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Health Science Information System in India: An Inevitable Knowledge Companion for Medical Professionals

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In the present-day modern world, state-of-the-art technology has turned out to be one of the most significant aspects of healthcare. The technique adopted to manage and effectively maintain knowledge in the area of health science and biomedicine has evolved mainly due to the advancements in computer and communications technology. In the Indian scenario, the information on healthcare system has integrated it into several operational spheres. A persistent stream of latest initiatives has been established to target the imminent problems in the healthcare sector. The propagation of knowledge has transformed as a result of the latest publishing formats, open-access concepts, and institutional repositories. The proliferation of information gateways has made it rather more complicated to access superior-quality health information. A large number of scientists and medical personnel are hardly familiar with the current electronic information formats. Moreover, medical librarians and end- users in India face challenges due to the country's inadequate infrastructure to fulfil the nation's expanding need for health information. This study looks at the situation of health science librarianship as well as the difficulties faced by medical librarians and training programs in India.

Keywords: *Health Information System, Information and Communication Technologies, Health Management Information Systems, Medical Professionals*

0 INTRODUCTION

One of the most critical indicators of a nation's ability to forward both current and future health issues is its capacity of human resource for advancement in health research. Research and healthcare are areas which

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both depend on gaining access to and using high-quality health information, as prompt access to relevant data and information since it is essential to the effectiveness of research output.

Hospital policies, evidence-based procedures, research findings, medical reports, survey reports, case reports, practical guidance, and papers are generated annually in the countless quantities exclusively. The writers and their associated institutes can access a large number of resources since they are either outside the purview of official literature or exclusively open to the medical community.The field of health research has alteredmainly due to the phenomenal advances that have occurred in the Information and Communication Technologies (ICT)[1].This willalso hold a tremendous promise for overcoming conventional obstacles like time and geography that during the earlier stagesimpeded patient care communications. During the recent years, telemedicine, and Health Management Information Systems (HMIS) have emerged as one of the most important concepts for healthcare practitioners.

With the advent of the Internet, a some of the latest and innovative notions in library and information science have emerged: online databases, open-access journals, digital libraries, and institutional repositories. It was experienced in both the situations that a forcefuland a robust infrastructure with IT assistance complimented with rich experience in putting these ideas into practice was considered extremely essential. In order to formulate their ideas into practice, both professionals have primarily relied on their IT staff. The mediator of this scientific knowledge, the so-called librarian, finds it challenging to deal with the issue of multiple document formats based on a variety of platforms in the massive expansion and flow of health science information[2]. In comparison to libraries of other disciplines, health science libraries present more complex problems for library professionals.

This is mainly due to the various categories of health information that are required at various phases of the decision-making process for patient care, such as, for preventative measures, preliminary testing, diagnosis, treatment, research, evidence, problems, and follow-up procedures. Clinicians require up-to-date and thorough information backed by solid evidence at every stage regarding a patient whose condition is conspicuous. The objective of this study is targeted to evaluate the state of India's medical libraries and health science, ICT infrastructure by assessing the current state of the field and offering recommendations for improvement. Most of the major Indian resources for health science information are also listed. Additionally, a few organizations' training programs and workshops are mentioned to prepare health science librarians for the complexities that are expected to come to the fore in India.This study's foundation is a review of the literature for the assessment of the Healthcare Information System (HIS) that was found in libraries and on the internet (www).

1 HEALTH INFORMATION SYSTEM (HIS)

An information system designed to manage medical data is referred to as a Health Information System (HIS). This includes hospital operations management, systems that facilitate healthcare policy decisions, and systems that collect, store, maintain, and transmit a patient's Electronic Medical Record (EMR). Health information systems also comprise systems that handle data on the operations of healthcare providers and organizations. Health information systems routinely access, manage, or store enormous volumes of sensitive data, which enhances security system which is of the utmost importance. One aspect of Health Information Technology is the development of Health Information Systems. Health Information Systems are available to all parties involved in the healthcare sector, such as, patients, doctors, and public health officials. They compile data and organize it in order that healthcare decisions can be made using it.There is almost no difference between the terms, "Electronic Medical Record"or known as (EMR) and "Electronic Health Record" (EHR). An EMRreplaces a patient's paper medical history. Further details regarding examinations, diagnosis, and therapies are available in the Electronic Health Record. It is also devised to share data with other electronic health records so that other healthcare providers can access a patient's medical records[3].

1.1 SOFTWARE FOR PRACTICE MANAGEMENT

The Practice Management software assists medical professionals with routine duties like scheduling and billing. Healthcare providers of all sizes use practice management systems to automate several administrative tasks.

a. MASTER PATIENT INDEX (MPI)

AnMaster Patient Index (MPI) links contrasting patient records from several databases. Every patient registered at a healthcare facility has a record in the index, which also indexes all other patient records. Inaccurate patient information and redundant patient records, which can result in claim denials, are reduced with the usage of MPIs.

b. PORTALS FOR PATIENTS

It is through the use of patient portals that patients can obtain their medical records, including prescription information, lab results, and appointment schedules, online. A few patient portals enable patients to make appointments, obtain prescription refills, and engage in active communication with their doctors[4].

c. REMOTE PATIENT MONITORING (RPM)

Remote Patient Monitoring (RPM)which is also referred to as telehealth,

enables medical sensors to transmit patient data to healthcare providers. For patients with long-term illnesses, it regularly checks blood pressure and glucose levels. The information can be used in a more extensive population health study and is used to identify medical events that call for intervention.

d. CLINICAL DECISION SUPPORT (CDS)

In order to assist medical professionals in making clinical choices, clinical decision support systems examine data from numerous clinical and administrative systems. Predicting of medical events like drug interactions or preparing diagnoses are the two conveniences for the data. These tools filter data and information whichassist doctors in providing individualized patient care.

e. HEALTH INFORMATION SYSTEMS' ADVANTAGES

The management of significant data and efficiency are the two primary goals of Health Information Systems. The primary motivators of Health Information Systems are:

- Analytics of Data: The healthcare sector generates data constantly. The management of population health and lower healthcare costs, health information systems assist in the collection, compilation, and analysis of health data. Patient care can then be enhanced by the examination of healthcare data[5].
- Collaborative Care**:** There arepatients who may require essential care from several medical professionals. Healthcare facilities can access shared health records, which is made possible to Health Information Systems, such as,Health Information Exchanges (HIEs).
- Cost Control**:** Healthcare data interchange via digital networks results in reduction of costs and results in efficacies. Healthcare providers perceive lower costs when regional marketplaces employ health information exchanges to share data. Hospitals use electronic health records to try and achieve similar economies on a smaller scale.
- Management of Population Health: Health information systems are capable of compiling, analysing, and identifying demographic trends from patient data. Additionally, the technique is in reverse. A huge amount of data can be used effectively by Clinical Decision Support systems to assist the medical practitioner in the diagnosis and treatment of individual patients.

2 ICT AND HEALTH SCIENCE INFRASTRUCTURE IN INDIA

During the last several years it has been a witness to a tremendous expansion of India's ICT sector in a number of fields. The Government of India launched

the e-governance program a few years ago; its websites provide updates on the initiative's development. Major recommendations for Health Information Networks and Knowledge Networks among the vast array of programs ranging from education to governance have been made under the direction of Sam Pitroda, the Chairman of the National Knowledge Commission of India. These programs are focused on five main areas: creation, application, services, and access. India's healthcare sector has been undergoing significant transformation, with the integration of ICT playing a pivotal role[6]. Here are some key initiatives and challenges related to ICT and health science infrastructure in India:

2.1 TECHNOLOGY INFUSION AND INFRASTRUCTURE IMPROVEMENTS

i. According to experts, additional infrastructure, improved processes, and the introduction of technology possibly will improve healthcare affordability and accessibility in India.
ii. Through telemedicine and teleconsulting programs supplied over mobile phones, medical expertise may now extend its reach to the underdeveloped rural markets due to the availability of telecom bandwidth[7].
iii. The "Made in India" campaign of the Indian government promotes home production of medical equipment, which drives down the cost of items like implants and stents.

2.2. EXISTING ICT-BASED HEALTH PLATFORMS

i. The *Integrated Illness Surveillance Project (IDSP) Portal*maintains a track of the outbreaks of illnesses.
ii. Maternal and child health care is the main focus of the *Mother and Child Tracking System (MCTS)*.
iii. Data pertaining to health is managed via the *e-HMIS (Electronic Health Management Information System)*.
iv. The *Health and Wellness Centre (HWC) Portal* is anelement of the Ayushman Bharat initiative.
v. The *National Anti-Malaria Management Information System (NAMMIS)* and Nikshay both concentrate on managing malaria and tuberculosis, respectively.

2.3. EMERGING ICT SOLUTIONS

i. Digital LifeCare: An online platform for digital health care.
ii. A comprehensive ecosystem for health data is the National Health Stack (NHS).

2.4. NATIONAL DIGITAL HEALTH MISSION (NDHM)

i. Modern digital health systems, core health data management, and registries for healthcare providers, clinical facilities, and other entities are the goals of the NDHM.
ii. The Indian government launched the NDHM keeping in view the intention to establish a national digital health ecosystem that facilitates health coverage for all. Its primary goals are to provide timely, cost-effective, inclusive, efficient, and protected healthcare services.
iii. The key components of NDHM include:
i. Health ID: An individual's personal identification number that makes it easier to access medical records.
ii. Health Registries are centralized databases that hold a wide range of health-related data.
iii. Health Claims Platform (HCP): Facilitates electronic health information exchange.
iv. Health Data Analytics: Making better decisions with data.
v. Improving remote medical services through the Open Telemedicine and e-Pharmacy Network.

2.5. CHALLENGES AND OPPORTUNITIES

i. India has a huge pool of skilled ICT workers, but it confronts the challenge of integrating technology into healthcare.
ii. Ineffective public health responses and subpar patient care are caused by low ICT adoption.
iii. Technology, however, has an enormous potential to enhance healthcare delivery in terms of quality, efficiency, and accessibility.

2.6. ARTIFICIAL INTELLIGENCE (AI) IN HEALTHCARE

i. Applications of Artificial Intelligence are gaining more popularity in India's healthcare industry.
ii. Personalized treatment, illness prediction, and therapeutic decision assistance are some of these uses.
iii. Data privacy, legal compliance, and ethical issues are among the difficulties.

India is actively utilizing ICT to improve health services and outcomes and to reinforce its health infrastructure; nevertheless, the ultimate success depends on resolving issues and guaranteeing safe deployment. With ICT, the emphasis is moving from "sick care" to wellness and preventive care[8]. Innovations driven by technology are making the healthcare sector more appealing to investors as they expand into second and third-tier economies.

Nonetheless, there is aemerging requirement for greater impetus in the infrastructure, technology, and skilled labour development related to health science information in Indian libraries. The National Knowledge Commission emphasized how important it is for medical education at all levels to have a structured curriculum in health informatics. It is imperative for every medical college in the country to gain access to the basic ICT resources including electronic journals and high-speed Internet[10].

3 ONLINE HEALTH INFORMATION RESOURCES IN INDIA

One of the major concerns for India, the world's most populous country, is health science information systems. Significant technical advancements have already been made in the Indian healthcare, especially in the field of information systems. In the past, the Indian healthcare system entirely relied on experts to be there in person and complete duties by hand. However, technology has usheredthe latest and recent perceptions and developments to the Indian healthcare system, thereby making it possible to track patients even when doctors and other healthcare professionals are not physically present. It is all the more essential to Upgrade their libraries to meet the benchmark criteria for infrastructure, databases, services, and resources which is necessary for medical colleges and other health institutions[11]. The networking and resource-sharing initiatives of these libraries contribute to the improvement of health information accessibility. The hospitals and research institutes in India that receive central funding and are financially stable testify to the success of these advancements. It is questionable that medical facilities in the rural and smaller towns will expand at a similar rate at a faster pace. The National Informatics Center (NIC) and the Indian Council of Medical Research (ICMR) have taken steps to enhance access to national health information. Medical databases are accessible to researchers through the National Informatics Center's Biomedical Informatics Division.

The multi-disciplinary research databases Web of Science and Scopus are extensively utilized. There are a few exceptional academic databases for biomedical research, medicine, and healthcare that offer authentic value for everyday research. An individual can locate reviews, research papers, conference proceedings, scientific publications, and much more through the aid of scholarly databases[12].

a) PUBMED

The best resource for medical and healthcare research is PubMed. It is housed at the National Institutes of Health (NIH) and offers links to the full-text publisher websites and abstracts for over 35 million items in its bibliographic database.

b) PUBMED CENTRAL (PMC)

Open-access, free PubMed Central is a division of PubMed. This includes full-text copies of every article that is indexed. Consider taking a look at its sibling website, Europe PMC.

c) EMBASE

A proprietary research database called EMBASE (Excerpta Medica Database) contains PubMed as well. Other database providers like Ovid can also access it.

d) THE COCHRANE LIBRARY

The most well-known contribution of the Cochrane Library is its systematic reviews. 53 review groups world-wide guarantee the high caliber and evidence-based publishing of reviews. Over time, articles are updated to consider fresh research.

e) UP TO DATE

It offers thorough reviews of several therapeutic subjects, similar to Cochrane Library. To offer readers the most recent perspective, reviews are updated frequently.

f) MedIND

MedIND is a comprehensive online resource that provides access to the complete text of forty Indian biomedical journals, all of which are subjected to peer review. It iscreated to offer simple and rapid browsing and searching capabilities.

g) INDMED

An approximate of ninety-five eminent, peer-reviewed Indian biomedical journals are covered by the book database IndMED. The database's search features are intended to make it simple to access Indian biomedical and health scientific literature.

h) OPENMED

An open-access archive for the medical and allied sciences is called OpenMED - OpenMED@NIC. It is essential that the users need to register before a User ID is issued for access in the OpenMED@NIC system.Authors of scientific and technical papers have the option to upload and self-archive them. Nevertheless, an individual can browse the materials and search the collection without registering.

i) INDIA'S UNION CATALOGUE OF BIOMEDICAL SERIALS

Through the Union Catalogue of Biomedical Serials in India, customers can use document support services offered by the National Informatics Centre (NIC). The database was created to locate relevant journals in almost 200 Indian libraries and is a useful tool for discovering serial collections of the nation's major medical libraries. Everyone has open access to the database.

4 GOVERNMENT AGENCIES INITIATIVES

Initiatives to network science and society have been taken by the National Institute of Science Communication and Information Resources. Further initiatives are in motion to improve the infrastructure in order to improve scientific literature accessibility in India. A few organizations have worked to close the digital divide in order to enhance the availability of global health science literature in Indian medical institutes[14,15]. The few government-sponsored programs to obtain health science information in India are listed below.

4.1 THE CONSORTIUM FOR ELECTRONIC RESOURCES IN MEDICINE (ERMED)

The Directorate General of Health Services (DGHS), Ministry of Health & Family Welfare (MOH&FW), Government of India, launched the Electronic Resources in Medicine Consortium at the National Medical Library with the objective of creating a national network of electronic medical information resources to facilitate the provision of high-quality healthcare[13]. In its first phase, 39 centrally sponsored government institutions - including the libraries of 10 DGHS, 28 ICMR, and the All-India Institute of Medical Sciences (AIIMS) - were chosen to be core members. The MOHFW pursues to source the funding required for the NML-ERMED collaboration project's acquisition of electronic journals. The National Medical Library serves as the consortium's headquarters, where coordination is controlled.

4.2 MEDINFO GUIDE

With the assistance of Health Inter-network and the World Health Organization (WHO), a novel e-learning platform was created that offers trainer education as well as self-education in the use of the internet to access and search biological material. The platform covers both domestic and foreign websites with a broad range of content categories covering medical information worldwide.

4.3 INDIAN JOURNAL OF MEDICAL RESEARCH (IJMR)

IJMR is a prestigious Journal, which has been available online since 2004 and is now free to read in full. a for-profit internet database. The Indian Council

of Medical Research (ICMR) has subscribed to ProQuest, which has over 550 medical periodicals. All associated laboratories have access to ProQuest. Starting on January 27, 2007, the Cochrane Library is accessible online thanks to a country license consortium that was formed and supported by ICMR. The Cochrane Library is accessible to all Indian citizens with an internet connection for free.

4.4 NATIONAL HEALTH INFORMATION COLLABORATION

It has been established asa single point contact for accurate and timely health information on a variety of information formats related to all health-related topics. Physicians, nurses, medical students, health service providers, researchers, legislators, and other related professionals are the intended audience for the portal. The Ministry of Health and Family Welfare, Government of India, has worked with WHO to establish the site as part of the Health Inter-network India Pilot project. On October 28, 2008, the Indian government introduced the Health Management Information System (HMIS) site, which converts local health data into management indicators, trends, and real-time valuable information that is graphically displayed in reports.

4.5 COMMUNITY ACTION FOR HEALTH (CAH)

- It is becoming more widely acknowledged that theCivil Society Organizations (CSOs) and Community-Based Organizations (CBOs) play a vital role in advancing universal health coverage.
- National Rural Health Mission (NRHM) was introduced in 2005 and marked the official start of the Community Action for Health (CAH) system in India.
- Currently, over 200,000 villages, 353 districts, and 22 states in India use CAH procedures.
- Community-based monitoring and planning, which includes reviewing public health services with participation, is one instance of CAH. People are now more empowered to evaluate the healthcare system and demand changes.
- Clients in Gujarat may now access government social and health services thanks to the community information hubs created by the Self-Employed Women's Association (SEWA).

4.6 THE AYUSHMAN BHARAT MISSION

- Primary healthcare institutions are intended to be converted into Health and Wellness Centres (HWCs) as part of the Ayushman Bharat program.
- These facilities offer vital health services and conduct mental health screenings.

- Research is being stimulated by the Ayushman Bharat Digital Mission (ABDM), which is focused on digital health records and treatment continuity[16].

4.7 PRADHAN MANTRI JAN AROGYA YOJANA (PM-JAY)

- The government-funded PM-JAY health insurance and assurance program serves the underprivileged and disadvantaged people of India.
- It offers financial security while a patient is in the hospital[16].

4.8 IMPROVING THE INFRASTRUCTURE FOR HEALTH

- Programs to enhance the health infrastructure in rural areas have been replaced by theMinistry of Health & Family Welfare.
- These initiatives seek to improve access to high-quality healthcare services and guarantee sufficient human resources.

The government of India is implementing programs directed at achieving better governance, accountability, and access to healthcare for all citizens. Other nations might also profit from the lessons learnt from these initiatives[17,18].

5 HEALTH SCIENCE PUBLISHING INDUSTRY AND AGGREGATORS IN INDIA

India boasts a thriving health science publishing industry, with multiple publishers actively involved in the spread of knowledge in medical, scientific, and health-related sectors[23]. The publishing industry's procedures are now considerably simpler and move at a rapid pace towards advancements in content generation, online submission, picture management, review, and refereeing tools. Online resources include "in press," "in process," and "forthcoming papers." Since there arenot many publishers in India who produce journals in the field of health science, professionals havenot had an opportunity to educate themselves about or utilizing these useful tools[14].

5.1 HEALTH SCIENCE PUBLISHING INDUSTRY

5.1.1 MEDKNOW PUBLICATIONS

Academic, scientific, and medical peer-reviewed print and online open-access publications are published by MedKnow Publications. The publishing house is dedicated towards raising the profile and facilitating access to science from poor nations. With more than 80 print and online journals, MedKnow is the biggest open-access publisher of print journals. Its "fee-less-free" model of open-access publishing allows authors or their institutions to submit, process, and publish their articles without incurring any fees[20]. This allows for immediate free access to the electronic editions of the journals. Every journal that MedKnow

publishes has a separate webpage. Because the websites follow the OpenURL standard, libraries can easily route readers from citations to the article's complete text[19].

5.1.2 INDIAN JOURNALS.COM

Indian Journals.com is an online publisher that offers 289 journal titles and an extensive selection of multi-disciplinary Indian journals and research papers almost in 25 fields. The publisher serves organizations, societies, and individuals associated with Indian publications as well as offering exposure to Indian journals worldwide. The publisher offers both free and subscribed full-text models for 47 journals of Medical Science, 15 journals of Biotechnology and Life Sciences Collection, 12 journals of Pharmacyand 10 journals of Nursing.

5.1.3 OPEN J-GATE

It is an online portal for international open-access journal publications. Open J-Gate is Informatics (India) Ltd.'s contribution to the advancement of Open Access Initiatives, having been launched in 2006. With links to full text at publisher websites, Open J-Gate offers easy access to millions of journal articles that are freely available online. In the area of biological and health sciences, it has indexed almost 2500 open-access journals.

5.1.4 CBS - THE HEALTH SCIENCES PUBLISHERS

Books for the Post Graduate Medical Entrance Examination (PGMEE) and medicine are the areas of expertise for CBS, The Health Sciences Publishers.Their papers are geared for researchers, practitioners, and medical students[26].

5.1.5 SAGE PUBLICATIONS INDIA

SAGE, a global academic publisher creates books, journals, and library materials in the fields of health and other subjects.They prioritize intellectual writing and excellent research.

5.1.6 S.R. HEALTH SCIENCES

S.R. Health Sciences Pvt. Ltd. is a prominent distributor of books on a wide range of health-related subjects from prestigious international publishers.Books about medicine, science, technology, engineering, dentistry, nursing, and pharmacy are among the services they offer[27].

5.1.7 INTERNATIONAL RESEARCH IN MEDICAL AND HEALTH SCIENCES

In the field of health sciences, this international publication publishes

research articles, reviews, case studies, and other materials.It seeks to make a major contribution to scientific understanding in health-related domains.

5.2 ONLINE AGGREGATOR PLATFORMS

In India, digital platforms have become a viable alternative to traditional publishing for accessing healthcare services.For a smooth experience, these platforms combine providers, ease transactions, and give end-to-end assistance[21]. Among the prominent platforms are:

5.2.1 PRACTO: Uses smartphone apps to provide at-the-moment consultations with doctors and other experts.

5.2.2 MFINE: Manages medical records and offers remote consultations.

5.2.3 DOCSAPP: Provides medical advice by matching people with doctors.

5.2.4 ASKAPOLLO: Schedules appointments and provides medical services.

Customers can anticipate uniform pricing, quality, and a marketplace where they can look up, pick, and contrast the services that are offered on these platforms.India's aggregator platforms and publishing sector for health sciences are vital to the country's efforts to improve access to healthcare services and spread knowledge[25].

6 HEALTH SCIENCE INSTITUTIONAL REPOSITORIES

An online digital archive that arranges, maintains, and makes accessible an institution's scholarly, research, and instructional output is called an institutional repository (IR). It is a platform for promoting open access as well as for gathering, exhibiting, and sharing academic content created by an organization, such as, data sets, journal articles, posters, and presentations, as well as student projects,such as, theses and dissertations. For over a decade, medical libraries have included institutional repositories within the services they offer to their user population[9].

With the creation of the DSpace and EPrints open-source repositories more than a decade ago, the concept of an institutional repository—defined as "a set of services that a university offers to the members of its community for the management and dissemination of digital materials created by the institution and its community members"— originated into existence. The determining, offering, and promoting tailored repository services that will interest departments and researchers is a major responsibility of a repository manager. Health science libraries should necessarily provide institutional repository services that are appreciated and are considered appropriate by the entire institution for them to be effective. Institutional repositories provide access to the scientific literature's complete text. Most of the content is accessible through

these portals is free, except content where copyright laws impose restrictions.

According to OpenDOAR, an official directory of open access repositories, as of May 2024, there were over 5900 open access repositories worldwide, with 3995 of them including health and medical information (Fig. 1 & 2). However, there are just 65 repositories in India that deal with health and medicine.

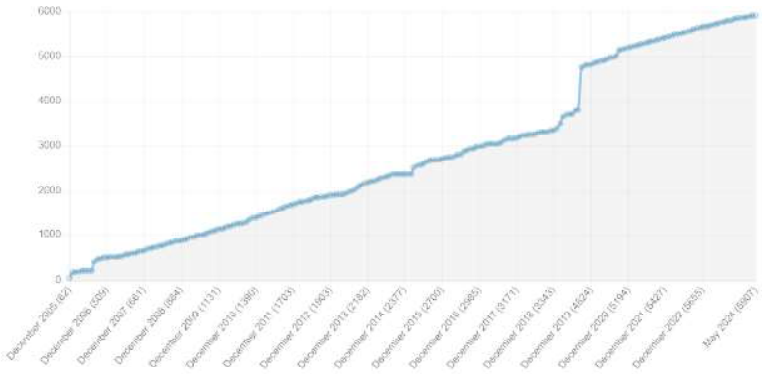

Fig. 1

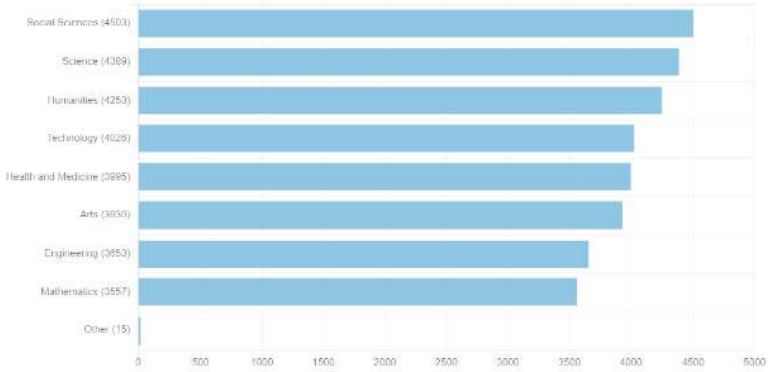

Fig. 2

7 HEALTH SCIENCE LIBRARIES OF NATIONAL IMPORTANCE

The significant health science libraries and consortiums of national significance are as follows[22]:

7.1 NATIONAL MEDICAL LIBRARY (NML)

The NML library was envisioned to be a departmental resource with a modest book collection for use by officials of the former Directorate General

of Indian Medical Services (DGIMS) on establishment. Later, in 1947, the Office of the Public Health Commissioner in India and the DGIMS combined to establish the Directorate General of Health Services (DGHS), which included the library as part of its name. The DGHS library was progressively established and designated as the Central Medical Library in 1961, and as the National Medical Library on April 1st, 1966, in recognition of the necessity for a Central Library to serve the academic, research, and clinical activities of Biomedical Professionals in the nation. The National Medical Library of India seeks to offer health science professionals in India comprehensive and effective library and information services[28].

7.2 THE BB DIKSHIT LIBRARY

The library at All-India Institute of Medical Sciences (AIIMS), one of India's top medical schools, is crucial to patient care, education, and research. It is a valuable resource for health science material. In addition to serving institute users, the library offers its services to outside clients upon request[30].

7.3 HEALTH SCIENCE LIBRARY & INFORMATION NETWORK (HELINET)

India's health science libraries are part of the HELINET cooperation. It offers access to top-notch electronic journals available online from reputable publishers, such as John Wiley, Cambridge University Press, Lippincott Williams & Wilkins, Oxford University Press, and the British Medical Journal[29].

In India, these libraries have a major impact on healthcare, education, and research.

8 CONCLUSION

It would be pertinent to mention that accurate and comprehensive data is necessary for the smooth operation of healthcare systems as well as their long-term growth and viability. Reviewing the information processes and current systems is necessary to help India's Health Information System move from its present condition to one that complies with international standards. It also highlights the existing regulations in the system and offers suggestions for how to make them better. In India, the ability to generate and retrieve health information is limited to financially stable, centrally financed institutions and their linked users. Other smaller organizations and the rest of the state-governed medical institutes do not appear to have these amenities. It is imperative to implement policies and guidelines aimed at improving health information accessibility for all those who immediately require it. The repositories should contain a wealth of interactive, multi-media health science knowledge that is available in multiple regional languages. As ICT has reached the villages, information and the necessary technology to deliver it must be made available in the interior of states to promote excellent healthcare practices and achieve health equity in the area[31].

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