DESIDOC Journal of Library & Information Technology, Vol. 30, No. 3, May 2010, pp. 7-12

Perceptions of Health Professionals Regarding Use and Provision of LIS through Mobile Technologies

Adarsh Bala and B.M. Gupta*

Central Library, Government Medical College and Hospital
Sector 32, Chandigarh-160 030
E-mail: adarshsanjeev@yahoo.co.in

**Emertius Scientist*
National Institute of Science, Technology & Development Studies, New Delhi-110 012
E-mail: bmgupta1@gmail.com

ABSTRACT

This paper attempts to study the perceptions, knowledge and awareness among the health professionals (doctors and MBBS students only) working in government hospitals of Chandigarh regarding the use of mobile communication technologies and devices for dissemination of various library and information services on the basis of a survey. The survey finds out the commonly used mobile devices among health professionals, their purpose of use and the methods and type of communication channel used in mobile devices for exchanging information among the doctors and students. The paper also seeks their opinion about library and information services, if provided through mobile technologies, and kinds of services, which could be provided, their feasibility, benefits and drawbacks along with the awareness among the users about such services. The findings of this survey show the positive attitude of the medical respondents towards the provision of library and information services on mobile devices.

Keywords: M-information, m-library services, medical libraries, mobile communication, mobile devices

1. INTRODUCTION

Mobile communications technology, over recent years, has become an integral part of everyday life with individuals viewing this method of communication as a necessity rather than a luxury. The impact of mobile technologies can be seen in all aspects of lives and in many sectors like business, education, banking, communication, health, libraries, etc. Libraries and information centres are providing various services through these technologies to meet the information needs of its users worldwide particularly in the advanced countries. The continued trend of the convergence of technological devices and the advent of third generation phones have provided increased speed of data transfer and further opportunities for both librarians and library users to access and exchange information whilst on the move.

At present many libraries in western countries are providing various information services and making the access to reference sources available on the mobile devices for their users. In the health sciences field, library of the University of Alberta offers a vast array of health science related reference services and access to other library sources to its users on mobile devices.[1] Some university libraries have begun to make electronic versions of their library catalogues available for access on mobile devices. The North Carolina State University (NCSU) MobiLIB catalogue interface, for example, is optimised for mobile devices.[2] Similarly the website developed at Simmons College Library provides links to the libraries particularly in medicine and health sciences, and their library source contents and different type of library services for mobile devices.[3]

2. REVIEW OF LITERATURE

Walton, Childs and Blenkinsopp explored the potential of mobile technologies for accessing learning resources[4] among health students. Karim, Darus and Hussin explored the utilisation of mobile phone services in the educational environment and the perception of

Received on 19 November 2009

university students in Malaysia on mobile phone uses in library and information services.[5] Lippincott explored the implications of mobile technologies for academic libraries users.[6] Ryerson University library has done cell phone survey to make informed decisions about the provision of library services via mobile devices.[7] University of Cambridge in a project, based on the online survey of the users, identified and explored the ways that libraries could develop the library services based on mobile devices and supports the mobile information needs of the people.[8]

3. OBJECTIVES

The objectives of the study are: (i) to identify the commonly used mobile devices, purpose of their use and type of communication channel used; (ii) to study the point of view of the users about the feasibility of providing mobile library and information services; (iii) to study the opinion of users about the benefits and drawbacks of providing library services using mobile devices; (iv) to make the assessment of awareness among doctors about the availability of such library services; and (v) to compare the perceptions of doctors and medical students about the mobile services.

4. METHODOLOGY AND SCOPE OF STUDY

The study is based on the survey conducted through a structured close questionnaire distributed among the 200 medical professionals including 160 doctors and 40 MBBS students of three government hospitals in Chandigarh, i.e., Post Graduate Institute of Medical Education and Research (PGIMER), Govt Medical College and Hospital (GMCH), and Govt Multi Specialty Hospital (GMSH). Of these 200 questionnaires, 186 (93 per cent) questionnaires were received back including 146 (91.25 per cent) from doctors and 40 (100 per cent) from students. The respondents used more than one mobile device for various purposes. So, if we count the total responses, under different mobile devices, the result will be more than 186 responses. Similarly, the response under different purposes, types of information exchanged and communication channels used will be more than the cumulative responses.

The analysis of doctors' perceptions and students' perceptions has been done separately to make the comparison between them. The term health professionals includes a number of categories of staff like nurses, paramedical staff, counsellors, medical social workers, clinical psychologists, play therapist, students, doctors, etc. But the scope of this study is limited to the MBBS students and doctors only (including Faculty, Senior Residents, Postgraduate Junior Residents, Junior Residents, Demonstrators, and Senior Medical Officers). Further, this study was limited to the three government hospitals in Chandigarh.

5. ANALYSIS

5.1 Use of Mobile Device

The analysis of the responses shows that all the respondents including 146 doctors and 40 MBBS students were using one or more than one mobile devices; the commonly used devices were mobile phones, laptops, and pen drives (Table 1). Among the type of mobile devices, mobile phones were the most commonly used device among doctors and students followed by laptops, pen drives, i-pods, etc. E-book reader was the hardly used device.

5.2 Purpose of Using Mobile Devices

Table 2 shows that making phone calls was the most common purpose among doctors and students. This was followed by transferring data and Internet browsing. Listening music was the least common purpose among doctors in contrast to the students. Similarly, more

Table 1. Use of mobile devices among medical respondents

Mobile device	Doctors' responses		MBBS students' responses	
	Number of responses	% share of responses	Number of responses	% share of responses
Mobile phone	128	87.67	38	95
Laptop	105	71.92	13	32.5
Pen drive	87	59.59	13	32.5
I-pod	11	7.53	8	20
Smart phone	5	3.42	2	5
PDA	5	3.42	1	2.5
E-book reader	1	0.68	0	0

Table 2. Respondents current purpose of using mobile devices

Purpose	Doctors' responses		MBBS students' responses	
	Number of responses	% share of responses	Number of responses	% share of responses
Phone calls	125	85.62	38	95.00
Transferring data	86	58.90	25	62.50
Educational	85	58.22	8	20.00
Reading e-book, etc.	75	51.37	7	17.50
Internet browsing	75	51.37	22	55.00
Music	57	39.04	28	70.00
Others	13	8.90	7	17.50

doctors used mobile devices for education purposes, reading e-books, and journal articles. The last two being the least common purposes among students.

5.3 Type of Information Exchanged

Figure 1 shows that messages were the information exchanged less among doctors than students. On comparing the dominant responses of doctors and students, it was found that doctors were using mobile devices for exchanging educational information and files as against the students who exchanged songs, jokes, and photos.

5.4 Use of Mobile Communication Channel

Figure 2 shows that e-mail was the most common channel of communication among doctors in contrast to short message service (SMS), which was widely used by the students. URL and Multimedia Messaging Service (MMS) were the least favoured communication channels among the total respondents. SMS and data files were fairly used communication channels among doctors for exchanging information.

5.5 Mobile Library and Information Services

Table 3 shows the respondent's views on providing library information services on mobile devices and its types. With regard to type of information services that can be provided through mobile devices, majority of doctors showed their preference for List of New Arrivals, followed by E-journal Article, Renewal of Books, Reservation of Books, Information of Library Timings, Library News and so on. Among students, there was marked preference for List of New Arrivals, followed by Library News, Renewal of Book, Information of Library Timings and Web Clippings, and so on. Text Reference Service is less preferred by the doctors than the students.

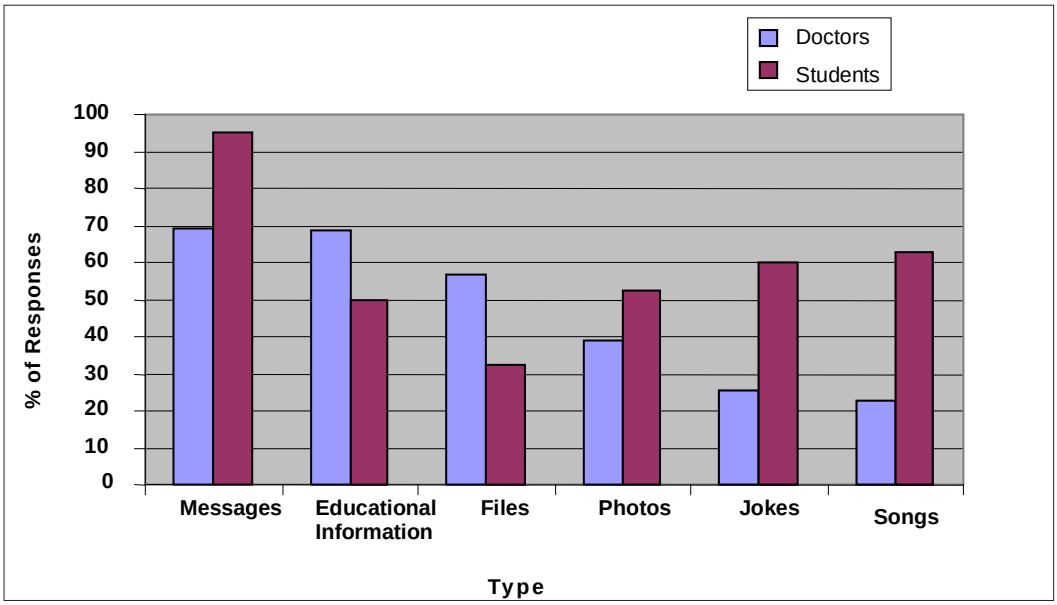
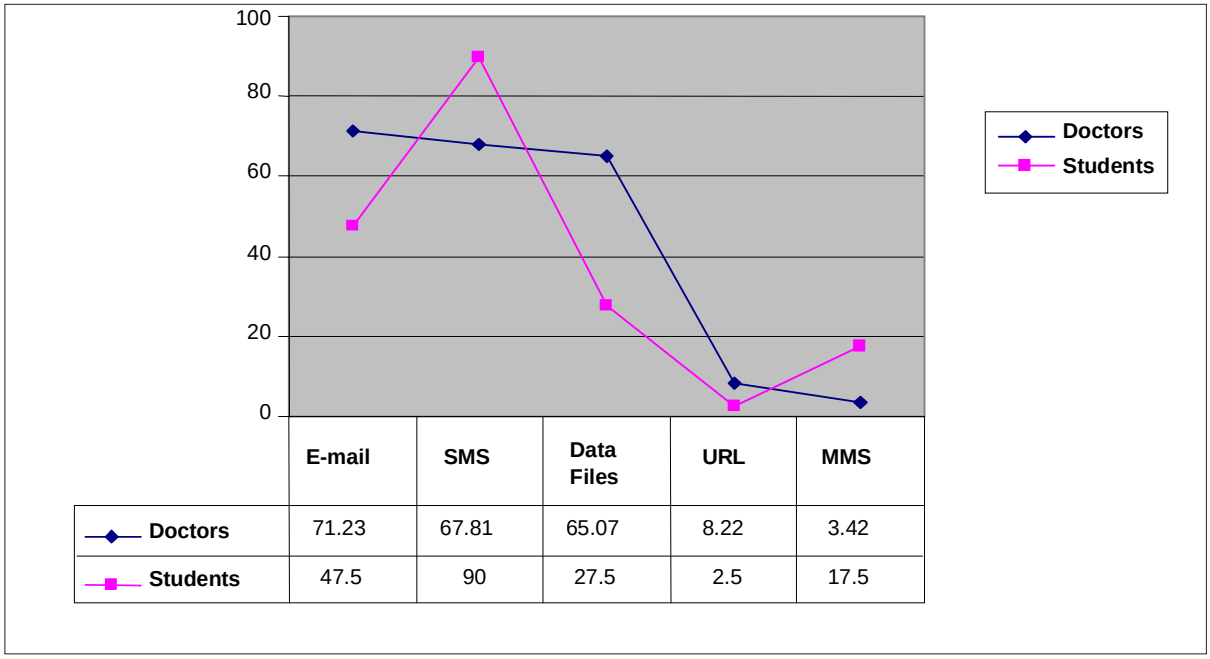


Figure 1. Type of information exchanged by the health professionals.



	E-mail	SMS	Data Files	URL	MMS
Doctors	71.23	67.81	65.07	8.22	3.42
Students	47.5	90	27.5	2.5	17.5

Figure 2. Mobile communication channels used by the health professionals.

Table 3. Opinion of respondents for various types of library and information services on mobile devices

Type	Doctors		MBBS students	
	Number of responses	% share of responses	Number of responses	% share of responses
List of new arrivals	122	83.56	23	57.50
E-journal article	114	78.08	15	37.50
Book renewal	99	67.81	18	45.00
Book reservation	88	60.27	15	37.50
Information of lib. timings	78	53.42	17	42.50
Library news	74	50.68	20	50.00
Table of contents	64	43.84	14	35.00
Information on overdue library material	59	40.41	14	35.00
Text reference service	51	34.93	11	27.50
Web clippings	37	25.34	17	42.50

5.6 Awareness about Mobile Library and Information Services and Sources

Table 4 shows that only 50.68 per cent of doctors and 37.50 per cent of students were aware that such kinds of library and information services are being provided by many libraries, particularly in advanced countries of the world. Fifty two per cent of doctors and 57.50 per cent of students showed awareness about the availability of m-editions of reference sources like encyclopedia and dictionaries. With regard to the availability of Pubmed on hand-held wireless devices, 59.59 per cent doctors and 85 per cent students were not aware that Pubmed is providing these information services.

5.7 Respondents' Attitude Towards Benefits and Drawbacks of Mobile Library Information Services

Table 5 makes the assessment of all respondents regarding the benefits of library and information services on mobile devices. In the opinion of doctors, it is an

Table 4. Percentage of responses regarding awareness of already existing mobile services and sources

Type	Doctors		MBBS students	
	Number of responses	% share of responses	Number of responses	% share of responses
Other countries	50.68	49.32	37.50	62.50
Reference sources	52.05	47.26	57.50	42.50
Pubmed on handheld devices	39.73	59.59	15.00	85.00
PICO	2.74		2.50	
Disease assoc.	2.05		0.00	
Ask med	4.79		7.50	
Not using	27.40		5.00	

Table 5. Opinion of respondents regarding the benefits (in percentage)

Benefit\Response	Doctors					MBBS students				
	S.A	A	N.C	D.A	S.D.A	S.A	A	N.C	D.A	S.D.A
An effective method of providing library services	34.93	60.96	2.05	0.68	0.00	40.00	52.50	5.00	0.00	2.50
More flexible method of disseminating information at anytime any where	39.04	56.85	2.74	0.00	0.00	27.50	52.50	17.50	0.00	2.50
Improve the communication between library users and library staff	30.82	60.96	5.48	0.00	0.00	20.00	42.50	30.00	5.00	2.50
Quicker method of getting feedback in library service	32.88	56.85	6.16	0.68	0.00	27.50	60.00	5.00	5.00	2.50
Getting the library users updated and saves their time	43.84	48.63	0.00	0.68	0.00	25.00	60.00	10.00	2.50	2.50
Bridge the gap between information and users	32.19	60.96	5.48	0.00	0.00	30.00	65.00	2.50	0.00	2.50
Encourage reading habits among library users	19.18	51.37	21.23	5.48	0.68	27.50	35.00	20.00	15.00	2.50
Making library more accessible	36.30	55.48	4.11	2.74	0.00	37.50	57.50	0.00	2.50	2.50

A = Agree; S.A = Strongly agree; S.D.A = Strongly disagree; D.A. = Disagree; N.C.= Not Clear

Effective Method of providing library services, Improving the Communication between library users and library staff, in Bridging the Gap between information and users is Flexible Method and so on. About 43.84 per cent of respondents strongly agreed with the benefit of Users Updates as it saved their time. Encouraging Reading Habits among library users was not clear among 21.23 per cent doctors, and 5.48 per cent respondents did not agree with this.

Majority of students agreed with the benefit of Bridging the Gap between the information and users, followed by Quicker Method of getting feed back, and the Library Users Updates. The benefit of Improving the Communication between library users and library staff was Not Clear among 30 per cent students. Similarly 20 per cent and 17.50 per cent students Not Clear about Encouraging Reading Habits and More Flexible Method of dissemination information, respectively.

Table 6 shows the respondents' opinion regarding the drawbacks in getting mobile library information services; 44.52 per cent of doctors and 60 per cent of students agreed that highest technical know-how was required while 28.08 per cent doctors and 7.50 per cent students were disagreed with this draw back. Similarly majority of respondents agreed that there are expensed involved in the purchase of mobile devices. Long use of mobile phone cause health problems was not clear among the respondents. Majority also agreed that accessing information on small screen of few mobile devices is problematic.

Table 6. Opinion of respondents regarding drawbacks (in percentage)

Drawback/Responses	Doctors					MBBS students				
	S.A	A	N.C	D.A	S.D.A	S.A	A	N.C	D.A	S.D.A
Highest technical know-how is required	13.70	44.52	8.90	28.08	2.74	25.00	60.00	5.00	7.50	2.50
Expenses involved in the purchase of mobile devices	15.75	51.37	8.22	22.60	0.68	10.00	60.00	10.00	17.50	2.50
Long use of mobile phone cause health problems	13.01	37.67	26.03	20.55	1.37	15.00	47.50	20.00	10.00	7.50
Accessing information on small screen of few mobile devices is problematic	19.86	56.16	5.48	16.44	1.37	15.00	47.50	10.00	17.50	10.00

A = Agree; S.A. = Strongly agree; S.D.A = Strongly disagree; D.A. = disagree; N.C.= Not clear

6. CONCLUSION

From the analysis of data the following inferences are made regarding the perception of doctors and students about mobile library information services:

- Doctors were using mobile devices mainly for making phone calls, transferring data and for education purposes in contrast to the students for whom the main purpose was mainly making phone calls and listening the music.
- Messages, songs and jokes were the most common types of information exchanged among students, while doctors exchanged messages and educational information. E-mail, SMS, and data files were the preferable communication channels among doctors while SMS was the only communication channel used by the students.
- In the opinion of respondents, 69.18 per cent doctors and 50 per cent students agreed that LIS services can be provided through mobile devices. More than 50 per cent doctors thought that library and information services like new arrivals, e-journal articles, book renewal, book reservation, library timings, and library news can be provided on mobile devices.
- Only 50.68 per cent doctors and 37.50 per cent students were aware about the mobile library information services provided by libraries in other countries and more than 50 per cent respondents were aware about mobile editions of reference sources. Awareness about availability of Pubmed on m-devices was very less among the respondents.
- More than 50 per cent respondents agreed with the benefits of mobile library information services.
- More than 50 per cent respondents agreed with the expenses involved and problems of accessing information on small screen.

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