

Implementation of Competency Based Curriculum in Physiology: An Opportunity and a Challenge

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Medical Council of India (MCI) in its vision document of wide-ranging changes in undergraduate medical education and training has introduced competency-based integrated curriculum (CBIC) from this academic session starting in August, 2019. Competency-based medical education (CBME) is a welcome step and is essential in a medical training programme. However, for effective implementation of CBME, it is obligatory to have the adequate ground level preparation for its implementation and execution. Two requirements need to be fulfilled for the purpose: i) First, the appropriate framing of the competency map, and ii) Second, the effective plan for its implementation.

The present CBME document of MCI lacks proper structuring and mapping of the competency in Physiology Curriculum. In many systems, subjects and topics, the mapping appears to be highly inappropriate and superfluous. Just for an example, for the topic on "Granulopoiesis and its regulation", the competency mapping depicts it as "Describe granulopoiesis and its regulation". Similarly, "Describe erythropoiesis and its regulation", "Describe types of anaemias and jaundice", "Describe the concept of pH and buffer systems in the body", are just few other examples. Entire competency mapping has been framed by just prefixing the word 'describe' or 'discuss' to the topic. Such a mapping does not represent the concept of a mapping of a syllabus and does not fulfil the objective of mapping of competencies. Competency can't be developed just by merely describing a process. Of course, for 'Knowledge' aspect of competency to be assessed, students have to describe some processes, mechanisms and their regulation, but such 'Describe the process...' for MBBS students are to be limited to only important functional aspects in a system, such as regulation of blood pressure, respiration, gastric secretion etc. Describing everything does not make any sense for evaluation of competency, as 'Describe' and 'Discuss' do not assess the core knowledge, unless they specify what is to be described or discussed and what is expected to be assessed from such a description or discussion. Further, as presented in the competency mapping document of MCI, there are depictions of core competencies for topics that do not come under the purview of first MBBS syllabus, such as "Describe apoptosis", "Describe pathophysiology of myasthenia gravis", "Describe muscle atrophy" and so on. How can such topics be described

by a 1st MBBS student, when he is supposed to learn only the very basics of those applied or clinical aspects in physiology, and he learns more about those topics in Pathology, Medicine and other clinical subjects? Describe a topic can't be the part of any assessment unless student is expected to learn the details of that topic. Even after the vertical integration of the curriculum that integrates preclinical with paraclinical and clinical subjects, describing such diseases can't be the objectives of curriculum in Physiology. One should realize that an MBBS student has to learn basic concepts in physiology to understand the physiological basis of clinical medicine, not the clinical medicine per se in first year in physiology. Our apprehension is that an examiner in the 1st MBBS final university examination should not fail a student in physiology for not able to answer mechanisms of apoptosis, pathophysiology of myasthenia gravis or details of muscle atrophy, stating that these topics are in the list of core competencies of undergraduate curriculum as prescribed by MCI. Moreover, if a student is forced to learn these clinical topics under core competencies in physiology, he will forget to remember the basic mechanisms and regulations that are actually the core of the subject in physiology.

It appears that the experts those who have framed the competency mapping have not put enough effort to understand the definition and concept of competency and have not attempted to prescribe the details of the method of assessment of the competency. Competency is the observable and measurable knowledge, skill, abilities and personal attributes that contribute to enhance performance and ultimately result in success. It is an observable and measurable expression of understanding the subject by the student. Measurable aspects of competencies need to be addressed at length while framing such competency mapping. Enough ground work needs to be done by a group of competent and experienced subject experts first to list the core and non-core topics in physiology and then to make enough exercise to frame the competency map with proper wording and phrasing of core (must know) and non-core (desirable to know) parts of each topic in a system in physiology, giving due emphasis to knowledge, skill, attitude and communication. Enough time and experience should be spent in mapping the curriculum based on competency.

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Competency-based education becomes effective only when the assessment of competencies is effective. For competency assessment, the pivotal necessity is the availability of a good number of teaching and technical staff in the department. Lecture classes should be reduced to minimal and small group discussion, demonstration, seminars, problem-based learning, and teachings in clinical settings are mainstay of competency-based education. Further, valuation through more objective questions, OSPE, OSVE and OSCE are major modes of examinations in competency-based assessments. But, as numbers of faculty for medical colleges have been drastically reduced by MCI, currently implementation and evaluation of CBME will be totally unsuccessful. This is high time to increase the strength of teaching staff to a minimum of three times of

the present sanction, to ensure effective implementation of competency-based curriculum as prescribed by MCI. Unless this happens, CBME will remain just as a decorative word in the curriculum prescription. We appeal to MCI and Government to take adequate steps to address the deficiencies in the competency mapping and increase the teaching faculty and staff strength and infrastructure in physiology departments across the country to make effective implementation and evaluation of the competency-based curriculum. From Association of Physiologists of India (ASSOPI), a representation has already been submitted to MCI to increase the faculty strength in physiology and infrastructure facilities in physiology departments across the country. Early this happens, better is the future of physiology in the country.

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