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Salman Bin Naeem Salman
Children's Hospital & Institute of Child Health,Multan, salmanbaluch@gmail.com

Shamshad Ahmed
, Department of Library & Information Sciences,The Islamia University of Bahawalpur [Pakistan]

Amjid Khan
Assistant Librarian Department of Pharmacy University of Peshawar

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Salman Bin Naeem

Shamshad Ahmed

Amjid Khan

Salman Bin Naeem is Librarian, Library Department, The Children's Hospital & Institute of Child Health, Multan. Pakistan E-mail. salmanbaluch@gmail.com ; Dr. Shamshad Ahmed is Assistant Professor, Department of Library & Information Sciences, The Islamia University of Bahawalpur, Pakistan E-mail: shamshadfarooka@gmail.com; and Amjid Khan is Assistant Librarian, Department of Pharmacy, University of Peshawar, E-mail: amjid.librn@gmail.com

Information Seeking in Primary Care: A Survey of Doctors Working in Remote Government Health Facilities in Pakistan

Abstract: The objectives of this study were to describe the information-seeking pattern of primary care doctors and to examine the present position of clinical information availability at remote government health facilities in the District of Multan, Punjab, Pakistan. The participants of this study were all the medical officers working in Basic Health Units (BHUs), Rural Health Centers (RHCs) and Tehsil Headquarters (THQs), as these doctors met the established criteria. Criteria included Health Facilities run under Executive District Officer (EDO) Health, Multan. A descriptive survey was conducted for data collection. A close ended questionnaire was developed after relevant literature review and also accessing the situation of the remote government health facilities in district Multan. Results of this study showed that doctors rarely have the access to the services of medical librarian and medical library. Seventy four (74%) respondents have no access to computer with an internet although the print format is the most preferred format for seeking clinical information among primary care doctors. The study summarized that doctor's information seeking encountered barriers such as non availability of medical librarian, medical library that hindered the fulfillment of information needs.

KEYWORDS: Information Behavior, Information Seeking, Information Sources, Access to Information, Clinical Information, Doctors, Primary Care, Remote Government Health Facilities

Introduction:

The role of information seeking has always played a very significant part in all kinds of jobs performed by doctors, whether it is treatment of a patient or overall management of the hospital. According to Vakkari (1999) information seeking is a process of searching, obtaining and using information for a purpose. According to Thompson (1997) doctor's collected information which takes the shape of their knowledge is not always adequate to answer all medical questions at the time of patient treatment. It seems that most of the time doctors concentrate on their own knowledge which they acquired over the time period of years for making critical clinical decisions. According to Smith (1996) most of the clinical information doctor's apply while examining the patients is acquired from their memory and unfortunately some of it is out of date or wrong. Therefore, it is necessary for doctors to seek and keep abreast with the current clinical information to provide a better patient care.

Literature Review:

According to Bates (2006) importance of information cannot be argued in any field. He explained application of the term 'information' in library and information science by giving various examples i.e. the study of information seeking behavior tend to incorporate an awareness of all the kinds of information a person seeks. "People get information not just from paper sources, not just from other people, but also from the physical layout of their workspaces, from the design, not just the content, of informational genres, and above all, from the interaction of these various factors in a real situation. Information behavior is a sub-discipline in the discipline of library and information science. It explains "how people need, seek, manage, give and use information in different contexts" (Savolainen, 2007). It may also be described as information

seeking behavior or human information behavior. Information behavior (IB) is a widely recognized term used to explain the ways, in which people seek and use information. It explains how human beings interact with information. The term 'Information behavior' also used in library and information science to refer to a sub-discipline that engages a wide range of research conducted in order to understand the human relationship to information. Interest in this area developed many years ago. Librarians wanted to understand the users' information needs and seeking behavior, government agencies wanted to understand the scientist and engineers technical information usage pattern in order to provide and up-date them regarding the new research results. Social scientists were also interested in understanding the social use of information sciences in different areas. Last few years, social studies of information technology and social informatics have contributed to this area as well (Bates & Maack, 2010). There are many sources that can affect or set the information seeking behaviors of doctors. One of the things that effect on doctors' information seeking behavior is the rapid growth of literature. According to Wyatt and Sullivan (2005) amount of medical literature gets double after every 20 years. With this huge amount of growth in literature, it is impossible for doctors to keep abreast with all the latest and updated information in the context of patient management, thus doctors can enhance their knowledge to keep abreast by utilizing various information sources. Multiple types of information sources exist which provide information, but the most important type of the sources are formal sources and informal sources; formal sources include print and electronic sources and informal sources include personal communications. According to McGettigan et al (2011) reported that discussion with pharmaceutical representative and hospital consultants is the most useful source of seeking the information on new drugs. Another study conducted by Ramos, Linscheid and Schafer (2003) ascertained a huge number of human sources by resident

doctors to seek the clinical information to answer their clinical questions. Tan et al. (2006) find out that doctors preferred to consult with seniors or colleagues to whom they think are more knowledgeable in order to seek information regarding the clinical case, in which they feel unsure and unfamiliar about the patient case management. According to Tan et al. (2006), Dawes and Sampson (2003) ascertained that when doctors received a difficult case then confirmation with colleagues or experts may confirm their knowledge and they seek more information regarding diagnosis or treatment choices. Cullen (2002) conducted a survey on the use of the internet to seek clinical information and reported that internet was mainly used to seek information about rare diseases. Similarly, Casebeer et al. (2002) reported that patient's problem was the main reason to seek information from internet. Bennett et al. (2004) reported in his study that majority of the respondents use the internet to seek the latest and the most recent information regarding disease. Study results showed that doctors rated internet as a most significance source to seek information for patient treatment and care, it also concluded that credibility and relevance are the most important attribute regarding internet which sometime limit the doctors to access information on the internet. Many studies concluded that the internet is the most used tool among doctors to seek the information for patient education, patient care and to solve the clinical problems (Dorsey and Detlefsen, 2005; & Nail-Chiwetalu and Ratner 2007). On the other hand, Bryant (2004) and Boissin (2005) concluded that paper resources and contacts with colleagues, seniors and peer were the main source of information from doctors while discussing the case or patient management, they further concluded that electronic sources and internet are available everywhere but study reported that doctors faced problem while seeking information on the internet; some respondents face the issue of where to start search on internet, some respondents mentioned that they did not need internet, some reported that they did not know how to use the

computer, it is all because there is very little support to doctors in order to guide them how to get the possible result from this tool of information. Information needs and other aspect of information which motivates doctors to seek clinical information is one of the areas which have been explored and investigated by many researchers around the world (Dee and Blazek 1993; Shelstad and Clevenger 1996; Bryant, 2004; and Lappa 2005). However, this area has not been much explored and investigated in Pakistan. The available data are very insufficient to make health planners and providers able to understand the remote health professionals' information seeking patterns. Therefore, this study was conducted to describe the clinical information seeking pattern of primary care doctors working in remote government health facilities of Multan district.

OBJECTIVES OF THE STUDY:

1. To determine the clinical information seeking patterns of primary care doctors.
2. To provide a summation of the present position of clinical information availability to primary care doctors.
3. To give recommendations to meet the clinical information seeking pattern of primary care doctors.

RESEARCH QUESTIONS:

1. What is the clinical information seeking pattern of primary care doctors?
2. What is the present position of clinical information availability to primary care doctors in remote government health facilities?

3. What is the proficiency level of computer skills of primary care doctors in seeking clinical information?
4. What are the recommendations to meet the clinical information seeking pattern of primary care doctors?

METHODOLOGY:

The study was conducted in remote government health facilities of the District of Multan, Pakistan. Using a database of the District Health Multan, we selected those listing medical officer working in primary health care in remote areas of the district. A total of hundred and twenty two doctors were selected from Basic Health Units (BHUs), Rural Health Centers (RHCs) and Tehsil Headquarters (THQs) who met the inclusion criteria. Criteria includes Health Facilities running under Executive District Officer (EDO), Health Department, Govt. of Punjab and primary care doctors working as a full time regular employee in remote government health facilities in district Multan. A close ended questionnaire was developed after relevant literature review and also accessing the situation of peripheries in district Multan. The questionnaire was discussed with two consultants of teaching hospitals and two senior doctors (>8 years' experience) working at remote government health facilities. It was revised to incorporate recommended improvements. The structured questionnaire was distributed to hundred and twenty two doctors who met the established criteria. A three part questionnaire was pilot tested among small sample of primary care doctors. Part one covered demographic data including, respondent's name (optional), gender, age, and health facility related questions. Part two covered questions relating to clinical information seeking pattern of primary care doctors. Part three

covered questions regarding the present position of clinical information availability at remote government health facilities. The data were analyzed statistically, through SPSS (Statistical Package for the Social Sciences) version 19. Descriptive statistic was applied to analyze the data which include: frequency distribution, percentages and standard deviations. A five point Likert scale was used in questionnaire to gather the responses. Which was ranging from 1 to 5; 1=never, 2=rarely, 3=occasionally, 4=frequently, and 5=most frequently. Respondents' anonymity and confidentiality were ensured. Verbal permission was obtained from Executive District Officer, Health, Multan to gather a data for this study.

Results:

A total of 122 questionnaires which were distributed to subjects, 105 (86.06%) were returned. The valid responses were 100 (81.96%). Of the 100 respondents, 94 (94%) were male doctors and 6 (6%) were female. 67 (67%) respondents were working in Basic Health Units (BHUs), 9 (9%) at Rural Health Centers (RHCs) and 24 (24%) at Tehsil Headquarters (THQs). Respondents age was broad, with 29 (29%) between the age group of 21 to 30 years, 26 (26%) were 31-40 years, 18 (18%) were 41-50 years, and 27 (27%) were between 51 to 60 years of age.

Respondents' Clinical Information Usage Pattern

Table 1.1 describes the result of respondent's information seeking pattern during clinical practice. Results shows that respondents were seeking clinical information 'sometimes' from their personal files/collection (μ 3.38, $\pm$ 1.301), colleagues collection (μ 2.99, $\pm$ 1.105) and access online/Internet (μ 2.69, $\pm$ 1.253). On the other hand, respondents were seeking clinical information 'rarely' from the local hospital library (μ 2.44, $\pm$ 1.217).

Table 1.1

Clinical Information Seeking Pattern by Respondents

Rank	Clinical information usage pattern	N	Mean	Std. Deviation
1	Personal files/ Collection	100	3.38	1.301
2	Colleagues Collection	100	2.99	1.105
3	Access Online/ Internet	100	2.69	1.253
4	Hospital Library	100	2.44	1.217

Scale: 5=Always, 4=Very Often, 3=Sometimes, 2=Rarely, 1=Never

Present Position of Clinical Information Availability

Respondents were asked questions regarding their convenient access to information sources during clinical practices in remote government health facilities. Table 1.2 shows that respondents 'sometimes' had a convenient access to consultants/senior doctors (μ 2.55, ± 1.359). On the other hand respondents 'rarely' had a convenient access to up-to-date medical textbooks (μ 2.49, ± 1.314), continue medical education facilities (μ 2.31, ± 1.187), document delivery services (μ 2.29, ± 1.094), up-to-date medical journals (μ 2.23, ± 1.213), evidence based medicine (μ 2.23, ± 1.213), modern ICT equipments (μ 2.19, ± 1.195) and online resources/ internet (μ 2.03, ± 1.218). Respondents 'rarely' had a convenient access to medical librarian (μ 1.95, ± 1.158) and medical library (μ 1.87, ± 1.070) in remote government health facilities.

Table 1.2

Present Position of Clinical Information Availability

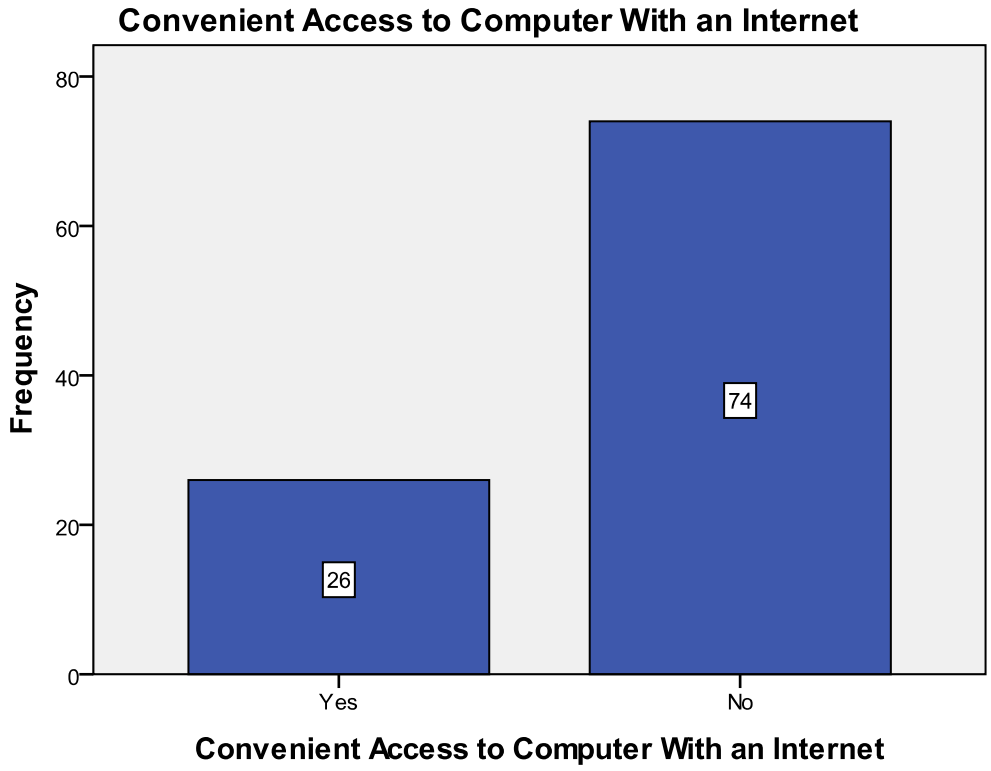
Rank	Convenient Access	N	Mean	Std. Deviation
1	Consultants/Senior Doctors	100	2.55	1.359
2	Up-to-date Medical Textbooks	100	2.49	1.314
3	Continue Medical Education Facilities	100	2.31	1.187
4	Document Delivery Services	100	2.29	1.094
5	Up-to-date Medical Journals	100	2.23	1.213
6	Evidence Based Medicine	100	2.23	1.213
7	Modern ICT Equipments	100	2.19	1.195
8	Online Resources/ Inernet	100	2.03	1.218
9	Medical Librarian	100	1.95	1.158
10	Medical Library	100	1.87	1.070

Scale: 5=Always, 4=Very Often, 3=Sometimes, 2=Rarely, 1=Never

Access to a Computer with an Internet

Figure. 1 describes the result of respondents' access to a computer with an internet at government health facilities. 74 (74%) respondents had no access to a computer with an internet at Government health facilities while 26(26%) respondents had access to a computer with an internet at Government health facilities.

Figure. 1



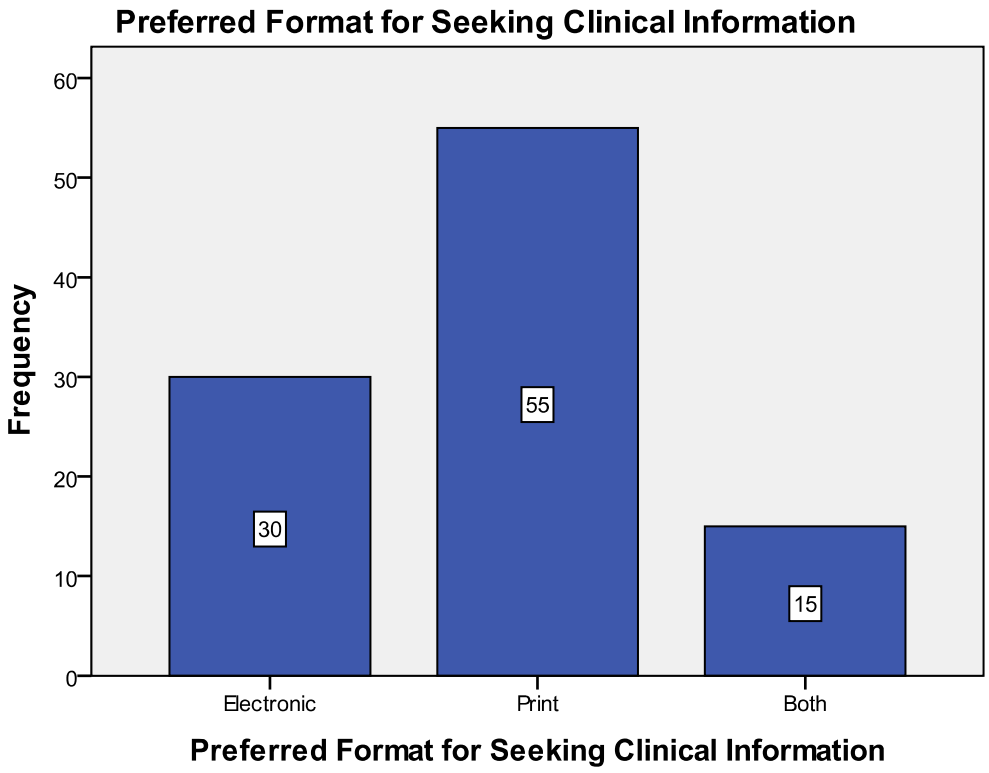
Searching the Internet

Respondents were asked a question regarding their searching skills on the internet. Of 100 respondents, 52 (52%) respondents were not confident searching the internet while 48 (48%) respondents were confident searching the internet. However, 37 (37%) respondents never used a clinical website/ database for clinical purpose while 63(63%) respondents used a clinical website/ database for clinical purpose for one time or more.

Preferred Format

Of 100 respondents, 55 (55%) respondents preferred the 'print format' while 30 (30%) respondents preferred the 'electronic format' and 15 (15%) respondents preferred the 'both formats' to seek clinical information (figure- 2).

Figure. 2



DISCUSSION:

Health information and knowledge are social determinants of health, since inequities in access to information leads to increase in health provision inequities. This creates unnecessary differences in the health conditions of individuals and groups. The result of this study showed that majority of the respondents have no access to medical library and medical librarian, which reflects the flaws in overall planning in provision of clinical information to primary care doctors working in remote setting. Wensley (1999) and Gorman (2001) recommended that where there is limited or no access to library services to primary care doctors in remote areas, there is need to provide them valuable information resources which could decrease the sense of doctor's professional isolation. Doctors cannot practice high quality medicine without continually updating their clinical knowledge which can only be achieved by discussions and consultations with other doctors, updating latest and synchronized biomedical information through medical journals, online databases and websites (Asad, 2009; Revere, 2007; Martin, 1997; & Gonzalez, 2007). On the other hand results of this study showed that primary care doctors have no regular access to consultants/ senior doctors, medical journals and online databases. Kapiriri and Bondy (2006) concluded in their study that health planners and professionals make decisions in remote setting with inadequate relevant information. The results of this study agree with other studies Bennett et al (2004), and Hall et al (2004) found that lack of information sources led to compromised patient care and physician inability to pursue answers to clinical questions. This study highlights the challenging problems in updating the latest clinical knowledge for the doctors which are comparable with the studies done by (Turner et al, 2008; Ebell, 2009; Dorsch, 2000; & Ogbomo, 2012). However, advances in information technology have held the promise of improving the dissemination of biomedical knowledge to primary care doctors, but still these

systems have not achieved widespread use in Pakistan. However, these systems made it easier to provide cost efficient online clinical information services to doctors working in rural areas. Similarly, medical librarians have potential to play their role effectively and fill the gap of sources inadequacy by providing current clinical information to remote health professionals.

CONCLUSIONS:

The results of this study concluded that primary care doctors working in remote government health facilities are suffering with non availability of the services of the medical librarian and libraries. Majority of doctors have no access to computer with an interment which directly affects patient care and it is also taken as a disability to seek current clinical information. Finally, the findings of this study encourage further research on the topic of 'challenges in seeking clinical information in primary care in Pakistan'.

STUDY LIMITATIONS:

The shortcomings of this study include, that sample size was not very large but still reflects the overall situation of the Government remote health centers of this District. Though the inadequacy of clinical information sources impact on patient care were not observed in this study but it is rather assumed that it affects diagnostic and treatment decisions

RECOMMENDATIONS

1. Access to medical library and services of medical librarian should be provided to primary care doctors in government remote health facilities.

2. Connectivity to networks and internet should be improved in remote setting of district Multan.
3. Health departments. Government of Punjab should take a step towards building an online clinical information system (OCIS). Where on one portal primary care doctors in remote government health facilities should be able to search clinical information related to clinical case.
4. Provision of equipments such as computers, printers, scanners and photocopiers should be made available at each health facility.
5. Training on computer usage and searching skills should be given to every primary health care doctors working in the government remote health facility in district of Multan.
6. Newsletters should be published carrying out the activities related to health practices and also demonstration to various online resources should be provided in it, so primary care doctors should be able to get familiar with the new information resources.

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