ORIGINAL ARTICLE

Attitude towards Utilization of e-Resources of Medical Images among Health Care Professionals

GHULAM FARID[1], ATTAULLAH KHAN NIAZI[2], MUHAMMAD MUNEEB[3], SADAF IFTIKHAR[4]
[1]Senior Librarian, Shalamar Medical & Dental College, Lahore & [2]PhD Scholar- DoIM, University of the Punjab, Lahore
[2]Assistant Professor, Department of Cardiovascular Surgery, Shalamar Medical & Dental College, Lahore.
[3]Assistant Professor, Department of Cardiology, Shalamar Medical & Dental College, Lahore
[4]Library Teacher, The City School, Lahore
Correspondence to Ghulam Farid, Email: css_bcs@yahoo.com

ABSTRACT

Aim: Medicine is deeply depending on medical images. Medical professionals used medical images particularly digital medical images for education, research and clinical decisions.
The aim of this study is to investigate the utilization of medical image e-resources among the medical professionals of Lahore.
Methods: The study is based on qualitative research design and in-depth semi-structured interviews of twenty medical professionals (Professor, Associate, Assistant professor, and Consultants) were conducted. The interviewees were purposely selected from various basic health and clinical health science departments of Shalamar Medical & Dental College and Shalamar Hospital, Lahore. Data were collected by using interviews schedule. Validity of interview guide was ensured by expert review of interview schedule by field experts.
Results: A large number of participants were used both formats of resources (print and electronic). Hundred percept of medical professionals were used Google image search for seeks of digital image and this is favorite source. Most of the clinical medical professionals were used up-to-date application, they searched quickly and easily for wards round, clinical decisions, early recovery of the patient, training and research purpose in contrast most of the basic health professionals used the college library, print collections, personal collections and Google images for their teaching, research and education. Similar the large number of the clinical sides they were used details images for their clinical decisions, patient recovery, teaching and research on opposite basic medical professionals were used the general images and a small group were used detailed and specialized images for teaching the students.
Conclusion: The research is unique in this regard as there is a dearth of literature on the research area particularly in Pakistani context.
Keywords: Medical faculty, health professionals, image search, Pakistan,

INTRODUCTION

Digital images assets are specifically fundamental in areas which comprise of medicine, where electronic imaging has develop as an energetic section and in a large number of application within modern clinical settings[1]. As indicated by a researcher Eakins [2], clinical pictures are used by variety of patrons, such as researcher, clinicians, student and lectures in basic and clinical sciences disciplines to seek and grip on the research, medical subject knowledge and clinical experiences.

The researcher [3] explored that the data looking for method is situational, relevant and interesting to the information seeker; the medical professional's knowledge and expertise regarding medical image search, utilization is most important to development design of the digital image retrieval structure for their clinical decisions, teaching and knowledge.

Large numbers of studies were conducted to investigate the phenomenon of medical image resources in developing countries and similar a large number of previous studies investigated that a huge number of information resourced used by medical professionals [4, 5, 6]. The findings of study shows that the large number of the medical professionals used the medical resources such as text books, medical literature and databases, they also discussed about seeking of image retrieval with their colleagues. The researcher also conclude d that medical practitioner in UK used the UP-TO-DATE to find the quick answered for clinical decisions. The researcher [7, 8] explored that the types of images required by the artist students and users, the results shows that artist students looked main information about images from public libraries, personal collections. Researchers [9] explored that studio and history's professors gained the variety of images from libraries, personal collection, professor's slides, departmental libraries, books, museums and magazines. Similar [10] concluded that user fulfills their need for seek the images they retrieved from

----

databases, libraries, own collections and magazines. Author [11] conducted a study on 20 participants who used images resources from different disciplines artists, historian, archaeologist and architects. The results of the study shown that most of the participants used different kind of image resources such as databases, websites, personal collection and magazines the author also conclude the participants used online resources for obtained the images. Another researcher Paling [12] explored the usage of medical image resources by 34 clinicians and dental faculty members. The results showed that most of the participants searched images from different variety of sources like databases, search engines, e-books, teacher's slides, electronic journals, personal collection, and libraries. Most of the participants preferred the searched images from online sources and physical slides. The findings also described that the participants most preferred and accessed the high quality image with had metadata.

The enhance the quality of medical education, Government of Pakistan gives the opportunity to access and read medical literature, research work, books and journals through HEC National Digital Library Pakistan. Therefore medical institutes are electronically linked with Pakistan Educational Research Network (PERN). In medial institutes, the libraries are well organized with latest medical journals and books [13, 14, 15]. In Pakistan environment the libraries give access of resources and offered the services to the medical professionals used the digital resources for seek the medical images for their knowledge, research, teaching, practice and clinical decisions.

Statement of the Problem: In this modern era the most studies conducted in European countries on medical image resources used by medical professionals to seek the knowledge, enhance the research skills, teaching and clinical decisions[5, 6]. There is no study conducted in Pakistan to explore the attitude of medical professionals regarding seek the medical images resources for research, education, clinical practice and research purpose. The researcher will fill the gap through studies and contribute a study from Pakistan settings. This phenomenon is important in Pakistani surroundings.

The key objective of this study is to explore the attitude of medical professionals regarding utilizing the resources for seeks of medical images.
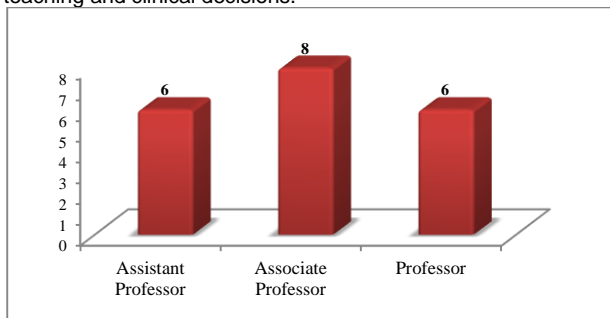1. To identify the demographic and professional attributes by medical professionals.
2. To explore the usage of medical images resources by health professionals.
3. To discover the problem facing regarding seeks the images resources by medical professionals.

This study also investigated the images resources which used by medical or health professionals for their education, research, and solving the problems in clinical decisions.

METHODODOLOGY

The study is based on qualitative research design to explore the searching behavior of medical images from the digital resources as suggested (Marglaughlin & Sonnchnald, 2002) and (Ingwesen & Jarvelin, 2005) after permission from IRB. This study also carried out the pragmatic approach used the grounded theory through in-depth interviews of phenomenon of medical image resources as adopted (Stravrs & Corbin, 1998).

The population of this study was the senior medical faculty of Shalamar Medical & Dental College and attached hospital Shalamar Hospital, Lahore, Pakistan. The purposive sampling was used for obtained the data, the researcher selected 20 senior faculty members from three basic medical sciences (Anatomy, Community Medicine and Forensic Medicine) and clinical medical sciences (Medicine, Radiology and Cardiology) departments which were mostly used the medical images for their research, education, teaching and clinical decisions.

The semi structured instrument (interview guide) was developed with the guidance of field expert, medical field expert. In this study the researcher took an appointment from senior medical professionals and personally visits to the participants for in-depth interviews. The researcher ensured about the ethical issues regarding data were used for study purpose and after analysis data checked by the participants.

RESULTS AND DISCUSSION

After the data collection from senior faculty members, total number of medical professionals were 20 such as assistant professors 6, associate professors 8 and professors 6 from three basic and clinical medical sciences departments at Shalamar Medical & Dental College and Shalamar Hospital. At shalamar hospital and SMDC the health professionals' have MBBS degrees with specialization of FCPS, M. Phil and Ph.D.

The most of the participants have working experiences between 10 to 30 years in teaching and clinical side. The maximum medical professionals used the both formats print and electronic for their education, teaching, research and clinical decisions. The preferences of medical professionals regarding format of the resources, most of the participants were preferred the electronic resources and maximum number of the participants also

like the print resources; they need the hybrid resources for their research, education, teaching, training and clinical decisions.
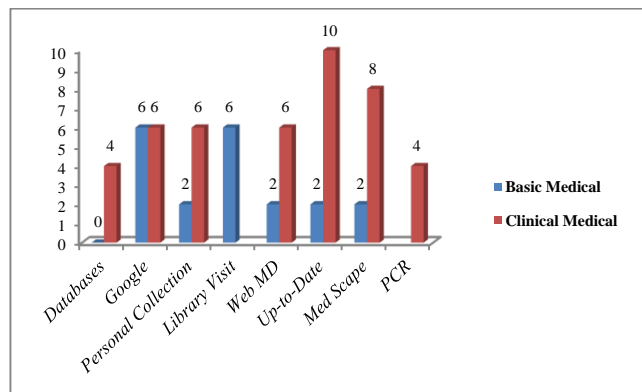
Hundred percent of the participates were electronic sources for searched the medical images and seven participants were used print format they used library books and journals, used personals collection of books and departmental library to captured the images for class lectures, clinical decisions and research purpose.

The most of favorite sources for acquired the medical images by the health professionals was Google Image. Most of the participants from basic and clinical sciences preferred Google image. Most clinicians used the authentic source up-to-date for image utilized and decision making in clinical cases. The retrieval system of image searched in up-to-date is more fast and easy. The medical professionals from basic and clinical sciences almost used different sources for image search such as personal collection, discussion with colleges, Google search and printed sources. On the opposite side most of the basic sciences faculty preferred the print sources and visit the college library for searched the images from books, atlas and journals.

The most preferred images by medical practitioners and basic sciences were detailed image and clinical faculty used the clinical image for their practice, teaching and patient early recovery. In the SMDC and Shalamar Hospital the medical professionals from basic and clinical sciences attended more than five to ten workshops on searching and literature.

The preferences and utilization of library resources of Prof. Muhammad Akhtar Khan Library availed by basic health sciences faculty for their education, research work, and teaching as compared to clinical faculty because clinical faculty don't have time to visit the library due to tough schedule on duty and look after the patients. The mostly used resources knew by basic medical faculty were e-books, e-journals, printed material including books, journals, dictionaries and atlas, databases, library guide and DVDs on the opposite side the clinicians preferred the databases and they have access of up-to-date in their mobiles, so they don't have time to visit the library. The most of the faculty members from basic and clinical used the images for the research, teaching, training purpose opposite side the clinical faculty more used the detailed images for practices and clinical decisions.

In this study the most of the clinical sciences faculty preferred sources for image searched like up-to-date, Med scape, Web MD, personal collection, Google search and databases for their education, teaching, clinical decisions and early patient recovery. On the opposite side the basic medical faculty used the sources for image search such as Google, Library used and some of the faculty members from basic disciplines normally used Web MD, up-to-date for their education, research and teaching purpose.

In this study the problems faced by basic and clinical faculty for retrieval the images as mentioned below:
1. Internet problem faced by basic and clinical health professionals.
2. Wrong information during search the image (some time).

3. Time consuming for search the image by clinicians.
4. Copy right issue for both faculty members.
5. Paid articles for both faculty members.
6. Different sizes (small, large) of images problem faced by both basic and clinical.
7. Internet facility for clinical faculty.

CONCLUSION

The basic and clinical experts focus the exploration of certain of the validity of images when they utilized images from their own print and electronic collection, libraries, databases, Google image, Up-To-Date, Med-Scape, subject guide and they also searched for images in books, journals, and print collection.

This study also recommends that the e-resources developers, publishers, policy makers and authors should focus on quality and high resolution of the medical images is important for end users.

Conflict of interest: Nil

REFERENCES

1. Glatard T, Montagnat J, Magnin IE. Texture based medical image indexing and retrieval: application to cardiac imaging. InProceedings of the 6th ACM SIGMM international workshop on Multimedia information retrieval 2004 Oct 15 (pp. 135-142).
2. Eakins JP, Graham ME. Content-based image retrieval, a report to the jisc technology applications programme. Institute for Image Data Research, University of Northumbria, Newcastle.
3. Jamali, H.R., Sedghi, S., Sanderson, M. and Clough, P., 2011, November. Medical image resources used by health care professionals. In *Aslib Proceedings*. Emerald Group Publishing Limited.
4. Shelstad KR, Clevenger FW. Information retrieval patterns and needs among practicing general surgeons: a statewide experience. Bulletin of the Medical Library Association. 1996 Oct;84(4):490.
5. Gorman PN. Information needs of physicians. Journal of the american society for information science. 1995 Dec;46(10):729-36.
6. Covell DG, Uman GC, Manning PR. Information needs in office practice: are they being met?. Annals of internal medicine. 1985 Oct 1;103(4):596-9.
7. Sklar HF. Why make images available online: User perspectives. Collection management. 1998 May 27;22(3-4):113-22.
8. William Hersh MD, Jeffery Jensen BS. A Qualitative Task Analysis of Biomedical Image Use and Retrieval. . MUSCLE/ImageCLEF Workshop 05, September, Vienna, Austria, pp. 11-16.
9. Cobbledick S. The information-seeking behavior of artists: Exploratory interviews. The Library Quarterly. 1996 Oct 1;66(4):343-72.
10. Hemmig W. An empirical study of the information- seeking behavior of practicing visual artists. Journal of Documentation. 2009 Jul 24.
11. Beaudoin JE. *An investigation of image users across professions: a framework of their image needs, retrieval and use* (Doctoral dissertation, Drexel University).
12. Paling S, Miszkiewicz M. Digital resources for dentistry database: A needs assessment. Proceedings of the American Society for Information Science and Technology. 2005;42(1).
13. Said. Accessing Electronic Information: A Study of Pakistan's Digital Library, International Network for the availability of Scientific Publications (INASP) 2006. Oxford, 95-115.
14. Ramzan M, Singh D. Status of information technology applications in Pakistani libraries. The Electronic Library. 2009 Aug 7.
15. HEC . National digital library: available resources, e- databases 2012. Available at
16. www.digitallibrary.edu.pk/resources.php (accessed on 10 January, 2020).