

Revisiting the Anthology of Literatures on the Rise of Medical Libraries across Time and Space

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Abstract

Medical information is generally stored in medical libraries serving as repository of scientific studies for health benefits. This study is centered on revisiting the anthology of literature on the rise of medical libraries across time and space. The study argues that the field of medical libraries grew in series of time and various spaces across region of the world. The study adopted the qualitative design to look into the historical development of medical libraries across time and space with emphasis on the deductive method from the global, regional to local perspectives. It deals on exploration, description, and interpretation of events and abstract concepts on the rise of medical library brought by technology. The study also pointed the role of Saudi Arabia in the field of Medical Library services that is substantially improving due to government funding and as aided by latest technology envisioning Saudi Arabia as a major power house in medical research in the future.

Keywords: Medical Library, Medical Library Services, Medical Library Studies, Library, Medical Librarian

Introduction

There is a growing demand in the standards and services in the field of library science, the creation of Medical Libraries across time and space is a global demand in providing quality education for health professionals to keep them equip in the real world of clinical science. The rise of medical libraries took shape in various stages of time and spaces across countries, region, and the world. This study is a revisit to various anthologies of literature pertaining to medical libraries of the world with application of deductive method as it leads towards the Asian context of medical libraries and strong emphasis of Saudi Arabia participation on improving the field of medical library. This field is being challenge by unprecedented development in the field of Information Technology and Artificial Intelligence that will soon redefine the concept of Medical Library Science both as a field of study and unit facility of the academia. Government support in Medical Libraries is an essential factor to attract future medical doctors and clinicians for excellent scientific researches, diagnosis and medical treatment in building a healthy society. Saudi seeks to be a leading power house of medical doctors and medical clinicians through the establishment of various medical libraries across the country. This vision shall materialize across time and spaces as needed by the society represented by the academia as a scientific arm of the government. This research demonstrates the future of medical libraries in Saudi Arabia making it as a major center for medical researches, medical diagnosis and medical treatment in the Asian region. The study will certainly attract scholars from across the globe in understanding the uniqueness and complexities of medical libraries across Saudi Arabia.

Statement of the Problem

This paper on ‘Revisiting the Anthology of Literature on the Rise of Medical Libraries Across Time and Space’ specifically dealt the following concepts on;

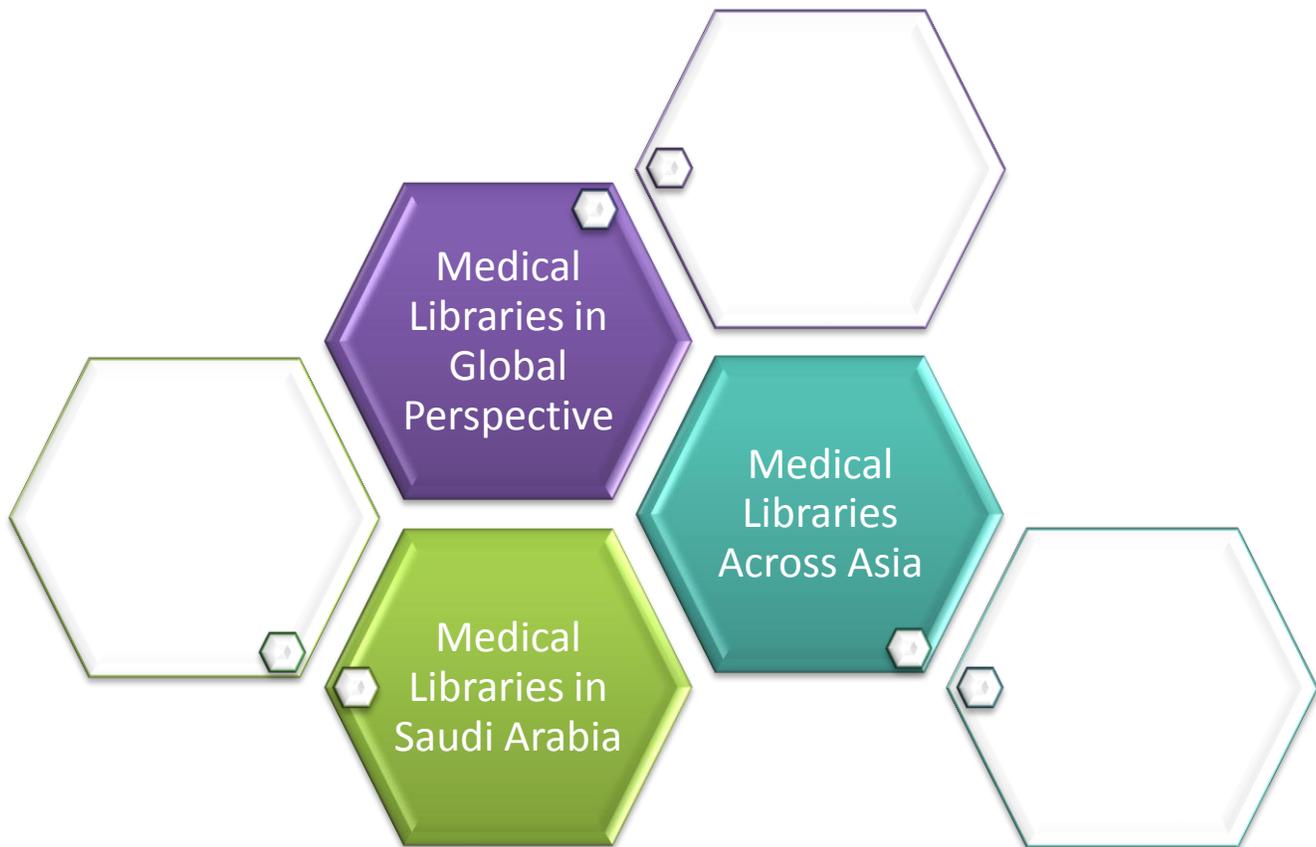
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One, is to explore the narratives on the growth and development of Medical Libraries in perspective particularly on the setting the global standards; two, conduct comparative analysis on the medical libraries across Asia particularly on the issues on training dynamics among developed and developing economies; and third, synthesize studies on medical libraries in Saudi Arabia as to its impact in reinventing the future of medical education.

Framework

The conceptual framework was designed into three significant elements related to medical libraries. The analysis of the data is guided by the framework in accordance to the statement of the problem creating a concept mapping for substantial presentation of findings.



The first concept is centered on exploring the narratives on the growth and development of Medical Libraries in Perspective particularly on the Setting the Global Standards. This concept intends to examine the historical development of medical library across series of time or period in various spaces of the globe particularly that of western orientation that created a global impact in medical library. The second concept is centered on comparative analysis on the Medical Libraries Across Asia particularly on the Issues on Training Dynamics among developed and developing economies. This concept is focus on the selected Asian libraries both from developed and developing economies providing balance information on their best practices and areas for improvement in time series and various spaces. The third concept is on Synthesizing studies on Medical Libraries in Saudi Arabia as to its impact in Reinventing the Future of medical education. This concept will emphasize the role of Saudi Arabia in the field of Medical Library Science as discipline. This particular concept will position Saudi Arabia as an emerging entity in the field of Medical Library Science (MLS).

Methodology

This paper employed Qualitative Research Design (QRD) specifically on the application of expository writing. The focus of qualitative design in this research is to look into the historical development of medical libraries across time and space. It dealt on exploration, description, and interpretation of events and abstract concepts on the rise of medical library brought by technology. It has designed characteristics such as flexible, evolving and emergent base on the given data in various stages of time and space.

In qualitative research, the researcher is the main instrument of the study in acquiring the needed data. This requires the researcher to conduct hands on field work and immersion in various libraries on the introduction of technology. The variables in qualitative are needed for the gathering of historical information substantially, this includes issues and practice dynamics across time and space which pressured the rising needs on technological services and advancement. Through qualitative the search of empirical reasons is essential in establishing the significance of Medical Library development.

Discussion and Presentation of Findings

Perspectives of medical libraries: establishing global standards

The historic tablets dated back to the year 2000 B.C. identified the first medical writings recorded. The history defines medical library as a collection of writings related to health during ancient and medieval periods and demonstrates the dependence of progress or diminution of attitudes towards learning and knowledge. Among the oldest medical schools in the world there are (1) University of Bologna - School of Medicine and Dentistry - 1081, (2) Queen Mary Barts and the School of Medicine and Dentistry of London - 1123, (3) University of Montpellier - Faculty of Medicine (1181) (4) University of Oxford - Division of Medical Sciences (1096) (5) University of Florence-School of Human Health Sciences (1123) (6) University of Padua-Department of Medicine-Dimed (1222) (7) University of Siena School of Medicine (1240) (8) University of Coimbra-Faculty of Medicine (1290) (9) University of Perugia-Faculty of Medicine (1308) (10) University of Pisa-Faculty of Medicine (1343).

The structure of medical libraries took shaped during 1500 with the scientific progress and changes among communities and states are an examples of the space of study libraries. The rise of medical libraries in the old American continent is anticipated in the era of collections of medical resources from public libraries at the beginning of the 20th century (Birchette, K, 2018). In the field of Science of Library and Information Technology, the Medical Library is designed for doctors and other areas of health professionals in the search for information, discovery, and innovation for health science is influenced by various elements in time and space. The National Library of Medicine of the United States (NLM) is the largest biomedical library in the world and gathers and provides access to the best health information in the world. The largest medical library in Europe is the National Library of Medicine of Germany (ZB MED), which also has collections in the fields of nutrition, agriculture and environmental sciences. The oldest medical school in the United States is the School of Medicine of the University of Pennsylvania, founded in 1765. After this date, all other medical schools in the United States were founded.

Meanwhile, The Wellcome Library (England) is based on the collection formed by Sir Henry Wellcome (1853-1936), as a business magnate he was able to establish significant medical collections of the 20th century. His collection contains printed materials on health and scientific literature from the fifteenth century to the present day, including special collections on ephemeral books. The library included thousands of health monographs, anatomical atlases, pharmacopoeias and about 20,000 items of health related material, as well as an increasing number of electronic materials covering a wide range of topics including popular science, health management, biomedical, health policy, research ethics, scientific studies and public policy to science.

These are among the largest medical libraries in the world; (1) National Library of Medicine, Maryland, USA UU With 8 million books (2) State Medical Library of Russia, Moscow with 5.2 million books (3) National Library of Medicine of Germany, Cologne with 2 million books (4) Harvard University Medical Library, Cambridge with 1, 7 million books (5) Library of the New York Academy of Medicine with 600,000 books (6) Library of the National Academy of Medicine, Paris with 500 books (7) Library of the School of Medicine, Yale University, Connecticut with 4490T books(8) Library of the Royal Society of Medicine, London with 413T books (9) Karolinska Institute Library, Stockholm with 360T books and (10) National Medical Library, Prague with 115T books. The largest medical library in Asia is the Chinese Academy of Medical Sciences in Beijing, while the Canadian Institute of Scientific and Technical Information in Ottawa is the largest biomedical and scientific library in the world. These are examples of how the Medical Library changes in time and space, due to the needs of education as a fundamental need to improve health services in society.

Texas A&M medical schools and departments have offices throughout the state. The library of medical sciences (MSL) began distributing six Kindle books in the library building in the spring of 2010 and continued to circulate until the devices were consumed.

" There was a small but constant use over time. In the fall of 2010, MSL librarians observed users about the interest in removing the iPad 2 with this entry, MSL started distributing two original iPads in May 2011, which, like the Kindle, didn't have much constant for several years.

Contemporary studies on the science of medical libraries focus mainly on technologies such as the study on the evaluation of an iPad loan program in an academic medical library: a case study "by Suzanne Shurtz, Robin Sewell, T. Derek Halling, Becky McKay and Catherine Pepper at quarterly medical referral services She says, an academic medical library has extended its iPad loan service to several university libraries and performed a service evaluation loaded with medical and educational applications were provided during Two weeks of five university campuses: statistics on the circulation of devices were followed and users were asked to complete an online survey about their experience. The data was collected and analyzed over 11 months. Library on the best way to adapt the service, including resources that will be added to the iPad, and the decision to publish devices on campus with more frequent use. This is an evidence based result in monitoring circulation data using iPad on managing request as essential in determining cost.

Another contemporary study on Medical Library is on "Community Engagement at an Emerging Academic Medical Library: A Three-Pronged Outreach Model" by Stephanie M. Swanberg, Misa Mi, Keith Engwall & Nancy Bulgarelli published by the Medical Reference Services Quarterly. According to Oakland University William Beaumont School of Medicine (OUWB) when establishing a medical library there are many priorities such as space management, space designs, collections, information system, curriculum, web presence and staff. This requires serious planning for both long term and short term including fundraising metrics. A particular model must be adopted by the medical library in making it flexible with other libraries for resource sharing, man power, researchers and experts.

Medical Libraries Across Asia: Issues on Training Dynamics

The variety of levels of development in the countries of Southeast Asia can be appreciated with a simple call of the main ones: Australia, Papua and New Guinea, Indonesia, Japan, the Philippines, Sri Lanka, Thailand, Vietnam, Malaysia, Singapore, Khmer. To describe the situation of the medical library in such a diverse group of countries is to provide a kaleidoscope instead of a photograph. However, this report from the first four meetings of SEAMIC (Southeast Asian Medical Information Center), an organization of medical librarians throughout the area, highlights fundamental similarities and differences. At one extreme of the sophistication of health science libraries are some countries with a tradition of good libraries, either left by their colonial teachers, as in Singapore, or developing a tradition themselves, as in Japan. These countries present the same problems found in western libraries: how to obtain all published publications, library networks, computerization, photocopy restrictions and provision of good indexes in the local literature. At the other end of the scale there are countries without a library tradition, there are no training courses in librarianship, it is not known how libraries can help biomedical work, there are no book and publishing activities, there is no national bibliographic apparatus and there is no fragmentation. Most of the countries described in this document are in an intermediate position between these two extremes, and reading the reports on them offers a good sense of the diversity of people, and the altruistic attempts of many librarians to provide the best help and service. Despite the almost overwhelming odds, other generalizations can be observed. Most Southeast Asian countries have languages that do not use Roman alphabets; In addition, most of the medical literature is printed in languages with Roman alphabets. Several problems arise from this situation: exhaustive efforts must be made to identify publications in the local language for students and other non-experts in foreign languages so that the local language can be included in the catalog; and, since most vulgar journals are not indexed in internationally published indexes, the local bibliographic institute (usually the medical library) must produce an index for this literature. Another generalization that can be made is that the governmental apparatus in the Southeast Asian countries in general has much more impact on the life of the medical library or librarian than in the Western countries. The ingenuity required to obtain foreign currency to buy non-Asian magazines, the frustrations of inefficient or local postal services, and the paperwork required to order or pay for something requires the patience of librarian Job, the Buddha's philosophy and the iron will of a religious fanatic (Urata, T, 1977).

During the 1960s, Japanese medical universities spent a total of six years; Two years for a pre-clinical two-year preclinical period, then a one-year internship will be assigned. The medical library plays an important role in its training, but addresses similar problems throughout the Asian region with the support of medical libraries. Medical libraries in Japan are also challenged by the budget for collections of books, services, and facilities.

Medical professors and students are assigned designated areas for research, but not all collections of medical libraries have access to medical students, there is a barrier in library policy among professors and medical students. Many new medical buildings are now built thanks to the generosity of the Rockefeller Foundation and the Medical Council of China (Broadman, 1962).

This NUS library is one of the oldest special library whose origin dates back to 1905 when the School of State Medicine of the Strait of Malaysia was established (for a History of the Library of Medicine, see the issue of LINUS, NUS of July 1995 (page 6) Bulletin of the library). The medical library serves mainly:

- Alice Lee Center for Nursing Studies
- Pharmacy Department
- School of dentistry
- Saw Swee Hock School of Public Health
- Yong Loo Lin medical school

In addition to students and university staff, the library is also used by hospital doctors, health personnel, general practitioners, medical personnel from the Armed Forces and staff assigned to various government departments, government agencies and scientific organizations. The Chinese Medical University library is located in the Lifu Education Building on the Taichung campus with a collection of over 300,000 volumes and was created in 1958. The 5687.42m² library resources of this structure are available not only for the university but as well as the other stakeholders. The main objective is to provide circulate information to help in the promotion of research activities, teaching and learning as well as patient care, and to facilitate the integration of traditional and Western medicines. The library provides both printed resources and in electronic format, with particular attention to Chinese medicine. The collection covers topics and concepts related to health, medical sciences and medical care. You can also access thousands of external electronic magazines and e-books.

The library of the Medical University of China was founded in 1958; the main thrust of this library is to provide information and services on health for research, teaching, and orientation for the integration of traditional and western medicines. Special attention is being given to Chinese Medicine covering medical sciences and medical services.

The Taichung Hospital Library was opened on June 1982 and merged with the library of the Medical University of China in 2005. The Peikang campus library was opened on October 1985 and provided services including circulation, interlibrary loan and research computing. The Peikang campus branch library and Peikang hospital library were merged in 2002. The main thrust of the library is centered on teaching and research for medical science of its hospital by providing excellent services on clinical education, medical development and medical information.

The Rise of Modern Medical Libraries in the Philippines can be attributed to two British medical librarians in 1986, Nicky Whitsed and Roy Tabor contributed to a workshop for a medical librarian that was sponsored by the Philippine Council for Health Research and Development and by the British Council. The WHO Western Pacific Regional Office (WPRO) is based in Manila and has a modern well-funded library. The Department of Health in the Philippines has a total of 14 medical libraries across the country exclusively for health related research. The F. Herrera Jr. Medical Library of the University of the Philippines-Manila is accredited by the prestigious Association of Philippine Accreditation of Schools, Universities, and Universities (PAASCU). The library is centered on medical health and clinical studies for research and teaching with global impact on its scientific approaches.

The Lung Center Medical Library of the Philippines is the repository of knowledge that offers a range of learning opportunities for both hospital staff and the public. Its main objective is to provide materials and services to meet the needs of all LCP staff, fellows, and consultants regarding patient care, training, research activities and other related information. Before 1998, before the tragic fire that destroyed the LCP, the Medical Library is proud to say that it is one of the most visited sites, which is accessed with a complete collection of information on lung diseases and other related chest diseases. Although with its limited resources at this time, it still provides information and ideas that are fundamental to successfully functioning in current information and the knowledge society.

The Faculty of Medicine and Surgery of the University of Santo Tomas founded in 1871, is the first medical school in the Philippines and is recognized as the oldest school of medicine in Southeast Asia. It has been proclaimed a center of excellence by the Higher Education Commission.

The health sciences library is located on the fourth floor of the Saint Martin de Porres building. This library serves mainly the needs of students of the Faculty of Medicine and Surgery, the Faculty of Nursing, the Faculty of Rehabilitation Sciences, members of the faculty, former students of the UST and researchers off campus.

Medical Libraries in Saudi Arabia: Reinventing the Future

Among the recognized Medical schools in Saudi Arabia are; (1) Alfaisal University (2) Batterjee Medical College (3) Ibn Sina National College for Medical Studies (4) Imam Muhammad ibn Saud Islamic University (5) King Faisal University (6) King Saud bin Abdulaziz University for Health Sciences (7) King Saud University (8) Majmaah University (9) Northern Borders University (10) Qassim University (11) Sulaiman Al Rajhi Colleges and (12) Umm al-Qura University and (13) off course Fakeeh College for Medical Sciences Library. There are 19 cooperative medical libraries in the Arab World sharing medical library databases such as; (1) Ahmed Al- Farsi Library - Bahrain (2) Arabian Gulf University Library - Bahrain (3) Defense Forces Hospital Library - Bahrain (4) Hamed Health Sciences Library - Qatar (5) Health Sciences Center Library - Kuwait (6) King Abdul Aziz University, Faculty of Medicine Library - Saudi Arabia (7) King Fahd Medical City - Health Sciences Library - Saudi Arabia (8) King Faisal Specialist Hospital and Research Center Library -- Jeddah Saudi Arabia (9) King Faisal Specialist Hospital & Research Center Library - Riyadh Saudi Arabia (10) King Khalid National Guard Hospital Library - Saudi Arabia (11) Kuwait Institute of Medical Specialization Library - Kuwait (12) National Medical Library - United Arab Emirates (13) North West Armed Forces Hospital Library - Saudi Arabia (14) PAAET Nursing College Library- Kuwait (15) Royal Hospital Central Medical Library - Oman (16) Saab Medical Library - Lebanon (17) Shaikh Khalifa Medical Center Library - United Arab Emirates (18) Sultan Qaboos University Medical Library - Oman and (19) Tawam Hospital Medical Library United Arab Emirates according to Health Sciences Center Library Administration of the Kuwait University.

The study on "Central Medical Library In Saudi Arabia: Establishment and Prospective Development" by Mohammed A. Marghalani published by Cyberians Journal centered on the usefulness of the collections and services provided by the CML, it was found that there is a need to strengthen the digital collection and electronic resources of the library. The staff also manifested for proper training on health services research to cater to the information needs of the clients. The study also encourages the interlibrary cooperation with other libraries for resource sharing for future growth of collections and trainings.

The study on "A study of hospital and medical libraries in Riyadh, the Kingdom of Saudi Arabia" by S al-Ogla of the Department of Libraries and Information Sciences, Faculty of Arts, King Saud University (KSU), Riyadh. This is the first such study in Saudi Arabia, and similar investigations are expected to cover the entire kingdom. The purpose of this research was to study the hospital and medical libraries of the city of Riyadh. A questionnaire was prepared and sent to a sample of fifteen libraries, of which twelve responded. The government of Saudi Arabia established nine (75%) of the hospitals that responded, while the private sector created only three (25%). The situation of the library staff, the backbone of the library service, is quite grim in general. This could be due to several reasons. A separate study is needed on the recruitment of professional librarians for hospital and medical libraries. The King Faisal Specialist Hospital has the best staff, with three professional librarians, three paraprofessionals and three non-professionals. The military hospital library has five professional librarians, but there are no paraprofessionals and only two non-professionals. King Khalid Hospital has three professional librarians, one paraprofessional and one nonprofessional. In conclusion, libraries are a very important tool to provide quality medical care, because doctors, patients, and students in university hospitals need information. Information is vital and must be current and relevant. Physicians need information from a variety of sources, through their libraries or interlibrary loans.

The paper of Khudair, A. and Bawden, D. (2007) "Health Libraries in Saudi Arabia: analysis and recommendations published in Aslib Proceedings, traces the current health status and library information of medical health in Saudi Arabia that may lead in establishing health models and prototypes. These will provide better health services and health management policies based on information network. It pointed the need to support medical libraries in order to improve health information, trainings and research for better medical services in the future. This incorporates organizational diagnosis and treatment among agencies that has significant role in the development of medical services in the country.

A study conducted by Arif, Makkisibai and Sulaiman (1998) "Interlibrary loan service in the Kingdom of Saudi Arabia: a case study of medical libraries" this study is related to library loans and interlibrary services including resource sharing in Saudi Arabia. Protocols on interlibrary loans and interlibrary services were carefully studied in 1995 which resulted in library models and prototypes on library development. The research revealed that in the last 20 years there was an increased in library loans and library services in Saudi Arabia as part of library development including budget projections and collections (Arif, Makkisibai and Sulaiman, 1998).

Another contemporary study on medical Library in Saudi Arabia is on the "Attitudes of Saudi Arabian Undergraduate Medical Students towards Health Research" by Sara M. Al-Hilali, Eman Al-Kahtani, Babar Zaman, Rajiv Khandekar, Abdullah Al-Shahri, and Deepak P. Edward. The study looks into the attitude of medical students towards medical research and related topics to health science. The introduction of problem based curriculum created a positive impact on medical students' attitudes towards research on health science. The study recommends to further strengthens school policies and programs toward medical research including resource management and facilities of state of the art must be made available for better research access. The most common barriers encountered by medical students as revealed in this study are; mentorship, time, training and methodology.

The Journal of Perspective 2015 presented "The Future of Medical Libraries" by Donald A.B. Lindberg and Betsy L. Humphreys. The study is centered on how the information age influenced the development and services of medical libraries particularly the National Library of Medicine. The information age and digital science impacted the services provided by various libraries across the country. It provided alternatives to both librarians and researchers in various paces and time. Virtual collections are now available to most advance libraries in the world that influence the library space design. There is an information traffic that every library must face at present and at worst in the near future. The research revealed that funding is very important for maintaining the electronic collections and virtual collections as challenge by the discipline of information science will play an interdisciplinary role in medical science. The future of medical libraries is in dependence with information science that will deliver the best medical services and orientation in the society.

Conclusion

The field of Medical Library Science is dominated by western orientation as demonstrated in the discussion and findings of the study. They set the global standard of what makes a medical library in the university and other medical entities. However, selected Asian Medical Libraries are also setting its own parameters in devising modern library facilities and collection standards. However, it is also true that some Asian Medical Libraries are also struggling due to budgetary concerns that will eventually affect the quality of medical education in selected part of the region across time and space. The study also pointed the role of Saudi Arabia in the field of Medical Library is substantially improving due to government funding and continuously improving as aided by latest technology. The improvement of Medical libraries in Saudi Arabia is in consonance to government effort in providing world class medical education and services in the Arab region across time and space from now and beyond. This although, there are no concrete studies on the development of librarians in the kingdom, library services particularly medical library services have flourished with the sustainable support not only from the government itself but as well as the medical facilities such as hospitals and clinic have set up their respective medical libraries to aid the medical services in the kingdom. This was able to realize with the advent of modern technologies and resources at this time that made information resources easily acquired by the use of information technology rather than merely relying on the traditional printed materials.

References

- (2019). Retrieved January 02, 2019, from <http://horizon.hsc.edu.kw/library/index.asp?page=udbpl>
(PDF) Healthcare libraries in Saudi Arabia: Analysis and ... (n.d.). Retrieved from
https://www.researchgate.net/publication/233978248_Healthcare_libraries_in_Saudi_Arabia_analysis_and_recommendations
- 2015 - The Future of Medical Libraries | NEJM. (n.d.). Retrieved from
<https://www.nejm.org/doi/full/10.1056/NEJMp048190>
- al-Ogla S. (1998). A study of hospital and medical libraries in Riyadh, Kingdom of Saudi Arabia. *Bulletin of the Medical Library Association*, 86(1), 57-62.
- Aly, A. (n.d.). Central Medical Library In Saudi Arabia: Establishment and Prospective Development Mohammed A. Marghalani. Retrieved from

- http://www.journal.cybrarians.info/index.php?option=com_content&view=article&id=512:medical-library&catid=241:2011-08-16-08-16-55
- Assessment of an iPad Loan Program in an Academic Medical ... (n.d.). Retrieved from <http://www.tandfonline.com/doi/full/10.1080/02763869.2015.1019743>
- Attitudes of Saudi Arabian Undergraduate Medical Students ... (n.d.). Retrieved from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4746046/>
- Central Medical Library In Saudi Arabia: Establishment ... (n.d.). Retrieved from http://www.journal.cybrarians.org/index.php?option=com_content&view=article&id=512:medical-library
- Community Engagement at an Emerging Academic Medical ... (n.d.). Retrieved from https://www.researchgate.net/publication/327806447_Community_Engagement_at_an_Emerging_Academic_Medical_Library_A_Three-Pronged_Outreach_Model
- Health Sciences Center Library Administration. (n.d.). Retrieved from <http://horizon.hsc.edu.kw/library/index.asp?page=udbpl>
- Inter-Library Loan Service in the Kingdom of Saudi Arabia: A Case Study of Medical Libraries. (2002, May 25). Retrieved from <https://www.sciencedirect.com/science/article/pii/S1057231799901029>
- Japanese Medical Libraries - PubMed Central (PMC). (n.d.). Retrieved from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC197932/>
- Khudair, A., & Bawden, D. (2007). Healthcare libraries in Saudi Arabia: Analysis and recommendations. *Aslib Proceedings*, 59(4/5), 328-341. doi:10.1108/00012530710817555
- Library World Records, 3d ed. (n.d.). Retrieved from https://books.google.com.ph/books?id=G4owDwAAQBAJ&pg=PA91&lpg=PA91&dq=oldest+medical+Library&source=bl&ots=WEBF4-yRgt&sig=NXl6WVTnFRsjXyDfqYl1XwjFOXM&hl=en&sa=X&ved=2ahUKEwjUxYP_yrffAhVbeXAKHcILApQQ6AEwDHoECAkQAQ#v=onepage&q=oldest+medical+Library&f=false
- Medical and health libraries in Southeast Asia: Selected papers from the last four SEAMIC workshops on health documentation. (2018, November 12). Retrieved from <http://www.worldcat.org/title/medical-and-health-libraries-in-southeast-asia-selected-papers-from-the-last-four-seamic-workshops-on-health-documentation/oclc/3913636>
- Medical libraries in the Philippines | Trading Knowledge. (n.d.). Retrieved from <http://occamstypewriter.org/trading-knowledge/2009/03/11/medical-libraries-in-the-philippines/>
- The History of Medical Libraries from 2000 B.C. to 1900 A.D. (n.d.). Retrieved from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC198686/>
- The Rockefeller Foundation. (n.d.). Retrieved from <https://rockfound.rockarch.org/china-medical-board>
- Urata, Seki, & P., N. (1977, October 01). 1977 RA. Retrieved from <http://adsabs.harvard.edu/abs/1977IAUC.3116....3W>
- Vdocument.mx*, <vdocuments.mx/the-future-of-medical-libraries.html>.