

Editorial

Evidence-Based Medicine: Fountainhead of Medical Sciences

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Modern medicine has witnessed a sea change with advances in understanding of cellular and molecular mechanisms underlying various disease processes which have transformed the therapeutic protocols. These advances could become reality only because of the intense desire to examine and evaluate objectively the cause-effect association of diseases with sincerity and minimal inherent biases, observing the salient tenets of research, unbiased data collection, and ability to correlate, seek, and underscore the cause and effect association and the ability to generalize from the specific scenario.

Three important tenets of medical sciences- patient care, academia and research are driving entities in the process. A teaching hospital affiliated with an academically capable medical college is at the helm of affairs carving and sculpting its edifice and foundation through the measures and techniques of evidence, updating and upgrading the knowledge database on a perennial and continuing basis, meeting the challenges put forth by the capricious and whimsical environs. As is essential for any branch of professional education, exacting standards of medical education is primarily ordained by its undergraduate students, postgraduates and sub-specialty residents. There is a need for primal importance for the application of methodologies of research that form the mainstay of paradigmatic educational archetypes. Needless to underscore the fact that exacting and exigent standards of academia and patient care demand a prior incorporating evidence-based and research oriented (introspective and exploratory) techniques, that get an additional impetus and go-around amidst abundant clinical material.

Medical science is an empirical science and needs to be updated on a regular basis and the exotica of the discipline is that its proponents, the clinicians, need to be aware of the premise, holding the essence of evidence based and research oriented techniques to the very core of therapeutics. Subsequently, the medical students, the torchbearers of medical sciences, need to be painstakingly

punctilious and conscientious, ratifying and upholding the legacy and traditions of medicine, being sensitive to the importance of acquiring knowledge through evidence-based techniques, researching through well-designed and well conceived protocols with meta-analysis and systematic reviews, that have been the pivotal forces of futuristic medical sciences. The quality of medical education is intricately anchored to evidence-based and research-oriented clinical practice that needs to be appreciated by the students and their guides, who need to evolve their respective thrust areas working objectively, developing their sub-speciality, and impressing on their students its relevance in appreciation of intricacies of clinical medicine. Moreover, objectivity in any research endeavour mandates an exhaustive and extensive exploratory search through the archival gallery of the respective area of interest that demands an incessant and inviolable habit of going through highly rated journals on a regular basis.

The necessity of evidence-based and research-oriented medical sciences was appreciated during the COVID-19 pandemic, when the very survival of humankind was at stake with deaths skyrocketing to unimaginable numbers. It was only through the application of the evidence-based and research-oriented approach, analyzing objectively the totally new and novel infecting agent, Severe Acute Respiratory Syndrome Coronavirus-2 (*SARS-CoV-2*), inclusive of the clinical manifestations along with pathophysiological changes as could be ascertained through biopsies of lung and other tissues, giving a better appreciation of the disease process that subsequently concluded in an evidence based therapeutic regimen.

All-out efforts need to be implemented to train a fraternity of scholars who shall receive state-of-the-art education in research designs, critical appraisal of available literature, techniques to combat misinformation inclusive of plagiarism, along with the thrust for collaboration across disciplines of science, technology and humanities. The advent of digital world technology has initiated another upheaval in medical sciences with the emergence of artificial intelligence (AI) and augmented medicine (AM). This had

led to a plethora of possibilities in the field of diagnostics, therapeutics, prognostication, robotic-assisted surgeries, wound care management, physical therapy, and rehabilitation.

It would be worthwhile to add that the aptitude and finesse for evidence based and research oriented endeavors and pursuits need to be cultivated and harnessed at all the levels of medical education undergraduate, postgraduate and sub speciality programs. Such academic quests happen to be

archetypal element for practicing clinicians, who wish to excel in their pursuit towards excellence in healthcare.

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