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EDITORIAL

Challenges for the Academia for Producing Future Doctors

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Medical education is a process in continuum. It takes five years of undergraduate study, plus one year of internship to produce undifferentiated physicians with certain knowledge attitudes, and skills to make them able to go further in their education in specific residency programs, which consist of four to five years. Globally, it is recognized that medical graduates should have 1) a scientific approach to practice[1, 2], 2) an evidence-based patient care[2], 3) research skills[1, 2], 4) professionalism[1, 2], ethical and compassionate attitude towards patients[1], 5) communication and collaborative interpersonal skills[1, 2] and 6) community-oriented practice[2]. Embedded in evidence-based practice is a self-regulated and self-directed lifelong learning approach. The reason being that the exponential growth in knowledge doubling time which was estimated that in 1950 was 50 years, in 1990 it was 7 years, in 2010 was 3.5 years and in 2020 it was 73 days[3]. Thus, graduates should also be curious seekers of recent knowledge, self-appraisers of competence deficit, optimal users of health care resources, and team players. Graduates are also expected to demonstrate leadership qualities in the decision-making process.

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Challenges for the academia

There are several challenges for the academia in developing dynamic, regularly updated curricular content, which is integrated and applied to achieve the expected outcome in the graduates mentioned above[1]. There are certain internal and external challenges faced by academia to incorporate changes in learning and teaching strategies for current and future medical practitioners.

Medical knowledge is increasing exponentially every day. Newer diagnostic technologies and use of artificial intelligence are rapidly being incorporated in healthcare delivery system. The challenge that how to extract relevant and applied knowledge and skills at the learners' level and to combine diverse range of subjects, new areas of knowledge, and emergent specialties in undergraduate medical curriculum to produce a medical graduate who comes up to meet the rising community expectations and ever-changing health system need is among the most important to address[4]. It is immensely challenging to integrate preventive and palliative care, molecular genetics and radio-diagnostics, medical ethics and information technology into present curriculum keeping patient safety at all levels of care[4]. Addressing resource constraints both at academia and health systems level to be cultivated in training to produce optimal efficient and effective medical practitioner at all levels of health care without compromising patient safety.

Academic Institution's Curriculum committees, as they contemplate change, the most common problem they face is the "mini-me" syndrome, in

which faculty strongly advocate for content that mimics their professional leanings[5]. On the other hand, if the institutions exercise "Greater central oversight" for the curriculum has results in decreased personal satisfaction in teaching and emerging alternate methods of teaching may result in unguided self-directed learning and decreased teacher – student interaction time.[3,6] Another major challenge in medical education is growing disconnections between the curricular content delivery and the changing dynamics of health care[3]. Collaborative approach with stakeholders makes change always uncomfortable, therefore, when evaluation of learners is done on individual performance and on the scope to which learners are skilled of performing independent and the health professionals are trained for independent practice and in research practices in health care system introducing other members of the team and recipient of the health care for assessing the care giver practitioner and students is strongly resisted. [7]. Likewise, potentially more proficiency of learners/patients than of teachers) and resistance to change among faculty members remains a recurring issue in the medical education[7]

This also can only be addressed through faculty development which without any doubt is need of the day[3]. The teaching skills of faculty are outdated compared with the learning patterns of their students[5]. On-going faculty and health care teams continuing educational training is the requirement of the day to improve imparting training, improving teaching and skills as well as using appropriately well-designed learners' assessment tools.

One more challenge faced today is 'simulation science' and quality improvement [3]. In the developed world medical schools training on simulation models helps in learners' confidence and decreasing errors when interacting and caring for patients. Simulation facilitates development and grooming of technical skills within the learner's own environment and enhance patient safety. Adaptation to Artificial Intelligence[8] – "*a machine with intelligent behavior such as perception, reasoning, learning, or communication and the ability to perform human tasks*" is another big issue. Institutional review of the curriculum is a demanding process, The current medical school curriculum is unable to accommodate Artificial Intelligence due to two main reasons—insufficient time and lack of expertise[8]. Nonetheless Institutions should be flexible and visionary to anticipate changes and training for skills required in future practice of doctors.

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