



Medical Education-Present Scenario & Future

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Introduction

From the era of Susruta and Charaka, wherein devout disciples learnt the art and science of healing in ancient Gurukulas, we are now in an age of rolling out modern day physicians along a conveyor belt. It is an oft-repeated criticism that our medical colleges are producing graduates who are not well equipped to tackle the health care needs of the society. The situation is no different in other parts of South East Asia and much like it was hundred years ago in USA(1). What is the reason behind this notion? The way medicine is taught and learnt has undergone tremendous metamorphoses over the past few decades. Pedagogy or textbook based teaching or teacher-centered learning is gradually being replaced by student-centered learning. Does the current system of medical education equip the product emerging from the portals of a medical college with the skills required to be a lifelong, self-directed learner? Are the graduate doctors well trained to perform their clinical responsibilities? Are they aware of their ethical, moral and legal responsibilities? The answer to these questions cannot be an emphatic affirmative.

The state of medical education in India presents a scenario marked by rhetoric and wishful thinking rather than concrete steps in right direction. The search for a need-based curriculum (2,3,4) is not new. Ironically, the need has been felt for ages both by academicians and regulatory bodies, but the curriculum have not really changed. While the graduates generally possess reasonably sound knowledge of medical science, they are often found deficient in the performance of clinical skills and problem-solving which form the core of clinical competence. While the commercialization of medical profession is cited as a common reason for the dilution of quality, doubts have been raised regarding the quality of teaching and training imparted to the students.

The medical colleges in India have traditionally followed a curriculum stuffed with a large body of knowledge pertaining to basic science and clinical disciplines. Compartmentalization among departments; lack of

integration of course material among departments; poor coordination between the basic science courses and clinical sciences; and ongoing adherence to traditional didactic pedagogic methods of instruction where significant alternatives abound.

There are areas in the curriculum, viz., medical ethics, behavioral science, communication skills, managerial skills which do not receive due attention in the existing curriculum as they should. Changing needs of the society advances in scientific knowledge and innovations in the educational field necessitate constant changes in medical school curricula. The latest MCI (5) guidelines stipulate that undergraduate medical education should be oriented towards health and community. Students' training must aim at inculcating scientific temper, logical and scientific reasoning, clarity of expression, and ability to gather and analyze information.

Integrated Medical Curriculum (6,7)

The present system of education follows a building block principle where each subject has its own frame, restricted to one part of the course. The disadvantages of such system are unnecessary repetition, disjointed approach to teaching, creating confusion in students' mind. Curriculum integration therefore has evolved as an important strategy in medical education. An integrated curriculum provides a meaningful learning experience as learning takes place in a context (contextual learning). It also promotes a holistic approach to patients and their problems. The students study the biological and biochemical foundations of an organ system, its structural properties, reactions to disease and injury and response to treatment with minimum possible time gap in the delivery of different elements. The impact is further heightened by providing the relevant practical and patient care experience. A disease, its diagnosis and treatment cross the barriers of administrative convenience.

The MCI has recommended both horizontal (e.g. anatomy-physiology-biochemistry) and vertical integration (e.g. anatomy with surgery) to be introduced throughout

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the curriculum. Horizontal processes are those between departments of the same academic year enabling the student to have a simultaneous view of different aspects.

A vertical scheme unites subjects of various academic years through a topic or theme. Diabetes mellitus, for example, can draw contributors from biochemistry, pathology, pharmacology, medicine and nephrology. A move towards integrated teaching is likely to reduce the fragmentation of the medical course, and motivate students for better learning.

Problem Based Learning (8,9,10,11)

Introduction of PBL has been one of the most dramatic changes to integrate basic and clinical science content and to promote active student learning. PBL is a learner-centered educational method. Students use "triggers" from a problem case or scenario to define their own learning objectives. Subsequently, they do independent, self-directed study before returning to the group to discuss and refine their acquired knowledge (12). In PBL, the teaching process is as follows:-

1. *Students confront a problem*
2. *In groups, students organize prior knowledge and attempt to identify the nature of the problem.*
3. *Students pose questions about what they do not understand.*
4. *They design a plan to solve the problem and identify the resources they need.*
5. *Students begin to gather information as they work to solve the problem.*

PBL is not about problem solving per se, but rather it uses appropriate problems to increase knowledge and understanding. PBL is designed to help students learn the sciences basic to medicine and at the same time, they develop the reasoning process used by physicians and other health professional in their clinical practice. A striking feature of PBL is that the faculty acts as a facilitator. Students work in small groups to solve/ provide multiple solutions to problems. This approach also underlines 'learning how to learn' and stimulates self-directed learning as a central, pervasive objective of the teaching-learning process in undergraduate (UG) medical education.

Evidence Based Medicine (13,14)

The EBM refers to a conscientious, explicit and judicious use of current best evidence in making clinical decisions about the care of individual patients. Put simply it means that when there is evidence that something works, is good and benefits the patient, do it. If there is evidence that something does not work, is harmful, does not benefit the patient, do not do it and in case there is insufficient

evidence, be conservative, relying on individual clinician expertise. It follows that the practitioners/consultants/postgraduate students, when faced with any problem/dilemma in the clinical context of a patient, should be able to perform a literature search, identify the literature evidence available on the clinical condition, critically evaluate it, and determine the "Best Evidence" to diagnose/treat/manage the patient. The adoption of the practice of EBM is all the more imperative since the Internet revolution has provided access to medical literature to the common man and general public. It is conceivable that in the near future the patients will confront the physician with the latest literature available on the Internet. It is absolutely essential and probably inevitable that the clinicians will have to adopt the practice of EBM out of compulsions imposed by patients' expectations.

Continuing Medical Education (15)

Life is a process of education. Knowledge gained during undergraduate medical curriculum almost becomes outdated by the time the student graduates. Undergraduate medical qualification is no longer regarded as a lifelong certificate of competence. Continuing Medical Education, defined as "any and all the ways by which doctors learn after formal completion of their training" provides the platform for this endeavour. The need for continuing Medical Education (CME) has been well documented and is now widely accepted.

Rounds, educational meetings, conferences, refresher courses, programs, seminars, lectures, workshops, and symposia are examples of such educational activities. Traditional CME programmes fail to achieve their stated objective, as they are largely one time didactic exercises where an endless line of speakers makes a series of presentations to a passive audience. Interactive techniques such as case discussion, role-play, or hands-on practice sessions are generally more effective.

Medical Teacher Training

Teaching medical students is central to the mission of medical colleges yet teacher training is perhaps the most vulnerable issue in medical education. Teachers of medical students rarely receive formal training in teaching, education, or assessment of learners. In most of our medical colleges, although junior and senior resident doctors are required to undergo teaching experience as part of their academic work, seldom does any formal training accompany this experience. The teacher's performance is taken for granted and his or her competence in teaching is never questioned. With the phenomenal changes in educational and information



technology, the role of teacher has undergone dramatic changes. He/she is expected to possess skills and abilities to plan the curriculum, make rational use of the media technology and design an assessment strategy. As suggested by MCI, the development of medical education units in all medical colleges will go a long way in the development of teaching skills amongst their faculty. While training forms an essential requirement, it is also necessary to provide academic recognition to the teachers for their contribution to teaching. Otherwise, teaching will be overtaken by the priorities of research and patient care. It is important to encourage and reward teachers who show a flair for teaching and adopt innovative teaching methods.

Conclusion

Conventional-theoretical and experimental teaching blended with a system of teaching which is innovative aiming to develop UGs & PGs as community-teacher, true academician/researcher. Medical education should be integrated, problem based, evidence based and continuous. Current medical education need to have more focus on clinical impartment of knowledge, even out of animal experiments taught and trained to UGs & PGs or by replacing to certain extent with simulated software for animal experimental. Teaching innovation should also target to develop attitude free from ego, medical euphoria and communication skill and public dealing- with humbleness. Making UGs and PGs prescription competent and confident. Developing their preventive and referral insight, basic record keeping, medico legal- aspects , administrative skills, competence in dealing problems of hospital, handling of funds, media handling & VVIP handling should also be stressed upon in teaching curriculum. Making them updated about new emerged health problems, developing in them leadership quality, determination, dedication, discipline, making them focused, learn to earn bread with dignity, feel honored to be part of this profession & making them competent for self employment should be the ultimate goal and target of medical teaching/education in present scenario.

Medical colleges have the singular responsibility of initiating and sustaining the reform process but institutional change takes a long time and deep commitment, and patience and perseverance are essential to overcome the resistance arising out of conflicts with vested interests and departmental prerogatives. Creativity and resourcefulness are required to overcome resistance. Implementing change is only the first step in the journey.

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