

# Use of the internet and electronic resources for medical science information in Bangladesh: A case study

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## **Abstract**

This article reports a survey on the use the Internet and electronic resources for medical science information of Sylhet Division, Bangladesh: a case study. Efforts are on to find the search requirements related to the use of the Internet information. Data were collected by using a questionnaire and follow-up interviews with Internet users from four medical colleges and hospitals of Sylhet Division, Bangladesh. Results show that all the respondents are using the Internet frequently because all faculties have provided connection to the Internet. It is revealed that the researchers and students of medical colleges are getting quality information through the Internet. Eighty eight % of respondents search for health science information through the Internet because the medical college's library has provided access to various databases and online journals for all students and staff. They use the Internet in different ways, such as accessing to online journals, downloading software or text, chatting, discussion, E-mail services and for finding related references. It was unveiled that the Internet services are normally used for research. The analysis reveals that 72.2% of Internet users always find useful information on the Internet. Forty-two % of respondents believed that quality information is available on the Internet.

**Keywords:** Internet usage, internet access, electronic resources, information searching, learning internet, bangladesh

## **Introduction**

Sources of information available via the Internet are increasing exponentially (Asemi, 2005). This comes with a steady increase in Internet use for education (Edwards and Bruce, 2002) and for research. The Internet is also making substantial inroads in patient care and dissemination of health care information. It is changing the way health sciences professionals obtain information. They use the Internet and electronic resources to do things like accessing medical records, providing remote patient care through telemedicine facilities, and accessing health care literature (Joos, *et. al.*, 2006). Physicians also depend more and more on the Internet. Medical product information, continuing education resources, online supply catalogs, and reference information have made Internet increasingly popular in medical sciences. The present study is an attempt to examine the role of the Internet and electronic resources in Medical colleges and hospitals of Sylhet, Bangladesh.

## **Literature Review**

The Internet is widely used in medicine and has made an impact in research, training, and patient care (Ajuwon, 2006). A review of literature reveals the use of Internet and electronic resources for patient care. Physicians use the Internet and electronic information resources to obtain answers to patient-specific questions and to keep abreast of developments in clinical medicine (Thompson, 1997; Koller *et. al.*, 2001).

Nicholas, *et. al.*, (2003) conducted a study in the UK to examine the use of the web for health information and advice. More than 1,300 people were surveyed. The study showed that 66% of the respondents accessed the Internet from home, 28% from work, and the remainder (6%) used a combination of both work and home.

Rehman and Ramzy (2004) conducted a study on the Internet use by health professionals at the health sciences centre (HSC) of Kuwait University. The study showed that 92.1% of the respondents accessed Internet from their office, while 73.2% also accessed it from home. Another 28.3% also used the HSC Library for accessing the Internet. The study indicated that 80.3% of the respondents used Internet daily, 15% used it once a week and 2.5% used it once a month. 88.2% of the respondents felt that the Internet provided better access to health sciences information, 77.2% indicated that through the Internet they had better professional contacts and 57.5% stated that with the use of Internet they were able to use different channels of communication for their patient care and research.

Asemi (2005) did a case study of Medical Sciences University of Isfahan (MUI), Iran. The results of the study showed that all the respondents used the Internet frequently because all faculties had an Internet connection. It was revealed that the researchers of the university were getting quality health information and patient care through the Internet. Moreover 55% of respondents searched for scientific health information through the Internet because the university library provided access to databases and online journals students and staff.

Ajuwon (2006) conducted a study of the physicians' use of the Internet for health information for

patient care at the University College Hospital (UCH) Ibadan, Nigeria. The findings revealed that 98% of the respondents had used the Internet. A majority (76%) accessed the Internet from cyber cafes. 90% reported that they had obtained information from the Internet for patient care; of this number, 76.2% had searched a database.

The literature shows that use of the Internet and electronic resources is increasing rapidly and are useful components for delivery of quality health sciences information for patient care and evidence-based medicine. In developing countries, the Internet is still only available to a minority of health professionals, and often it is not available at the point of care. Bangladesh is also a developing country. At present, Bangladesh has 80,54,190 Internet users, which comprises 0.75% of Asia's total Internet use population (1,076,681,059 users, which is 27.5% of the world's Internet users) (Internet World Stats, 2012). An earlier study conducted by the investigator found that the Internet had become a vital instrument for teaching, research, and learning in engineering colleges, universities of Sylhet, Bangladesh. The present study is focused on the use of the Internet and electronic resources in Medical colleges and hospitals of Sylhet, Bangladesh.

### **Scope of the Study**

The scope of study is limited to the Medical sciences colleges and hospitals affiliated to Shahjalal University of Science and Technology, Faculty of Medicine, Sylhet, and functioning within the territorial jurisdiction of Sylhet Division of Bangladesh. The study includes four Medical colleges and hospitals of Sylhet, Bangladesh (Appendix - I).

### **Objectives**

The objective of this study was to analyze the patterns of use of Internet and electronic resources for patient care, the Internet skills of the physicians, and problems faced by them while using the Internet and electronic resources. The study was conducted to find the satisfaction derived by the researchers with the Internet and electronic resources and to find an answer to the question: Can Internet and electronic resources replace print resources?

### **Methodology**

A questionnaire (comprising 25-items) was designed, and was pre-tested before using it for the survey. All medical sciences teachers and students were given the same questionnaire. Some respondents willingly filled out the questionnaire but some showed reluctance. The respondents were interviewed to fill in gaps.

The questionnaire was distributed to 100 respondents. Twenty respondents were selected randomly from each college (ten medical sciences teachers and ten medical sciences students) under study. Seventy two questionnaires (i.e. 20 from the teachers and 52 from the students) were received back. The overall response rate of the survey was 72%.

## Data Analysis and Findings

**Table 1. Demographic profile of respondents (N=72)**

Variables	Number	Percentage (%)
Age (in years)		
18-30	56	77.8
31 and above	16	22.2
Gender		
Male	40	55.6
Female	32	44.4
Status/ Designation		
Teachers	20	27.8
Students	52	72.2
Total	72	100

Table 1 depicts the demographic profile of the respondents. The majority of the respondents were ranged 18 to 30 age groups. There were more males (55.6%) than females (44.4%). The Medical science students constituted the majority (55.6%).

**Table 2. Number of respondents having own personal computer or laptop (N=72)**

Question Do you own a personal computer or laptop?	Number	Percentage (%)
Yes	53	73.6
No	19	26.4
Total	72	100

The study revealed that majority of the medical teachers and students (73.6%) under study have their own personal computers or laptops.

**Table 3. Experience of Internet use (N=72)**

Variables	Number	Percentage (%)
1-3 Years	29	40.3
3-5 Years	25	34.7
5 Years and above	18	25.0
Total	72	100

Table 3 depicts that on an average majority of the respondents have ranged 1 to 5 years experience of Internet use. Only 25% have more than 5 years of experience of Internet use.

**Table 4. Level of Internet and Computer Literacy (N=72)**

Variables	Number	Percentage (%)
Expert	07	09.7
Average	50	69.4
Below Average	15	20.9
Total	72	100

The respondents were asked to indicate their level of Internet and computer literacy. It is evident from Table 4 that majority of the respondents (69.4%) have an average level of Internet and computer literacy. 20.9% of the respondents reported that they have below average level of Internet and computer literacy. Only 9.7% admitted that they are expert in computer and Internet searching techniques.

**Table 5. Methods of learning Internet skills (N=72)**

Variables	Number	Percentage (%)
Trial and Error	38	52.8
Guidance from Colleagues and Friends	17	23.6
Training Courses Offered by College	07	09.7
External Courses	10	13.9
Total	72	100

Table 5 depicts that the most popular method of acquiring the necessary skills to use Internet is via trial and error method. A majority of the respondents (i.e. 52.8%) used this method to learn the Internet, followed by guidance from colleagues and friends with 23.6% responses. 9.7% of the respondents learnt the Internet through training offered by the college and 13.9% through external courses.

**Table 6. Place of Internet and electronic resources access (N=72)**

Variables	Number	Percentage (%)
Home	14	19.4
College or Work Place	47	65.3
Café	11	15.3
Total	72	100

Table 6 highlights the location from where the Internet and electronic resources are mostly accessed by the dental teachers and students. A majority of the respondents i.e. 65.3% access the Internet from

the college or work place, while 19.4% also access from home. Another 15.3% use cyber cafes for accessing the Internet and electronic resources.

**Table 7. Main reason for using the Internet and electronic resources (N=120)**

Variables	Number	Percentage (%)
Research	22	18.3
Health/ Medical Information	42	35.0
Patient Care	27	22.5
Others	29	24.2
Total	120	100

The respondents were asked to indicate the main reasons for using the Internet and electronic resources. Table 7 shows that 35% of the respondents use the Internet and electronic resources for perceiving the health/medical sciences information, followed by research with 22.5% responses. 22.5% for patient care and 24.2% for other reasons.

**Table 8. Use of Internet services and electronic resources (N=72)**

Variables	Number	Percentage (%)
Internet Services		
E-mail	72	100
WWW	72	100
FAQ	38	52.8
Chat	19	26.4
Internet Telephony	11	15.2
Blog	04	5.6
Electronic Resources		
E-journals	46	63.9
E-books	32	44.4
E-databases	24	33.3
DVD/ CD-ROMs	11	15.3
Other	5	7.0

Table 8 depicts the use of Internet services and electronic resources. E-mail has been chosen as the most popular Internet service and e-journals as the most popular electronic resource with 100% and 63.9% responses respectively. The use of Internet services in order of preference is WWW 100%, Frequently Asked Questions (FAQs) 52.8%, chat 26.4%, Internet telephony 15.2% and blog 5.6%. Similarly, the use of electronic resources in order of preference is e-books 44.4%, e-databases 33.3%, DVD/CD-ROMs 15.3% and other electronic resources 7.0%.

**Table 9. Problems faced by the users (N=120)**

Variables	Number	Percentage (%)
Difficulty in finding relevant information	28	23.3
Overload of information on the Internet	44	36.7
Electricity failure	32	26.7
Data authenticity	16	13.3
Total	120	100

Table 9 depicts the problems faced by the users in surfing. 36.7% of the respondents find overload of redundant information on the Internet. 23.3% find it difficult to get the relevant information from the Internet. 26.7% opinion that they face the problem of electricity failure in the medical colleges. 13.3% of the respondents also reported that data available on the Internet is not much authentic.

**Table 10. Users satisfaction with Internet services and electronic resources (N=72)**

Variables	Number	Percentage (%)
Fully	52	72.2
Partially	16	22.2
Least	04	5.6
Total	72	100

Table X shows that majority of the respondents i.e. 72.2% feel fully satisfied with Internet services and electronic resources. 22.2% of the respondents feel partially satisfied and only 5.6% feel least satisfied.

**Table 11. Do you think Internet and electronic resources can replace physical resources? (N=72)**

Variables	Number	Percentage (%)
Yes	14	19.4
No	58	80.6
Total	72	100

A majority of the respondents (80.6%) feel that the Internet and electronic resources cannot replace the physical resources (print resources), but only supplements the print resources. Only 19.4% of the respondents feel that Internet and electronic resources can replace print resources because they find it difficult to get the relevant information on print resources.

#### **Major findings of the survey are:**

1. A majority of the Medical teachers and students (73.6%) under study have their own personal computers or laptops.

2. The most popular method of acquiring the necessary skills to use Internet and electronic resources is via trial and error method. A majority of the respondents (i.e. 52.8%) used this method to learn the Internet, followed by guidance from colleagues and friends with 23.6% responses.
3. A majority of the respondents (65.3%) access the Internet from the college or workplace, while 19.4% also access from home.
4. 35% of the respondents use the Internet and electronic resources for finding health/medical sciences information, followed by patient care with 22.5% responses.
5. E-mail has been chosen as the most popular Internet service and e-journals as the most popular electronic resource, with 100% and 63.9% responses respectively.
6. 36.7% of the respondents find overload of redundant information on the Internet is the main difficulty in using the Internet. 23.3% find it difficult to get the relevant information from the Internet.
7. A majority of the respondents (72.2%) feel fully satisfied with Internet services and electronic resources.
8. A majority of the respondents (80.6%) feel that the Internet and electronic resources cannot replace the physical resources (print resources) that it only supplements the print resources.

## **Recommendations**

Based on the findings of the study, the following suggestions are put forward to improve the use of the Internet and electronic resources among the medical physicians in all the medical colleges and hospitals of Sylhet Division of Bangladesh:

1. The Internet and allied technologies should be included in the curriculum of medical sciences.
2. There should be complete campus-wide networking with the Internet browsing facility connecting the medical teachers' rooms as well as hostels.
3. Libraries of medical colleges should subscribe more e-journals and e-databases.
4. Some orientation training programmes should be organized by the colleges at regular intervals so that the maximum users can improve their excellence or proficiency in the use of the Internet for academic purposes.
5. All the academic news should be provided at the college website and it should be regularly updated.
6. Information regarding the popular and the latest websites with their addresses should be displayed on the notice board in the computer lab.
7. The qualified IT staff should be appointed to provide the expert guidance to users about e-resources and Internet.



## Conclusion

The Internet as medium of communication is useful in medicine, and has become an important means of delivering medical care. The use of the Internet is an evolving phenomenon at this stage. Its use in the medical colleges and hospitals under study is still in a state of infancy or early maturation. It can be very well visualized a situation when all users will have achieved near perfection in the use of and full dependency on the Internet for their information needs. So still there is a vast scope of future research in different types of users' behavior and comparison of users' behavior towards the Internet.

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**Appendix I. List of Medical Colleges and Hospitals of Sylhet, Bangladesh**

<b>Sr. No.</b>	<b>Medical Colleges and Hospitals</b>
1.	Sylhet M A G Osmani Medical College and Hospital, Sylhet
2.	Jalalabad Ragib Rabeya Medical College and Hospital, Sylhet
3.	Sylhet Women's Medical College and Hospital, Sylhet
4.	North East Medical College and Hospital, Sylhet