Facilitating Research Through Comprehensive Cardiology Clinical Research Database

Sir,

Many hospitals in Pakistan use computer systems which store and retrieve data in multiple ways. These systems have several advantages over paper-based medical record systems as it is difficult in paper-based systems to retrieve particular information from patient’s data. In computer-based medical records, data organization is far more superior and its backup can be stored easily on hard drive and DVDs. Even the best paper-based medical record system becomes a hassle when it comes to the research work. That is why we thought to develop a comprehensive computerized Clinical research database incorporating the features of information system and data analysis software. The main function of this system which has been named as “Cardiology Clinical Research System” is to retrieve patient’s data from multiple parameters thus making useful for research purposes. Its back-end data base is developed in SQL which stores and performs data management function while its front-end which is also called user interface is designed in C-sharp language. After getting the desired results from custom-made query, this data can be analyzed in statistical software SPSS version 16 or higher. In this way we get analyzed reports of clinical data which can be used for research purposes. This system remarkably helps in research process as it requires very little time to retrieve data from thousands of patient’s records on set parameters. Regular back-up provides duplication of records hence reducing the chances of losing data. It also needs less space and provide tight security to its database. Its data analysis components can perform number of statistical tests including descriptive statistics, inferential statistics and regression models which can be used for both administrative and research purposes.

This is relatively new concept in Pakistan in terms of using statistical software with clinical information system which basically provides more security, back-up, improved retrieval performance to its clinical data which then can be utilized in research application.

REFERENCES

DR. MUHAMMAD FAISAL RAHIM, DR. WAQAS AHMED AND AMMAR ZAMAN

Correspondence:
Dr. Muhammad Faisal Rahim
Assistant Director, Shifa Clinical Skills and Health Informatics Laboratory (SCIL)
Shifa College of Medicine, Islamabad.
E-MAIL: mfaisalrahim@gmail.com

Research in Radiology

Sir,

Evidence-based medicine is now the standard of patient care, which comes through observation, critical thinking, evaluation and implementation. In the current era of modern medicine, it is difficult to ignore the importance of research in any field of medicine including radiology. However, there are research issues cutting across the specialty of radiological science.

Use of radiology equipment, techniques, imaging parameters and diagnostic or therapeutic algorithms without testing or validation in a particular population can be lethal. Radiological skeletal age assessment, sonographic fetal weight estimation, radiation dose calculation and prediction of osteoporosis with DEXA scan are few such examples where normative data, in the community of interest, are essentially needed. Cost-effective evaluation of a particular radiological modality in a certain population, with different health seeking behaviour and health system, is also imperative for better patients’ care.

The research activities in any radiology department in Pakistan should be geared towards improving the already existing imaging services, diagnostic protocols and radiology equipment parameters. They should also adopt and implement new technologies, in addition to academic growth of radiology services.

Qualitatively and quantitatively research in radiology is lacking globally. Pakistan is no exception to the dearth of such research initiatives. Many reasons have been identified for lack of research in radiology such as; insufficient training, financial constraints, inadequate support and lack of appropriate facilities are some of the resounding issues hampering research in radiology.

Situation in Pakistan is even worse where radiology is
mainly considered a diagnostic service providing department. This misperception has impressed itself primarily due to increased patients turn-over, high initial capital investment, radiologists' shortage, and overseas migration of trained radiologists for better job opportunities. Lack of scholarly vision, amongst the specialty leaders who are primarily trained as service providers, does not help either. This leaves a mentorship void. Lacking radiology-specific Medline indexed journals and given the low priority of funding radiology-specific protocols, research in radiology languishes at the bottom. Previous research has demonstrated that hospitals in private sectors are doing more quality research as compared to radiology departments in government hospitals.4 This could be attributed to availability of newer technology, proper radiological database and newer research oriented curriculum. There is also a geographical variation in radiology research productivity in Pakistan with low productivity from underdeveloped areas of Pakistan.4 This situation could be changed given the initiatives of Higher Education Commission (HEC) of Pakistan, The College of Physicians and Surgeons Pakistan (CPSP) and Pakistan Medical and Dental Council (PMDC) also play a positive role in this regard by showing their emphasis on research in postgraduate curriculum and health service structures.

For promoting research in radiology community of Pakistan, first Annual Radiology Research Workshop was organized by Radiological Society of Pakistan in November, 2009. This grass-root effort provided participants with the basic knowledge of radiology research methods, issues related to plagiarism, an up-to-date literature search techniques, and how to develop new ideas and opportunities in radiology related researches. Such workshops, when organized on regular basis at regional and national level, could serve to resuscitate the failing radiology research in Pakistan.

Radiology departments should also be proactive in hiring and retaining faculty members with an established research background. Appropriate remuneration and protected time for research should also be provided to such faculty members. Research oriented postgraduate training curriculum and regular research forum meetings in radiology could also be of use in increasing the research aptitude in trainees and consultants alike. Research funding agencies should give some priority and support to radiology related proposals. Radiology equipment vendors in Pakistan should be bound to encourage machine validation studies in our population. Radiology in Pakistan needs urgent research capacity building for promoting evidence-based and cost effective radiology services.

REFERENCES

DR. WASEEM AKHTAR
Correspondence: DR. WASEEM AKHTAR
Department of Radiology, The Aga Khan University, Stadium Road, Karachi-74800.
E-MAIL: waseem.mirza@aku.edu

Neuroscience in Pakistan: A Neglected Avenue

Sir,

Wilder Penfield, a Canadian neuroscientist wrote in his book,1 “Brain is the organ of destiny. It holds within its humming mechanism secrets that will determine the future of the human race.” Worldwide, neuroscience research has progressed at an astonishing celerity during the later half of the last century and 21st century has been predicted as “Century of the Brain”.2 Despite the globally recognized importance of neuroscience, it has remained neglected in Pakistan. World Health Organization (WHO) has predicted that prevalence of neurological and psychiatric diseases will rise dramatically over the next 30 years, particularly in developing countries.3 Pakistani population is already confronted with wide array of these disorders, where approximately 5 million people suffer from neurological diseases and number of mentally disturbed people exceeds 14 million.4,5 Data for brain tumours and traumatic brain injury is lacking but ongoing Road Injury Surveillance Project of Karachi suggests that it may account for majority of road traffic injury related deaths in Karachi.

Currently, universities in Pakistan do not offer undergraduate and graduate degrees in neuroscience. There is a dire need of neuroscience research centres at major public and private sector universities and the much anticipated National Institute of Excellence in Neuroscience (NIEN) at Dow University of Health Sciences is an initial step towards this goal. The responsibility lies on the Higher Education Commission (HEC) of Pakistan to provide funding for these institutions. International collaboration from organizations such as WHO, International Brain Research Organization (IBRO), and Society for Neuroscience (SFN) are also warranted to ensure high quality research.
We need indigenous research, both laboratory-based and clinical, to determine the exact genetic predisposition and clinical pattern of neuropsychiatric illnesses in Pakistani population. This will help us develop community-based strategies to deal effectively with these diseases. There is also a need of a larger number of neurologists, neurosurgeons, and psychiatrists in Pakistan. According to estimates, there are only 70 neurologists, 300 psychiatrists, and 300 neurosurgeons for over 140 million population of Pakistan. It is understandable that with such an incongruent ratio between health care providers and health seekers, not only the quality of health care is compromised, but the opportunity for these clinicians to perform high quality research is also lost.

In short, neuroscience in Pakistan has remained largely neglected, which has placed us far behind in terms of quality of research and clinical facilities as compared to the Western, or other Asian countries. Dedicated efforts from both local government and international organizations along with the existing community of basic and clinical neuroscientists are required to fill the existing gaps.

REFERENCES


DR. SYED FARAZ KAZIM AND DR. MUHAMMAD SHAHZAD SHAMIM

Correspondence: Dr. Muhammad Shahzad Shamim
Section of Neurosurgery, Department of Surgery
The Aga Khan University Hospital,
P.O. Box. 3500, Stadium Road, Karachi-74800.
E-MAIL: shahzad.shamim@aku.edu