

20. Is there any issue which this questionnaire doesn't address but you strongly want to mention about? Please feel free to put your words here.

********** THANK YOU **********

QUESTIONNAIRE FOR USERS

Dear participants, I am collecting data through this questionnaire to fulfil my requirements of MLISc thesis entitled **"E-resources: as its application and user satisfaction in selected medical libraries within Kathmandu valley."** I humbly request you to complete this questionnaire. The information provided by you will be kept confidential and will be used solely for this study purpose. Your cooperation will be highly appreciated for completing this study.

In this questionnaire, e-resources mean any or all of the following electronic items: electronic journals, electronic books, dictionaries, reference books, online & offline databases etc. which you can access via computer or personal devices (smartphone, tablet, iPad, e-reader etc.)

Demographic Information: Date: .....

Gender: Male ☐ Female ☐ Age: [25-30], [31-35], [36-40], [41-45], [46>]

Student: Postgraduate ☐ Faculty: .....

Lecturer: Faculty: .....

Professor (Incl. Associate/Assistant) Faculty: .....

Please tick (√) appropriate option/s suitable to you:

1) How often do you visit library?

   a) Daily b) Twice a week

   c) Once a week d) Fortnightly

2) Purpose of your library visit: (all that apply)

   a) To read newspapers

b) To check e-mail / Surf the net

   c) To read / study printed textbooks / journals

   d) To read / study e-books / e-journals

e) To use Internet for online resources

f) To use computers for documentation work

3) Are there enough numbers of computers for you to use in the library?

   a) More than enough
   b) Just sufficient
   c) Hardly get any computer when needed
   d) Not at all

4) Are computers equipped with necessary hardware & software (browsers, PDF readers, EPUB readers, Flash players, media players, etc.) for Internet browsing, downloading, displaying, or playing?

   a) Enough
   b) Just sufficient
   c) Not enough
   d) Poor
   e) Not at all

5) Is your library opening hours sufficient for you?

   a) More than enough
   b) Enough
   c) Sufficient
   d) Hardly sufficient
   e) Need to extend hours

6) Is your library Internet fast enough for locating and downloading e-resources?

   a) Yes, it is superfast
   b) Sufficiently enough
   c) Just sufficient
   d) Poor
   e) Of no use

7) Your skill in online searching is:

   a) Little b) Satisfactory c) Good d) Very good e) Excellent

8) Do you feel you need training for: (all that apply

a) Computer literacy Yes No
b) Internet literacy Yes No
c) Online searching literacy Yes No
d) E-resources availability Yes No

9) To what extent do you use electronic resources versus printed materials in your study / work?

a) Use electronic resources exclusively
b) Use electronic resources moderately
c) Use electronic resources and printed materials equally
d) Mostly use printed materials

10) Would you give up printed materials if you get access to electronic versions of the same? (all that apply)

a) Printed journals Yes No
b) Printed books Yes No
c) Printed reference books Yes No
d) Printed dictionaries Yes No
e) Printed manuals Yes No

11) How do you find or locate the e-journal article that you read? (all that apply)

a) Browsing references on books / journal articles
b) Searching full-text databases of e-journals (like HINARI)
c) Searching reference databases (like PubMed)
d) Using an Internet search engine (e.g. Google, Google Scholar)
e) From e-print or pre-print e-journal archives
f) Cited in another publication
g) Get it from teachers or colleagues
h) With the help of library / information service staff

12) How many scholarly articles have you obtained in electronic form during last month?

a) < 5 b) 5-10 c) 10-15 d) 15-20 e) 20 >

13) For what purpose you use the information obtained from e-resources (all that apply):

a) For complementary reading
b) For study (e.g. preparing dissertation)
c) To keep up (abreast) with developments in my own field
d) For treatment of patient
e) For teaching and counseling
f) For research work
g) Other.....

14) How has the use of electronic resources affected your work / study?

a) Exclusively b) Considerably c) Sufficiently
d) To some extent e) Not at all

15) Format you prefer in reading e-resources? (all that apply)

a) PDF b) EPUB c) HTML/XML (like you browse Internet)
d) MS Word e) Other.....

16) You would like to read those materials on (all that apply):

a) PC (Laptop)
b) Desktop computer
c) Smartphone / Tablet
d) E-book Reader (like Kindle, etc)
e) Other.....

17) Sites you visit in the Internet for medical articles (all that apply):

a) PubMed b) HINARI c) UpToDate d)MedScape
e) Cochrane Library f) NepJOL g) DOAJ h) PERI
i) Google / Google Scholar j) Respective journal website
k) Others.....

18) Sites you visit for medical e-books (all that apply):

a) HINARI
b) Library's own server
c) Publication houses' website
d) Free e-book providers
e) Amazon
f) Torrents
g) Others.....

19) Which site do you visit most for random searching? (all that apply):

a) PubMed
b) HINARI
c) UpToDate
d) Google / Google Scholar
e) Wikipedia
f) Others.....

20) Your download method (all that apply):

a) Direct download from respective sites
b) Torrent download (peer-to-peer)
c) Internet Download Manager
d) Others.....

21) You find what you consider to be key material from the e-resources available:

a) Very easily b) Easily c) To some extent
d) With difficulty e) Not at all

22) How many percent of e-resources (electronic form) do you get out of your need?

a) < 20% b) 20 – 40% c) 40 – 60% d) 60 – 80% e) 80% >

23) The inhibiting factors of e-resource usage are (Yes / No):

a) Inadequate opening hours

Yes No

b) Subscription to access e-resources

Yes No

c) Lack of proper guidance

Yes No

d) Insufficient e-resources

Yes No

e) Technical problems; hardware, software, electricity, etc.

Yes No

f) Lack of portability in contrast with original print material

Yes No

g) Lack of knowledge about tools and technology used

Yes No

h) Others.....

Yes No

24) The problems with using electronic resources and its retrieval are (Yes / No):

a) Not familiar with electronic resources

Yes No

b) Difficult to locate / find the electronic resources

Yes No

c) Not able to use the electronic resources properly

Yes No

d) Needed material is not available

Yes No

e) Needed material available but not sufficient

Yes No

f) It's difficult to read from the screen

Yes No

g) Technical problems (connectivity, electricity, hardware, software) Yes No

h) I don't feel any problem

Yes No

i) Others.....

Yes No

25) Are you satisfied with what your library offers you for e-resources regarding your needs?

a) Not at all

b) Poorly satisfied

c) Just satisfied

d) Fairly satisfied

e) Well satisfied

26) Do you recommend any online databases, site, or application for your library to subscribe so that your needs could be met? Your wish.

a)..... b).....

c)..... d).....

e)..... f).....

27) Anything this questionnaire failed to address that you strongly want to mention regarding e-resources? Please feel free to put your words:

********** THANK YOU **********