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Information needs and seeking behavior of Pakistani Physicians

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Abstract

This paper aims to investigate the information need and seeking behaviour of physicians working in a well-reputed Lahore based hospital. Identification of medical professionals' existing problems related to information searching and retrieval from the hospital library was another main objective of this study. A quantitative research approach is utilized to conduct this study and a cross-sectional survey research method is used to collect data on a self-reporting questionnaire. A total 226 medical doctors working in a Lahore based hospital participated in the survey. The findings of the study revealed that majority of the participants accessed the library information resources to keep themselves up-to-date with the professional developments and for the purpose of their continuing education. Moreover, majority of the respondents preferred print sources to fulfil their information needs. Problems, as well as suggestions are also presented in the study. This is the first study in nature which is conducted on medical doctors of a well- reputed Lahore based hospital to know their information needs, seeking behaviour and problems. Findings may be useful for the organizations offering medical services and library administration to better understand and meet the information need, seeking behaviour and problems of physicians which, as a result, might help physicians offer state-of-the-art services to patients and earn a good repute for their organization.

Keywords: Clinical information; information needs; Seeking behaviour; Library's usage; Doctors' problems; Satisfaction.

Introduction

Information plays a vital role in the advancement of knowledge, solving problems and decision making (Kumar *et al.,* 2011). Information of doctors also affects the patients in hospitals (Adamson *et al.,* 2018). Staying up-to-date with the latest information is also very

important for the doctors as patient data is inadequate to make clinical decisions and it is highly suggested that doctors should update their existing knowledge and medical practices (González-González *et al.,* 2007). Therefore, Understanding of information needs and seeking behaviour of doctors is very important (Lappa, 2005). It is also of value to know the problems in information's access as medical professioanls face hindrances in accessing the contents to meet their information needs (Heale *et al.,* 2017). Majority of the doctors faced problem such as slow speed of internet, lack of awareness and time to access the needed information. This scenario sheds light on the need of health professioanls' training to equip them with necessary skills for efficient access of the information to meet their needs (Oriogu *et al.,* 2017). Also, availability of information, use of resources and elimination of barriers such as lack of time play a keyrole in information satisfaction of doctors (Kostagiolas *et al.,* 2018).

Surveyed hospital is one of the premier medical organizations of Pakistan. Well-reputed doctors are serving at this institution. In the current information revolutionary era, medical professionals need the latest research contents at the earliest opportunity to perform their professional obligations. To meet this, the institution has developed a library. The purpose of the library is to facilitate the medical professionals in acquiring their needed stuff timely. From this perspective, it is very important to know the behaviour of information seekers for efficient delivery of contents. This hospital is also one of the main government hospitals of Lahore, Pakistan. It is equipped with various important operation theatres (Nimra *et al.,* 2015) and an established library.

Worldwide, plenty of research on doctors' information needs and seeking behaviour has been conducted (Bauchner *et al.,* 2001; Clarke *et al.,* 2013; Dawes and Sampson, 2003; Demergazzi *et al.,* 2020; Zhou *et al.,* 2020). Liewise, few studies in the area have also been conducted by Pakistani researchers in the past (Anwar, 2007; Azhar, 2010; Majid *et al.,* 2000;

Midrarullah and Khan, 2007; Naeem *et al.,* 2013). However, there is a dearth of local literature on information need and seeking behaviour of medical doctors of Pakistan. Therefore, this study is first in nature which is intended to investigate the information need, seeking behaviour and problems of medical doctors of a well-renowned government hospital.

Research Objectives

Following are the research objectives of this study:

1. To know the information needs and seeking behaviour of medical doctors working at a hospital in Lahore.

2. To investigate the usage of library information resources by medical doctors working at a Lahore based hospital.

3. To identify the problems of doctors regarding searching and retrieval of information during their medical practices at a hospital in Lahore.

Literature Review

Information is defined as data, facts, imaginative work of mind which are communicated formally and informally in any format and people need it to keep themselves abreast with the latest developments (Chen and Hernon, 1982; Naeem *et al.,* 2013). Majid *et al.* (2000) stated that information is one of the key resources which play a vital role in the development of any nation. Elayyan (1988) categorized information into two main types formal or printed information sources such as medical libraries and informal or non- printed information sources such as contact with colleagues, professional conferences, workshops, seminars, symposiums, training, media talks on professional issues, and continuous professional development courses offered by different schools and bodies.

Devadason and Lingam (1997) discussed that information need is an important term in information seeking behaviour. Information need means that there is an insufficiency in someone's knowledge and he/she wants to satisfy the cavity of his/her information or

knowledge. Wilson (2000) defined information-seeking behaviour as "seeking for information as a consequence of a need to satisfy some goal" (p. 49). Information seeking behaviour is a broader term. It also means that user seek information first, evaluate it and then use it to fulfill his/her information needs (Kuhlthau, 2004).

Health professionals need information (Bootsma, 2020) argued that doctors need information to answer frequently asked questions by the patients and to keep themselves up-to-date. Kuhlthau (2004) stated that a number of factors may determine information seeking behaviour of individual or group. However, it is very important to know about the purpose for which information is needed. Naeem *et al.* (2013) concluded that patient management, staying up-to-date, continuing medical education (CME) and evidence for policies and procedures demand the need for information for the doctors. Researchers found that doctors need a wide range of medical information sources for patient care, clinical decision making and improved healthcare systems.

Ocheibi and Buba (2003) concluded that doctors normally used journals' articles, books, handbooks, reviews, conference proceedings, catalogues, audiovisual media, databases, and email alerts, unpublished material such as reports and theses, manuscripts, unpublished conference proceedings, and magazines as well as meetings, seminars, private correspondence etc. to meet their information needs. However, availability of the digital contents has influenced the behaviors towards information seeking (Arshad and Ameen, 2018) and Bennett *et al.* (2006) found that doctors consult colleagues and computers technology to answer their clinical queries. doctors ask colleagues when they need any type of clinical help. Davies (2007) conducted a study to review the literature on information seeking behaviour of doctors from the past 10 years (1996-2006).

Azhar (2010), Callen *et al.* (2008), Coumou and Meijman (2006) and Davies (2007), found that doctors preferred print resources and their colleagues to seek their required

information. Khan *et al.* (2008) carried out a survey to explore the information-seeking behaviour of clinicians and found that clinicians depend on textbooks to fulfil information needs. Bigdeli (2012) and Nylenna and Aasland (2000) indicated that meetings, professional courses, workshops, conferences and congresses were very important for doctors to enhance their continuing medical education and to keep themselves up to date. Bryant (2004), Doney *et al.* (2005) concluded that clinicians visit libraries regularly to keep themselves up-to-date and knowledgeable in their respective field of speciality. Beaver and Booth (2007) concluded that doctors feel comfortable to talk with patients to know their medical needs and recommend proper treatment. Margalit *et al.* (2006) concluded that there is a necessary relationship between the use of an electronic medical record of patients and doctor-patient communication. Jensen and Aanestad (2006) highlighted that the term EPR (Electronic Patient Record) is considered as significant technology. It is very useful for diagnosing, treatment and long-term care of the patient.

Elayyan (1988) concluded that doctors also choose internet and online database to fulfill their information needs. Owen and Fang (2003) found that 82% of the doctors valued MEDLINE as a useful resource. Ajuwon (2006) concluded that 90% of doctors of his study browse the internet to meet their information needs regarding patient care and 76% of the respondents searched online databases such as MEDLINE and Pub Med. Midrarullah and Khan (2007) concluded that the internet was the key for medical practitioners. Ferguson (1989) concluded that doctors conversed in detail with pharmaceutical agents to get information about new products regarding medicines.

Verhoeven *et al.* (1995) found that doctors used those sources mostly which were easily accessible, physically good and more functional in use. It was also found that doctors chose clinical information considering both physical condition and quality of information. Bennett*et al.* (2004) found that doctors preferred relevant, speedy, easily retrievable and most

authentic information while searching on the internet or online databases because they intended their learning meaningful and goal-oriented.

Identification of various hurdles in searching and getting information from sources and channels is also important in information seeking behaviour. (Majid *et al.,* 2000). Information searching skills were very important for doctors to access the needed information (Feather, 2006). Grefsheim and Rankin (2007); Haga *et al.* 2019; Kostagiolas *et al.* (2018); Nail-Chiwetalu and Ratner (2007); and Tan *et al.* (2006) concluded that physicians highlighted lack of time, lack of awarenessless technological skills, and deficiency in information literacy skills as barriers in accessing the information and meeting their information needs. Bennett *et al.* (2006) highlighted the insufficient or too much information, difficulties in downloading the documents, slow speed of internet and in compatibility of software as the problems being faced by the doctors during seeking the information. Tan *et al.* (2006) concluded that outdated computers and printers, the slow speed of internet and unavailability of the required information were the problems for doctors to meet their information needs.

Methodology

Somekh and Lewin (2005) maintained that population is the whole people or phenomena which are being studied. All doctors (post-graduate residents, medical officer, senior medical officer, registrar, senior registrar, assistant professor, associate professor, and professor) were the target population of this study. Marshall (1996) stated that convenience sampling is a very popular technique for data collection. Stephanie (2015) stated that convenience sampling is best where the list of the population is not available. Thus, the convenience sampling technique was selected for this study due to the non-availability of the list of participants of the study. The sample size was 272 out of 933 medical doctors. The online   statistical   software   of   creative   research   system

(http://www.surveysystem.com/sscalc.htm) was used to determine the sample size considering 5% confidence interval and a 95% confidence level.

Bryman (2012) stated that the questionnaire is one of the popular methods of data collection especially for studies about human topics (p. 542). Neuman (2005) mentioned that different kinds of data can be collected by questionnaires such as factual information of the respondents and their views, attitudes and opinions. Therefore, researchers used the questionnaire to collect the data for this study. Cronbach's Alpha (CA) was used to measure the internal consistency of items of the instrument and value was above the reasonable value of 0.75. The questionnaires were distributed personally (face-to-face) to the available medical doctors in different wards and departments of the Hospital. To ensure maximum responses, the researcher visited the various departments of the hospital and, as a result, response rate was 83%.

The collected data was encoded and processed using the Statistical Package for Social Sciences (SPSS 21) to produce relevant results in the form of descriptive statistics such as frequencies and percentages of various variables.

Results

Gender and Education Level of the respondents

Table I shows that the male respondents were more 69%) in numbers than female respondents (31%) who participated in this study. Results of Table I also highlight the education level of respondents. The majority (66%) of the participants possessed MBBS qualification. Detailed results are presented in Table I.

Table I. Frequency distribution of gender and education level of the respondents

Variable		Frequency	Percent
Gender	Male	155	69
	Female	71	31
Education	MBBS	149	66
	FCPS	69	31
	MCPS	8	3

Reasons of Doctors' Information needs

It was enquired from the respondents about the reasons for the needfor information. Results showed that 82% of the respondents needed information to keep themselves up-to-date and 76% of the participants needed it for their continuing education. A major portion (74%) of the study's respondents mentioned that they need information to improve their knowledge. Results presented in Table II showed the details about the main reasons for the needof information for doctors.

Table II

Frequency distribution of respondents' reasons for information need

Reasons	Number	Percent
Keeping up-to-date	186	82
Continuing education	171	76
Improving your knowledge	167	74
Answering patient questions	108	48
Sharing knowledge with your colleagues	104	46
Answering colleagues' questions	92	41
Writing reports/research paper (for publication)	60	27
Writing reports/research paper (not for publication)	59	26

Library usage frequency of doctors

The study also investigated regarding the frequency of doctors' visit to the library. Results of Table III show that most (37%) of the respondents used the library rarely and only (25%) respondents used the library on daily basis. Details of the results are presented in Table III.

Table III

Frequency Distribution of Respondents' Library Usage

Library use	Frequency	Percent
Rarely	83	37
Weekly	59	26
Daily	56	25
Monthly	16	7
Fortnightly	12	5

Doctors' seeking of information resources in the hospital library

The survey study also investigated about the nature of resources required for information seeking. Results of above Table IV show that majority 62%) of the respondents sought information from the books of the hospital library whereas a reasonable strength (44%) of the respondents sought information from the internet provided in the library. Detailed results are presented in Table IV.

Table IV

Frequency distribution of respondents' seeking of information resources

Resources	Number	Percent
Books	139	62
Internet	100	44
Audiovisual	35	16
Conferences papers	29	13
Medical databases (e.g. PubMed, Medline, Science Direct, EBSCOhost)	26	12
Serials (e.g. journals, periodicals, magazines & newspapers)	14	6

Use of searching tools for information retrieval

Respondents were asked to share about the tool they use for seeking the information. Results of Table V show that library catalogue was most (77 or 34%) preferred source for respondents for information retrieval as compared to other sources of information retrieval and "Ask Librarians" was the second preferred sources of the respondents. Detailed results are presented in Table V.

Table V

Frequency distribution of respondents' use of searching tools

Searching Tools	Number	Percent
Library catalogue	77	34
Help from Librarians	75	33
Bibliographies produced by library staff	56	25
Audiovisual	39	17
Indexing journals	29	13
Abstracting journals	14	6

Problems in accessing the library resources

Respondents were asked to share about the problems they faced while seeking information.Results of Table VI show that half (n =113) of the respondents responded that library resources were inadequate for the users. A reasonable number (44%) of the respondents mentioned the long distance of the library from their departments as a problem. A handsome number (36%) of participants considered the lack of information technology tools as a problem. Other problems mentioned by the respondents include lack of time, poor searching skills, the high cost of journals, too much information on the internet etc. Detailed results are presented in Table VI.

Table VI

Frequency distribution of respondents' problems

Problems	Number	Percent
In-adequate resources in Hospital Library	113	50
Library location is very far from their department	100	44
Non-availability of information technology tools	82	36
Lack of time	57	25
Lack of information searching skills	56	24
The high cost of subscription of the electronic journal	55	24
Too much information on the internet	51	22

Satisfaction with services and resources of hospital library

Independent sample t-test was employed to know the differences of opinion between male and female regarding their satisfaction from resources and services of the library and hospital. Results presented in Table VII revealed that there was no significant difference between the opinions of male and female about their satisfaction from the services, resources, and other activities in getting the needed information. However, Table VII shows that mean of male respondents is slightly greater than the female participants against all the statements presented in Table VII. Male respondents seem more satisfied than their female counterparts regarding the resources and services of the library and hospital. Responses of the male respondents were close to "satisfied" and above "neutral" against the statements "Services provided by hospital library", "Services provided by medical record management", "Hospital

information systems", "Attending conferences" and "Accessibility of the internet". Similarly, responses of male respondents highlighted that they were "satisfied" from "Daily/weekly/monthly meeting and seminars" related activities. However, responses of the female participants of the study were close to "neutral" against the first two statements of Table VII and close to "satisfied" against statements "Accessibility of the internet" , "Daily/weekly/monthly meeting and seminars", "Hospital information systems" and "Attending conferences". Detailed results are presented in Table VII.

Table VII

Results of t-test regarding respondents' satisfaction level

		Mean		T	Sig.
Sr.	Statement	Male	Female		
1	Services provided by hospital library	2.50	2.21	1.85	.066
2	Services provided by medical record management	2.56	2.34	1.62	.107
3	Accessibility of the internet	2.91	2.85	.51	.610
4	Daily/weekly/monthly meeting and seminars	3.01	2.87	.78	.299
5	Hospital information systems	2.86	2.85	1.04	.889
6	Attending conferences	2.83	2.69	.90	.367

Note: 0= Not Applicable, 1 = Dissatisfied, 2 = Neutral, 3 = Satisfied * Significant at P <0.05

Suggestions

Respondents were enquired to suggest the ways to improve the library services and resources. Results are presented in Table VIII.

Table VIII

Suggestions of respondents to improve library resources and services

Suggestions	Number
Digitize all information services	107
Improve communication with other international hospitals and healthcare centres	102
Provide better-qualified staff in the hospital library	95
Train doctors on the use of the Internet and Information Technology	75

The above results show that most (47%) of the respondents suggested that digitization should be implemented and (42%) highlighted the need forbetter-qualified staff in the library. A reasonable number (33%) of the respondents pointed the need for training of doctors regarding the use of internet and other technological tools.

Discussion

The results showed that the majority of the doctors need information to keep themselves up to date with the current information as well as for the continuity of their education. Another major reason was the need to improve their knowledge. These results are similar to the results of previous research (Ocheibi and Buba, 2003) which concluded that doctors need information to stay up to date with current information as well as to improve their professional knowledge. It is also evident from the above results that doctors need information to manage the questions of their patients. The results of previous research studies

(Bellman *et al.,*2005; Bryant, 2004; Gonzalez-Gonzalez *et al.,*2007; Lappa, 2005) also found similar findings. Findings of the current study also found that doctors need information to answer their colleague's question which is also similar with the result of the study (Gavino e*t al.,* 2013) which concluded that physicians considered their colleagues as a primary source of information.

It was also found that most of the participants visited library rarely and very limited users visited library on daily bases. These results support the previous studies (Anyaoku, 2015; Marshall, 1996) which found similar results about the visit of physicians in the library. It was also found that majority of the users consulted books and internet to meet their information needs and previous literature (Ajuwon, 2006; Bennett *et al.,* 2004; Davies, 2007; Doney *et al.,* 2005; Jensen and Aanestad, 2006; Khudair and Cook, 2008; Naeem *et al.,* 2013; Norbert and Lwoga, 2013; Tan *et al.,* 2006) found the similar results. It was found that participants of the study preferred library catalogue as first choice and "Ask Librarian" as second choice for information seeking. Findings of the current study are consistent with the previous studies (Adedibu, 2008; Anyaoku, 2015) which also found similar results.

Respondents highlighted lack of resources, searching skills, time, information technology tools, long distance to access library, high cost of journals and too much information on internet as problems in accessing the resources.These results show in accordance with research studies (Ahmed and Yousif, 2007; Anyaoku, 2015; Clarke *et al.,* 2013; Naeem *et al.,* 2013; Norbert and Lwoga, 2013) which highlighted the similar problems faced by doctors during seeking of the information. Significant difference between male and female' opinions regarding services and resources of the library was also not found in the current study. These results are consistent with the previous study (Rathnakara *et al.,* 2011) which concluded that there was no statistically significant difference between the male and female participants regarding the use of the library.It was also found that respondents

suggested the need of digitization, qualified staff and training of library users. These results are consistent with the earlier studies (Davies, 2007; Kritz *et al.,* 2013; Naeem and Bhatti, 2016) which highlighted the need of similar measures.

Conclusion

Considering the results of the study, it may be concluded that majority of the respondents of the study need the information to keep themselves up to date and continue their professional education to improve their professional knowledge which is a good sign regarding purposes of library resources' usage.

It is also evident from the results of the study that use of the library was very low which is an alarming situation both for library administration and institution. Majority of the respondents accessed library catalogue to retrieve their required information and consultation of the books was the preference of most of the participants of the study and print resources were mentioned by the respondents as their preferred source of information to meet their information needs. It was also found that internet was the second preferred source to retrieve the needed information. This scenario asks for investment in both resources: print and electronic, so that library services might be improved.

It is also found that respondents faced problems such as inadequate library resources, physical access of the library, lack of information technology tools, lack of time, lack of searching skills, and overwhelming information on the internet. This situations demands for serious attention of the relevant authorities for elimination of such problems so that medical professionals can be satisfied which might help them offer quality services.

Respondents also suggested the need for skilful library staff, improved library servcies and training sessions for doctors regarding use of information technology tools, and digitization of the existing library resources. These suggestions, if considered, might play a

povital role in improved library's image and satisfaction of library patrons which, as a result, can contribute to availability of the state of the art services at the hospitals.

Implications of the study

This study has multipleimplications such as: a) it might facilitateinstitutions to understandthe information usage, needsand problems ofmedical doctors which, in turn,may play a role inmeeting the needs and enhancing library usage of medical professionalsas well as removing their problems. This, fulfilling the doctors' needs and removal oftheir problems,can help them access the required information within time to perform their professional tasks efficiently; b) library staff related implications, findings of the study might also help the medical organizations assess the training needs of the existing library staff to improve their skills to meet the needs of the library patrons. This will, undoubtedly,contribute tofacilitate the staff to provide the high-quality services; c) digitization implication, findings may help institutions realize need and importance of existing resources'digitization. This can prove a povital factor in facilitating both (patrons and library staff) stakeholders in providing quality services.

Limitations of the and Future Research Directions

Sampling techniques are one of the major limitations of this study as convenience sampling technique is used in this study which is not helpful in generalizing the results as it is difficult to ensure the representation of the whole population. Future study may be conducted using random sampling. This study is conducted at a Government hospital which functions in a different environment and with specific infrastructure and facilities. Therefore, its results may not be generalizable to other institutions of the country and it may be the second possible limitation of the study. Future research may be conducted to explore the information need and seeking behaviour of the doctors working at other public or private hospitals of the government of Pakistan.

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