Review Article

Electronic Information Seeking Behaviour among Nursing Students and Teachers: A Review

Shivendra Singh[1], R. K. Mahapatra[2]

[1]Assistant Librarian, Baba Farid University of Health Sciences, Faridkot-151202, Punjab, India.
[2]Professor and Principal, College of Library and Information Science, SMIT, Berhampur, Berhampur University, Ankushpur-761100 Orissa, India.

Corresponding Author: Shivendra Singh

ABSTRACT

Nursing education like any other subject fields has grown both vertically and horizontally. Corpus of literature is available in the given subject field produced through both conventional and contemporary means. Besides, as has changed the means of information production in this particular subject field, so has changed the information seeking behaviour among the nursing students and nursing faculty all across the world. The undergoing review is aimed to look at different variables involved with the electronic information seeking behaviour among nursing students and faculty members, studied by different research scholars all across the world during different periods of time. The study divulges over some prominent factors, directly related to effective access, retrieval and dissemination of electronic information. The study also discusses the changed information seeking environment, especially in the light of the growing use of electronic sources by the academia all across the world with emphasis on nursing, responsible for changing information seeking behaviour among Nursing students and faculty.

Key words: Nursing Education, Information Seeking Behaviour, Electronic Resources.

INTRODUCTION

Each individual shows his/her individual considerations while seeking information in any given subject field. Information seeking is one such activity, in which all individuals are indulged and this information seeking activity of each individual is equally manifested by a certain kind of behaviour (Wiberley & Jones, 1989). Over a period of time, information seeking behaviour has also grown as an aspect of scholarly work, to which academic librarians look forward as the guiding lines, which they follow to develop collection and extend other user services in their organizational structure to facilitate the information seeking. Apart from document collection, present day library professionals are actively involved with creating, designing and management of databases, whereby the process of information delivery is associated with the information seeking by using information retrieval search techniques (Kingrev, 2002).

Information seeking is the process in which persons persistently engage to change their state of knowledge (Marchionini, 1995). It is a conscious effort to acquire information in response to a need or a gap in your knowledge (Case, 2012) and the process of construction within information seeking involves fitting information in with what one already knows and extending this knowledge to create new perspectives (Kutlthau, 2004).

Information need is a subjective experience which occurs in the mind of the person and consequently, is not directly accessible to an observer. The information seeking behaviour is the concept of information need, which has proved intractable for the reason advanced (Wilson, 1981). It is recognized that information need is required for the satisfaction of the goal, due to inadequate knowledge (Case, 2012). Compared to printed sources of information e-documents are in greater demand (Morse & Clintworth, 2000).

Objective of the Study

The study seeks to examine the different variables which govern the information seeking behaviour or the changing information behaviour among the students and faculty members of the nursing science in the electronic environment.

Nursing Information

Medical practice and nursing can be considered as the two faces of the same coin, viz. Health Sciences. If Medicine is about diagnostics and treatment, Nursing is about the post treatment follow up or the post treatment recovery science. Nursing professionals seek information on varied subjects, which generally includes information needs related to health problems, health assessment, disease, treatment of patients and other health disciplines are a part of health information science. Nursing professionals do search health information for patient care and recovery purposes. Information technology has got a greater role to play in disseminating the timely information on varied health areas, and IT as a subject should be introduced in nursing education and health care training programmes so that health care worker be able to provide health care services timely (McNeil et al., 2003).

Electronic Information

It is difficult for libraries to acquire all the published information in any given field. Thereon, acquiring all the printed matter and storing same in the retrieval form in the ever squeezing space of the library has been still more challenging. Increasing costs of raw materials have led to decrease in demand of the print (Lakshmana Moorthy & Karisiddappa, 1996) and this has warranted for seeking newer methods to replace the conventional publishing and it is the electronic publishing which has shown promise. Electronic publishing can be defined as the document created, edited, submitted and disseminated in e-format by ICT process (Lancaster, 1989). E-resources is a term used for a diversity of digitally created resources such as Bulletin Board, CD-ROM, Discussion List and Website and to more precise a layman's understanding about the E-resources is a non print material that is formed digitally (Jones & Cook, 2000).

Electronic Information Seeking Behaviour

Internet has revolutionized almost every sphere of human activity and has taken into its savvy the information seeking behaviour of the people. Seekers of information previously used to rely heavily on printed sources of information, but with the advent of electronic documents the course of information seeking has got totally changed. Publishers who previously used to publish study materials in printed format only have now shifted to hybrid publishing. Hybrid publishing is more about making available same documents in both electronic and printed formats. There is a growing trend towards the publishing and use of e-books. Handy and portable electronic gadgets are being made available in market to access these documents. Journals are being published mostly in electronic format and some publishers do make available the print version of these journals but others have totally shifted to electronic versions of these documents.

Easy access and availability of e-documents in the market has somewhere set a new trend among the information seekers and it won't be inappropriate to say that information seeking behaviour of the people has got totally changed in the prevailing electronic information environment. Some of the common variables identified playing

their part in the effective use of electronic information resources are.

Place

People prefer to access e-resources at the place of their choice the most. Some of the common places identified, where students and faculty members generally access the e-resources subscribed the institutions are the Library, office, and the Home the most. While assessing e-resource accessing habits among the students and faculty member of medical students of Aligarh Muslim University, (Sethi & Panda, 2012) found that majority 51.56% of respondents prefer computer lab as their preferred placed to access the e-resources, followed by 43.75% respondents in the library. 32.81% respondents however replied that they prefer cyber café, while as 29.68% opted for home. In a similar study conducted by (Renwick, 2005) to find out use of e-resources by the faculty of medicine and allied subjects, found that majority 79% faculty members have internet access at home and do access e-resources at their respective place of residence. Office is second most preferred place of the faculty member to access e-resources, followed by the library.

Kelly & Ore while making assessments about the e-resources and the preferred locations to access these resources, the authors found that 81% respondents make use of resources subscribed by UMUC from off-campus locations, preferably from home or their workplace (Kelley & Orr, 2003). This also corroborates the fact that seekers of information may tend to avoid coming to library for making use of e-resources if made accessible at their preferred places. Accordingly, Dee & Stanley found that nearly 76% nursing students own electronic gadgets to access e-resources on their preferred places (Dee & Stanley, 2005).

Dee & Stanley (2005) in a study conducted among nursing students and nursing practitioners observed that less than 4% nursing students make use of the library during their academic programmes while as 28% of nursing practitioners in his study opined of making use of their workplace library (Dee & Stanley, 2005). The study is equally an indication towards the fact that nursing students have a far less approach towards the use of library or e-documents when compared to students and practitioners of other professional fields.

Library

Libraries are the prime sub-institutions of any parent institutions which are actively involved with the procurement of e-resources. Any library users must have the awareness about the e-resources being subscribed by their institutional library. Most of the e-resources subscribed are accessible either by using username & password or are accessible on institutional I.P address. While assessing the awareness about e-resources among nursing students and faculty (Chen & Huang, 2012) found that 80% of medical students visited the library for the uses of electronic resources once a week. (Jamali, Nicholas, & Huntington, 2005) suggested that log analysis methods improve the use of e-resources, especially in the information environment available on 24 x 7 bases.

While surveying the library users of four Puducherri Medical colleges to study their habit of library visits in connection with the use of e-resources (Dhanavandan, Esmail, & Nagarajan, 2012) found that on average 46% respondents visited at least two libraries and 26.66% visited 3 to 4 libraries, 17.33% visited 5 to 6 libraries and 10% visited 7 to 8 libraries. Although most of the institutional libraries all across the world observe 24 x 7 functioning, so there is very little chance that library clientele may show any displeasure in this regard. However, there are other areas where library members may show dissatisfaction with the library. Cozin and Turriniin their study found the majority of library users of library of school of nursing, University of Sao Paulo satisfied with the resources and service of their library (Cozin & Turrini, 2008). The authors further observed that the respondents were not having adequate

training in doing bibliographical search.

Franklin and Plum studied information seeking behaviour of the users of five medical libraries and found that in-house users were outnumbered by the remote users(Franklin & Plum, 2004). The remote users also showed 51% to 84% inconsistency in at all the five libraries under study.

Zafar while assessing the user satisfaction level with the e-resources among medical and nursing students provided by the Aga Khan University Library, Pakistan found that only 1% respondents showed dissatisfaction with the e-resources provided, while as majority 35% respondents showed satisfaction with the e-resources provided, 63% were partly satisfied (Zafar, 2013). Bhat & Mudhol, while studying faculty and students of Sher-e-Kashmir Institute of Medical Sciences found that 28.75% respondents rated the e-resources provided by their library as excellent, 21.25% rated them as poor, 15% rated very poor (Bhat & Mudhol, 2014).

Library Professionals

By and large, the role of library professionals cannot be undermined in making available the e-resources to their clientele. But, it is equally true that all the library professionals are not technically competent enough to fulfill their role as electronic information provider. (Chen & Huang, 2012) in their survey about the role of library professional in organizing and disseminating the e-resources among their clientele found that 73% respondents were of the view that their library professionals have an insufficient knowledge about the e-resources in general and e-medical resources in particular. This survey has itself set the tone for debate, as how far library professional should also be subject specialists.

While studying the information retrieval techniques for undergraduate students enrolled in the faculty of science in University of Western Ontario (Berg, Hoffmann, & Dawson, 2010)are of the view that there is considerable difference in the

search techniques of print and e-resources, and it the library professionals who can address the issues with regard to the best use of e-resources. Academic staff plays a very vital role in disseminating information from e-resources (Atakan, Atilgan, Bayram, & Arslantekin, 2008) .

E-Resources

Different type and kind of e-resources are made available these days to institutions and individuals, mostly depending upon the specialization of the publishers. Some of the common forms of e-resources subscribed by the libraries of respective institutions are in the form of online journals, e-databases, e-books, CD-ROMs, Photographs, Movies, Tapes, recordings, etc. While seeking the user taste about the e-documents they access in the library (Dhanavandan et al., 2012) found that more than 36% respondents use CD-ROM 2-3 times in a week, 88% faculty members use the internet, while as 87.33% respondents replied that they use e-resources for learning & research purpose. The authors also observed that 80% faculty members access e-resources for current information, while as apart from infrastructural limitation, information overload is being considered as one of the barriers in information seeking replied 73% respondents. In a similar study undertaken by (Okiki, 2012) in the University of Lagos found 28% respondents use e-journals, 27% e-databases & 18% e-books.

Among the practicing nursing professionals e-resources are making a considerable difference in gaining knowledge and putting same into practice (Tannery, Epstein, & Gadd, 2007).Case beer and others while seeking the response from the physicians about the use of e-resources, observed that 35% respondents are of the view that e-resources are quick, available to access 24-hours and 24% respondents replied that e-resources are easy to search (Casebeer, Bennett, Kristofco, Carillo, & Centor, 2002). Morse and Clint worth worked for six months to assess the use of print and electronic resources and found that

online journals are used 10% more than the printed sources of information, clearly indicating a shift in priority from print to e-documents (Morse & Clintworth, 2000).

Ray and Day in their study on students attitude towards e-resources and found that 22.1% replied that e-resources are faster, 16.15% stated that accessing e-resources is a time consuming process, 25.1% believe accessing online resources give access to a wider range of information, however 10.5% see this as a disadvantage (Ray & Day, 1998). Dhavandan et al (2012) while studying the e-resources and services of four medical colleges of Puducherry observed that 80% respondents find e-resources as current and updated, 65.33% find e-resources easy to use and 62.66% them fast and timely. 37.33% respondents also replied that accessing e-resources lead them to a wider range of information (Dhanavandan et al., 2012).

People are making use of different kind and type of electronic resources in their routine working which range of both online and offline sources. Students, Scholars and Teachers in the field of academic show their personal tendency towards these resources. Mawindo & Hoskins in their study concerning the use of e-resources, found that 56.9% respondents access websites on daily basis, while as 30.8% access websites between two to four times a week. The majority of the respondents, 44.6% have also indicated that never used e-books while as 7.7% indicated that they make use of e-books on a daily basis (Mawindo & Hoskins, 2008).

Ray & Day in their study conducted on a similar aspect found that the Internet and CD-RoM's are most popular sources of electronic information among students accessed by as many as 80.7% and 76.7% respondents respectively. Also, 37.5% respondents in the same survey have indicated of making use of electronic journals, while as 46% respondents claimed of making use of OPACs (Dee & Stanley, 2005). Okiki while studying the e-awareness

among the academic staff of the University of Lagos, Nigeria found that 28% staff members make use e-journals, 27% of e-databases, and 18% or e-books (Okiki, 2012).

Nursing Information Need

Some of the common purposes of accessing e-resources, as highlighted by different respondents in different studies undertaken by different researchers from time to time are research, teaching, awareness, paper writing, and many more similar interests have been served by these e-resources to a variety of users. While studying the e-resources behaviour among the students and staff of the University of Lagos (Okiki, 2012) found that 36% respondents use e-resources for the research purposes, while as 34% replied that consult such resources for paper writing. However, 15% respondents replied that they consult e-resources of teaching purposes.

Research and teaching are the two prime reasons for which, generally the e-resources are being consulted by the students and the faculty members of nursing institutions. E-databases are generally subscribed by the institutions and consulted by education and general awareness (Atakan et al., 2008). Renwick in his study, while seeking multiple option opinions of the respondents, found that 86% respondents use e-resources for communication purpose, like e-mail, social networking etc. 79% replied for professionals' development, 77% for personal use (Renwick, 2005).

It has been observed that nursing professionals need information on a daily basis for clinical decision making. Some of the key areas, in which nursing professionals seek information, are diagnosis, communication, intervention, service delivery, referral and ultimate organization observed (McCaughan, Thompson, Cullum, Sheldon, & Raynor, 2005). The authors further observed that the information requirements of these professionals vary considerably, mostly depending upon case to case basis, which normally ends up with seeking expert

advice. Information requirements of the nurse practitioners are related to diagnosis and drug therapy (Cogdill, 2003). The author observed that nursing professionals (post graduates) were keener to seek information related to various health recovery aspects than their other professional colleagues without a master's degree. Information needs of nursing practitioners are generally around patient care, drug therapy, diagnosis and other therapy, observes (Rasch & Cogdill, 1999) while studying the information seeking behaviour of the nurse practitioners of North Carolina University.

Ray & Day (1998) in response to a similar questions asked to respondents found that 42% opined that they rely heavily on the e-resources and in the absence of same their work would suffer (Ray & Day, 1998). This was has been observed among the respondents of this study where we found a whopping 89.29% opined of their work would suffer. This considerable difference among the two heterogeneous groups observed at two different periods of time confirms that there is growing demand for e-resources and the nursing education is no exception to it. People day in and day out are making more and more use of e-resources and with the result we find such a sharp difference in the user perception of 1998 and 2014.

Okiki (2012) while studying the access of e-resources among the staff members of the University of Lagos, Nigeria found that 34% respondents make use of e-resources for writing research papers, while as 15% for teaching purpose (Okiki, 2012).

COMMONLY ACCESSED NURSING E-RESOURCES

Abundant e-resources are available for professionals working in different fields and so holds true of nursing professionals. Still, there are some databases which are more popular among professionals. Accordingly, (Dee & Stanley, 2005) in their survey found that CINAHL and PubMed are two popular databases among the nursing

professionals. Andrew and others in their survey study observed that the majority of the primary care practitioners seek patient care information several times a week. The authors found that 44% respondents replied that they do a literature search on databases like MEDLINE several times a week (Andrews, Pearce, Ireson, & Love, 2005). The commonly used information resources include consulting senior colleagues, drug manuals, textbooks and other protocol documents, observed (Cogdill, 2003).

In a study undertaken on over 600 working nursing professionals of New York State found that the nursing professionals of the state apart from seeking information from files, books and professional organizations do rely on their peers and colleagues in their agency for different kind of information. 38.8% respondents replied that they frequently make use of MEDLINE, while as 65% respondents indicated interest in continuing education (Lathey & Hodge, 2001). The authors further recommended that the nursing professionals need to be appraised about the government regulations about the health care, latest developments in their respective areas of specialization, need to collect more and more drug information and the various psychological aspects of the diseases.

Assessed the online information resources by nursing professionals, including the students to find accurate health information from the online library resources after instructional classes (Wozar & Worona, 2003). The most frequently accessed online resources have been Primary Care Online, accessed 33 times. The second most was an MD, accessed 17 times; Ovid (8) was the third most used resources, Medline (7), NLM resources (5) and CINHAL was (1). Cozin and Turrini discussed about the availability and user satisfaction of e-resources among nursing professionals (Cozin & Turrini, 2008). In another study by Pyne and others observed that clinicians should have competencies to access vital information to carry on with their health care practices (Pyne, Newman,

Leigh, Cowling, & Rounce, 1999). The researchers found that journals are not being used by clinicians to the amount they normally should have been, this includes the lower use of databases like CINAHL and Cochrane.

Wozer & Worona observed that most of the nursing aspirants from University of Pittsburgh during their campus places were asked to locate the accurate medical information, some of the commonly sources cited by these nursing interns included Primary Care Online, which was accessed 33 times, followed by MD, accessed 17 times, Ovid 8 times, Medline 7 times, NLM resources 5 times, CINHAL ones (Wozar & Worona, 2003). Dee & Stanley in their study found that maximum 96% nursing students used CINHAL at their workplaces and MEDLINE (PubMed) was also being used by 40% of the respondents (Dee & Stanley, 2005). The authors also found that the website of the National Cancer Institute (NCI's) website was equally used by 24% respondents and Medline Plus by 13% respondents. De Groote and others reveal that MEDLINE was their (nursing 75%) starting point for finding research articles (De Groote, Shultz, & Blecic, 2014).

Internet Facilities and Uses

Internet has become one of the popular means of accessing e-resource online in real time. Researchers want the latest information published in their subject field be delivered them the very moment it is published. In conventional publishing techniques same was not possible, however internet with the access to relevant journals and other databases, it has literally become possible for information seekers to get the information very moment the moment it is published. While studying the use of e-resources in Share-e-Kashmir Institute of Medical Sciences found that more than 23% faculty members and students spend less than 2 hours and nearly 16% respondents spend nearly 3-4 hours daily on the Internet(Bhat & Mudhol, 2014).

While studying the use of the internet and the net based e-resources (Carole, Katherine, Kathryn, & Charles, 2003) found the use very scant, but mentions that this does not mean that internet as a workplace tool is not being accepted by the medical community or there is any delay in its acceptance by the medical community in general and nurses in particular. The users have their own individual perceptions about using the web resources or other web based information. (Metzger, Flanagin, & Zwarun, 2003) in their survey study, while seeking the response on multi option basis found that 80% respondents use the internet for research purposes, 51% for email and 32% for their course work etc. Casebeer and othersin their study found that 80% physicians access the Internet for medical information, online article and patient information. 33% respondents reported for using internet for professional update, 31% for continuing education, 45% of accessing online journal articles and 86% for personal use (Casebeer et al., 2002) when Kahouei and others study regarding organizational support for use of online information find the use of online information resources was not adequately (Kahouei, Ahmadi, & Kazemzadeh, 2014).

Awareness

Publishing e-resources or having e-resources in place is not an end in itself. The end users or the potential target group has been aware about the type and kind of e-resources, which are available in their subject field. It is always imperative that educational institutions and organizations should sensitize and draw awareness among the students and faculty members of their respective institutions of the e-resources which are directly available to them on a subscription basis and to those resources which are available in the market but may not be subscribed by that particular institution. In a survey undertaken in the Aga Khan University Library, Pakistan (Zafar, 2013) found that 57.5% respondents were aware of the Online databases, 62.5%

of E-journals, 20% uses CD-ROM databases, 35% of Electronic dictionaries, 45% Electronic Books, 10% E-theses, 35% used E-encyclopedia, 5% E-newspapers and only 5% respondents reflected unawareness about these e-resources.

A similar study was conducted by (Sethi& Panda, 2012) to assess the awareness of web resources among the medical students of Aligarh Muslim University. The authors found that some of the common web resources consulted by the students include encyclopedia, dictionaries and indexing & abstracting journals. The authors found that 71.81% life scientists access the e-resources for the awareness of the latest developments in their subject field.

User awareness towards the use of e-resources varies considerably among faculty members from institution to institution. While studying the perception of faculty members towards the use of electronic resources in the United Arab Emirates University (Ibrahim, 2004) found that faculty members lack the proper awareness about the use of e-resources, which he even found far less than the expected levels. Ibrahim opined that lack of awareness towards the use of e-resources affect the teaching and research activities and standard of the university. In a longitudinal study conducted in March 2002, October 2002 and February 2003 among the students of Glasgow Caledonian University (Crawford, De Vicente, & Clink, 2004) found a significant change in the response about the use of electronic sources of information.

Information Search and Retrieval Techniques

Retrieving information from online or other electronic sources, the information seekers are supposed to have sufficient knowledge to retrieve the desired piece of information from the e-resources available. Studying this particular aspect of the search behaviour among the life scientists (Sethi & Panda, 2012) observed that 70% respondents use Key words to search the required piece of information, 21.87%

respondents replied that they use the field search and the 12.5% replied of using the phrases to locate the information.

In a survey undertaken among the students of the University of Isfahan, Iran (Asemi, 2005) found that the medical students make a significant use of net based information sources. Asemi further observed that print is still the preferred sources of information, as a good number of respondents reflected that due to lack of information search skills they are not able to locate the desired piece of information. With regard to reliability and authenticity of the information available on the internet, the author found that more than 69% respondents believed that the web resources are not trust worthy, however 31% respondents replied that net based information resources are reliable and qualitative.

Information retrieval as a skill to retrieve information from web resources is as important as the information itself. It has been found, each individual is not proficient enough to retrieve the desired piece of information from the online or other e-resources as efficiently as others may be. However, there is always scope for them to improve their skills, so as to make a good use of e-resources. Based on the evidence based nursing practices, it has been found that practicing nurses face problems in seeking the most reliable and authentic information, so as to support their clinical decision making (Miller, Graves, Jones, & Sievert, 2010). The researchers are of the view that practicing nursing professionals and school nurses be given training so as to firstly know how to access web-based information sources and then critically evaluate them

The faculty members in the Nursing field are keen to access to online electronic Databases and wants more online database subsection observed (Kwafoa, Imoro, & Afful-Arthur, 2014). The authors in their study found nearly 50% of the respondents using the internet for academic work, while as majority (92%) of the faculty members

have awareness about the online e-database. However a good number of faculty members showed keenness in conducting training programmes towards drawing awareness among the information seekers towards the use of e-resources and the tools and techniques thereof they should use to retrieve the relevant information.

A study conducted in medical university in Iran regarding retrieval skills of nurses reveal that 80% were not aware about the Boolean and proximity search operators (Farokhzadian, Khajouei, & Ahmadian, 2015).

Awareness about e-resources again is not an end in itself, retrieving a particular piece of information from the sea of internet without wasting much time is what accounts for the information search techniques among the information seekers. While assessing the information search ability among the Swedish student nursing community, by exposing the respondents to the two popular nursing databases CINAHL and PubMed, (Madsen-Rihlert, Nilsson, & Stomber, 2012) found that the respondents were not able to execute the task assigned. Although researchers were expecting that registered nursing professionals would be able to finish the task successfully but couldn't. The researchers further recommended that there is a need to look into the area at what makes the nursing respondents to not to locate the relevant information and the need thereof to optimize the search strategies.

Zafar while studying medical and nursing students of the Aga Khan University found that 15% users find it difficult to make use of e-resources and another 5% faced problems even in locating the documents (Zafar, 2013).

Interpersonal Relationship

Knowledge can be shared and information can be exchanged not just by consulting the formal sources, but informal sources of information may prove as good as any authentic formal source of information. The concept goes almost similar to the explicit knowledge and tacit knowledge. The interpersonal relationship between the professionals can prove a great boon among a peer group sharing common interests. Since time immemorial people have been exchanging information and were heavily relying on word of mouth, but the practice of gaining knowledge though such informal means has declined. In a cross sectional survey undertaken on senior level undergraduates and nursing students from McMaster Mohawk and Conestoga B. Sc. Nursing program in the two large hospital corporations of Hamilton, Canada (Wahoush & Banfield, 2014) observed, both the nursing students and the RNs where mainly using electronic sources of information, but it was the interpersonal relationship, which used to make use effectively to learn the use different electronic sources of information. .

Deep and Stanley surveyed nursing students and nursing practitioners about the use of e-resources and found that both the group of professionals relies on interpersonal relationship for accessing e-resources (Dee & Stanley, 2005).

Zafar, while seeking the reply from UG Medical and nursing students of Aga Khan University Library found that majority 33% respondents learnt the use of these e-resources from their classmates (Zafar, 2013).

Social Networking

Social networking may appear similar to that of practices followed in interpersonal relationships enjoyed by the nursing professional in sharing knowledge and information. Social Networking has a broader scope than that of the interpersonal relationship. Under social networking professionals remain in touch with a wider cross section of their professional counterparts all across the world. Sharing personal expertise, which may be evidence based information, can prove of greater and instant help to the practicing nurse professionals. The growing use of social web tool 2.0, which is proving quite impressive in making communication effective and two ways (Kamel Boulos &

Wheeler, 2007). Social bookmarking, file sharing, collaborative filtering, messaging are some of the common means of information sharing. Technological advancement is going to add a lot more in the furthering the scope of the information sharing in future.

Information Overload

Advances in the medical sciences are taking place at an alarming pace; this somewhere makes it difficult for the medical practitioners keep pace with the latest developments in their area of interest. The exponential growth in the medical literature also turns the medical literature obsolete at a greater peace. Latest research results in the present day medical science are being made available in the electronic form. This huge corpus of literature available on each individual facet of the medical practice sometimes leads to medical practitioners in general and the nursing professionals in particular face the problems of information overload. Jackson and others in their study observed that despite making available a wide range of information, some of the professionals continued to look for additional information as they felt that present lot of information is not sufficient for them to cater their information requirements (Jackson et al., 2007).

Information Crisis

Proportionate growth, distribution and access to information is not uniform across the length and breadth of the globe. If some countries are reeling under information overload, others are facing an information crisis. Access and production of medical literature in the world is not proportionate. Developed countries of the world have a very robust health sector, while as the health sector of the third world countries is very poor. Hoppenbrouwer and Kanyengo in their study on access to health care information in Zambia observed that there is an inadequate access of health information among Zambian health workers (Hoppenbrouwer & Kanyengo, 2007). The researchers are also observed that how Zambian medical professionals are striving

hard to improve their information exchange by employing some low end technology.

Open Access

Open access publishing has opened up new vistas of information, publishing, sharing & exchange and the medical sciences is no exception to it. Open access publishing has helped to increase the visibility of research output. More and more people are able to seek the relevant piece of information from different open access online sources for free of cost. Open access publishing has helped research to touch its ultimate purpose, which otherwise in the traditional form of publishing used to be limited only to those who used to afford procurement of such research output. While assessing the use of freely available e-resources in the field of health sciences in general and nursing in particular (Schell, 2006) observed that PubMed is the most popular open access database in the health sciences which is generally accessed by the guests. Shell further observed that ADL members pay more emphasis on the traditional medical literature.

Learning Use of E-Resources

Ability to access e-resources to make their use is something which an individual learns over a period of time. Learning the use of e-resources can be attained through different means. Renwick in his survey study observed that 83% faculty members replied that they did not attain any formal training for accessing e-resources and were self-taught, followed by friends (Renwick, 2005).

Information Literacy

Given the amount of information available on www on each subject field, it has become increasingly difficult for information seeker to assess the authenticity and reliability of the information. Information literacy enables a person to be judge the authenticity and reliability of the information. It enables a person to look for those sources of information which have an established authority. Information literacy is imperative for Evidence Based Best Practices (EBP) in the electronic

environment where health professionals have to deliver in more challenging environments, observed (Kaplan Jacobs, Rosenfeld, & Haber, 2003) while studying the aspects like IL and EBP among nursing graduates in the New York University.

A similar study was undertaken by the (Shorten & Crookes, 2001) among nursing professionals and observed that there is a far greater need of honing the information literacy skills among the nursing professionals, who need to be made more aware of the existing literature, and methods of retrieving relevant information, its evaluation. The researchers observed that students who had attended the information literacy programmes performed better and reflected the greater amount of confidence to that of those students had not attended such training. Information literacy draws awareness among students about the information sources, which can be imparted as a part of the curriculum. Information literacy constitutes an important component of the nursing practice in the health care delivery and has somewhere become the important component of the lifelong learning of the nursing education (Verhey, 1999). Verhey discussed about the practice adopted by the School of Nursing, San Francisco State University, where programmed of information literacy in its undergraduate nursing syllabus which is more scientifically woven around instructional strategies on a semester basis.

Mawindo & Hoskins in a similar kind of study undertaken on 66 respondents, observed that 47% respondents opined of having received formal training to access the e-resources, while as 35% denied of having received any such training (Mawindo & Hoskins, 2008). Internet if on one hand has proved us as a blessing on the other hand it has got some drawbacks as well and the people well versed with the use of online resources is in a better position to judge this deficiency. The study also observed that only 7.6% respondents replied that they can access and make use of online sources more effectively, while as a major

lot 51.5% respondents rated their individual IT literacy as average. Casebeer et al. in their study observed that 28% respondents are not able to locate the related information from the internet, while as 23% were of the view that they do not have adequate skills to locate the information and still more 30% respondents find the internet as a source having information overload (Casebeer et al., 2002). Ray & Day in their study on student attitude towards electronic information sources found that 10.5% find limited access to online sources as a hindrance, 16.4% find it time consuming process, 11.1% owe Lack of IT knowledge and still more 13.5% respondents find the internet as a source of detraction (Ray & Day, 1998). Ansari and Zuberi in their study undertaken at the University of Karachi found 42.8% respondents do not make use of e-resources due to lack of knowledge to these resources and information technology (Ansari & Zuberi, 2010).

Skill development and information literacy go hand in hand, Dee & Stanely observed that 25% nursing students and clinical nurses believe that due to lack of IT skills they do not make effective searches of electronic databases, while as 8% respondents have agreed that lack of training acts as barrier in information retrieval (Dee & Stanley, 2005). Zafar (2013) on the similar subject while studying the Aga Khan University Library found that 70% are keen to have special training for the use of digital resources while as 30% believe that there is no such need (Zafar, 2013).

Uses of Electronic Vs Print Documents

Mawindo & Hoskins found that a majority of the respondents, 97% make use of e-resources in their routine work (Mawindo & Hoskins, 2008), while Dee & Stanley in their study found that 83% nursing students reported of making use of books at least once a week, 25% responded of using books on daily basis (Dee & Stanley, 2005). The author also observed that a majority 73% respondents are of the view that nursing journals are more useful,

while as 33% find nursing texts as more useful. Zafar while seeking response from UG and PG medical and nursing students of Aga Khan University found that 20% respondents prefer to make use of hard copy formats while as majority 80% of the respondents prefer to read on screen (Zafar, 2013).

Impediments

Normally, it has been found that everything does not go so smoothly in executing things, the way we intend. Same is the case with the accessing e-resources, as every time may not necessarily turn out to be our good time in accessing the e-resources. There are different kind of impediments which may turn our good experience into bitter once and many more. (Okiki, 2012) found power supply, internet speed and information overload as some of the common impediments which information seekers face while seeking the information from e-resources.

Nursing Research

Growth and development of a subject field rests on the amount of research undertaken in any given subject field by the professionals concerned. The amount of literature produced in the field of nursing depends upon the research activities undertaken by the nursing professionals. In a study conducted for Swedish Nursing Students of their attitude and awareness towards undertaking R & D activities in nursing education and training (Björkström, Johansson, Hamrin, & Athlin, 2003) found that more 60% students reflected their eagerness to undertake research in the said field sooner or later in their career. What is more noteworthy was that more than 77% respondents were familiar with at least one local researcher, while as, 25% of the student respondents mentioned that they have never gone through the scientific nursing research journals.

CONCLUSION

From the various studies undertaken by different researchers all across the world in the nursing field, it emerges that there is no uniformity in the information seeking behaviour of the nursing professionals. If the nursing professionals from the developed countries have access to various e-resources, the nursing professionals from the developing and third world countries suffer at this front. In some countries if e-resources are being deemed as vital for the growth and development of nursing subject field and the patient care, on the other these professionals for the want of proper training and access to e-resources still find solace in the print resources.

Institutional administration has always got an important role to play in making available electronic sources of information to their students and faculty members. Application of information and communication technology to nursing institutions can do wonders in providing the most authentic, reliable and up to date information to the nursing students and faculty (Willmer, 2007) and it is the nursing institutional administration which can ensure in extending such facility to their students. The author observed that some of the common reasons cited for the poor ICT skills among nursing students and faculty are time, untrained human resource, information, equipment, money and materials, compounding problems to nursing students in making better use of electronic sources of information

Institutions active in imparting nursing education and the organizations engaged with extending health services have to ensure the subscription of various databases to their users. It is not only the subscription, but also have to ensure to put in place the minimum basic infrastructure to access the electronic resources. Libraries and library professionals have to enrich the libraries of their respective institutions with the need based e-resources. There should be a proper internet connection, followed by other allied equipment to ensure that their clientele may not face the difficulty in accessing the e-resources. Library professionals have to play a far greater role in imparting information search and

retrieval techniques among their clientele. User education and user awareness is to be drawn towards the electronic resources available in the field of nursing. Interpersonal relationship & social networking among the professionals is proving a very vital tool to learn, use, access and dissemination of information. Apart from all these, it is the constant and continuous research in the field of nursing which can act as a supplement in enriching& adding to the existing lot of literature.

REFERENCES

- Andrews, J. E., Pearce, K. A., Ireson, C., & Love, M. M. (2005). Information-seeking behaviors of practitioners in a primary care practice-based research network (PBRN). Journal of the Medical Library Association, 93(2), 206.
- Ansari, M. N., & Zuberi, B. A. (2010). Use of electronic resources among academics at the University of Karachi. Library Philosophy and Practice (e-journal), (June), 385. http://digitalcommons.unl.edu/libphilprac/385/
- Asemi, A. (2005). Information Searching Bahits on Internet Users: A case Study on the Medical Sciences University of Isfahan, Iran. Webology, 2(1).
- Atakan, C., Atilgan, D., Bayram, Ö., & Arslantekin, S. (2008). An evaluation of the second survey on electronic databases usage at Ankara University Digital Library. Electronic Library, The, 26(2), 249-259.
- Berg, S. A., Hoffmann, K., & Dawson, D. (2010). Not on the same page: undergraduates' information retrieval in electronic and print books. The Journal of Academic Librarianship, 36(6), 518-525.
- Bhat, I., & Mudhol, M. V. (2014). Use of E-resources by Faculty Members and Students of Sher-E-Kashmir Institute of Medical Science (SKIMS). DESIDOC Journal of Library & Information Technology, 34(1), 28-34.
- Björkström, M. E., Johansson, I. S., Hamrin, E. K., & Athlin, E. E. (2003). Swedish nursing students' attitudes to and awareness of research and development within nursing. Journal of Advanced Nursing, 41(4), 393-402.
- Carole, A. E., Katherine, A. O. L., Kathryn, L. R., & Charles, K. H. (2003). The Internet and access to evidence: how are nurses positioned? J Adv Nurs, 42(1), 73-81.
- Case, D. O. (2012). Looking for information: a survey of research on information seeking, needs, and behaviour (3rd Ed.). Bingley: Emerald Group
- Casebeer, L., Bennett, N., Kristofco, R., Carillo, A., & Centor, R. (2002). Physician internet medical information seeking and on-line continuing education use patterns. Journal of Continuing Education in the Health Professions, 22(1), 33-42.
- Chen, K.-n., & Huang, I.-T. (2012). Library Use by Medical Students Engaging in Problem-based Learning: A Taiwanese Case Study. Libri, 62(3), 248-258.
- Cogdill, K. W. (2003). Information needs and information seeking in primary care: a study of nurse practitioners. Journal of the Medical Library Association, 91(2), 203.
- Cozin, S. K., & Turrini, R. N. T. (2008). Evaluation of products and services of a nursing library: user satisfaction. Rev. latinoam. enferm, 16(4), 758-764.
- Crawford, J., De Vicente, A., & Clink, S. (2004). Use and awareness of Electronic Information Services by students at Glasgow Caledonian University a longitudinal study. Journal of librarianship and information science, 36(3), 101-117.
- De Groote, S. L., Shultz, M., & Blecic, D. D. (2014). Information-seeking behavior and the use of online resources: a snapshot of current health sciences faculty. Journal of the Medical Library Association: JMLA, 102(3), 169-176. doi: 10.3163/1536-5050.102.3.006
- Dee, C., & Stanley, E. E. (2005). Information-seeking behavior of nursing

students and clinical nurses: implications for health sciences librarians. Journal of the Medical Library Association, 93(2), 213-222.

- Dhanavandan, S., Esmail, S. M., & Nagarajan, M. (2012). Access and Awareness of ICT Resources and Services in Medical College Libraries in Puducherry. Library Philosophy and Practice (e-journal). http://digitalcommons.unl.edu/libphilprac/750/

- Farokhzadian, J., Khajouei, R., & Ahmadian, L. (2015). Information seeking and retrieval skills of nurses: Nurses readiness for evidence based practice in hospitals of a medical university in Iran. International journal of medical informatics, 84(8), 570-577.

- Franklin, B., & Plum, T. (2004). Library usage patterns in the electronic information environment. Information Research, 9(4), 9-4.

- Hoppenbrouwer, J., & Kanyengo, C. W. (2007). Current access to health information in Zambia: a survey of selected health institutions. Health information and libraries journal, 24(4), 246-256.

- Ibrahim, A. E. (2004). Use and user perception of electronic resources in the United Arab Emirates University (UAEU). Libri, 54(1), 18-29.

- Jackson, R., Baird, W., Davis-Reynolds, L., Smith, C., Blackburn, S., & Allsebrook, J. (2007). The information requirements and information-seeking behaviours of health and social care professionals providing care to children with health care needs: a pilot study. Health Information & Libraries Journal, 24(2), 95-102.

- Jamali, H. R., Nicholas, D., & Huntington, P. (2005). The use and users of scholarly e-journals: a review of log analysis studies. Aslib Proceedings: New Information Perspectives, 57(6), 554-571.

- Jones, S. L., & Cook, C. B. (2000). Electronic journals: are they a paradigm shift. Online Journal of Issues in Nursing, 5(1), 1.

- Kahouei, M., Ahmadi, Z., & Kazemzadeh, F. (2014). Evaluation of organizational support for use of online information resources in nursing care. Journal of Evidence-Based Medicine, 7(4), 252-257. doi: 10.1111/jebm.12124

- Kamel Boulos, M. N., & Wheeler, S. (2007). The emerging Web 2.0 social software: an enabling suite of sociable technologies in health and health care education 1. Health Information & Libraries Journal, 24(1), 2-23.

- Kaplan Jacobs, S., Rosenfeld, P., & Haber, J. (2003). Information literacy as the foundation for evidence-based practice in graduate nursing education: a curriculum-integrated approach. Journal of Professional Nursing, 19(5), 320-328.

- Kelley, K. B., & Orr, G. J. (2003). Trends in distant student use of electronic resources: A survey. College & Research Libraries, 64(3), 176-191.

- Kingrev, K. P. (2002). Concepts of information seeking and their presence in the practical library literature. Vol. 4, No. 2. Library Philosophy and Practice, 4(2). www.webpages.uidaho.edu/~mbolin/kingrey.html

- Kutlthau, C. C. (2004). Seeking Meaning: A Process Approach to Library and Information Services (2nd Ed.). Westport: Libraries Unlimited.

- Kwafoa, P. N. Y., Imoro, O., & Afful-Arthur, P. (2014). Assessment of the use of electronic resources among administrators and faculty in the University of Cape Coast. Library Philosophy and Practice (e-journal), (June). http://digitalcommons.unl.edu/libphilprac/1094/

- Lakshmana Moorthy, A., & Karisiddappa, C. (1996). Electronic publishing: Impact and implications on library and information centres. Paper presented at the 15th SIS Annual Convention & Conference- Digital libraries: Dynamic store house of digital information, Bangalore.

- Lancaster, F. W. (1989). Electronic Publishing. Library Trends, 37(3), 316-325.

- Lathey, J. W., & Hodge, B. (2001). Information seeking behavior of occupational health nurses. How nurses

keep current with health information. AAOHN journal: official journal of the American Association of Occupational Health Nurses, 49(2), 87.

- Madsen-Rihlert, C., Nilsson, K., & Stomber, M. W. (2012). Information retrieval - Swedish specialist student nurses` strategies for finding clinical evidence. Open Nurs J, 6, 47-52. doi: 10.2174/1874434601206010047

- Marchionini, G. (1995). Information seeking in electronic environments. Cambridge: Cambridge University Press.

- Mawindo, D., & Hoskins, R. (2008). Use of print and electroni resources by students at the University Of Malawi College Of Medicine Mousaion, 26(1), 89-110.

- McCaughan, D., Thompson, C., Cullum, N., Sheldon, T., & Raynor, P. (2005). Nurse practitioner and practice nurses' use of research information in clinical decision making: findings from an exploratory study. Family Practice, 22(5), 490-497.

- McNeil, B. J., Elfrink, V. L., Bickford, C. J., Pierce, S. T., Beyea, S. C., Averill, C., & Klappenbach, C. (2003). Nursing information technology knowledge, skills, and preparation of student nurses, nursing faculty, and clinicians: a U.S. survey. J Nurs Educ, 42(8), 341-349.

- Metzger, M. J., Flanagin, A. J., & Zwarun, L. (2003). College student Web use, perceptions of information credibility, and verification behavior. Computers & Education, 41(3), 271-290.

- Miller, L. C., Graves, R. S., Jones, B. B., & Sievert, M. C. (2010). Beyond google: finding and evaluating web-based information for community-based nursing practice. Int J Nurs Educ Scholarsh, 7, Article31. doi: 10.2202/1548-923X.1961

- Morse, D. H., & Clintworth, W. A. (2000). Comparing Patterns of Print and Electronic Journal Use in an Academic Health Science Library. Issues in Science and Technology Librarianship, Fall.

- Okiki, O. C. (2012). Electronic Information Resources Awareness, Attitude and Use by Academic Staff Members of University of Lagos, Nigeria. Library Philosophy and Practice.

- Pyne, T., Newman, K., Leigh, S., Cowling, A. N., & Rounce, K. (1999). Meeting the information needs of clinicians for the practice of evidence-based healthcare. Health Libraries Review, 16(1), 3-14.

- Rasch, R. F. R., & Cogdill, K. W. (1999). Nurse practitioners' information needs and information seeking: implications for practice and education. Holistic nursing practice, 13, 90-97.

- Ray, K., & Day, J. (1998). Student attitudes towards electronic information resources. Information Research, 4(2). http://www.informationr.net/ir/4-2/paper54.html

- Renwick, S. (2005). Knowledge and use of electronic information resources by medical sciences faculty at The University of the West Indies. Journal of the Medical Library Association, 93(1), 21-31.

- Schell, M. B. (2006). The use of free resources in a subscription-based digital library: a case study of the North Carolina AHEC Digital Library. Biomedical digital libraries, 3(1), 9.

- Sethi, B. B., & Panda, K. C. (2012). Use of E-Resources by Life Scientists: A Case Study of Sambalpur University, India. Library Philosophy and Practice. http://digitalcommons.unl.edu/libphilprac/681/

- Shorten, A., & Crookes, P. (2001). Developing information literacy: a key to evidence-based nursing. International Nursing Review, 48(2), 86-92.

- Tannery, N., Epstein, C. W., & Gadd, C. (2007). Hospital nurses' use of knowledge-based information resources. Nursing Outlook, 55(1), 15-19.

- Verhey, M. P. (1999). Information Literacy in an Undergraduate Nursing Curriculum: Development, Implementation, and Evaluation. Journal of Nursing Education, 38(6), 252-259.

- Wahoush, O., & Banfield, L. (2014). Information literacy during entry to practice: Information-seeking behaviors in student nurses and recent nurse graduates. Nurse Educ Today, 34(2), 208-213. doi: 10.1016/j.nedt.2013.04.009
- Wiberley, S. E., & Jones, W. G. (1989). Patterns of information seeking in the humanities. College & Research Libraries, 50(6), 638-645.
- Willmer, M. (2007). How nursing leadership and management interventions could facilitate the effective use of ICT by student nurses. J Nurs Manag, 15(2), 207-213. doi: 10.1111/j.1365-2834.2007.00751.x
- Wilson, T. D. (1981). On user studies and information needs. . Journal of Documentation, 37(1), 3-15.
- Wozar, J. A., & Worona, P. C. (2003). The use of online information resources by nurses. Journal of the Medical Library Association, 91(2), 216-221.
- Zafar, A. (2013). Students' Perception of Electronic Resources in MBBS Nursing Aga Khan University. Pakistan Library & Information Science Journal, 44(1), 31-37.

****