

Impact of assessment of medical students in India on assuring quality primary care

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EDITORIAL

Please cite this paper as: Basheer A. Impact of assessment of medical students in India on assuring quality primary care. AMJ 2015;8(2):67–69. <http://dx.doi.org/10.4066/AMJ.2015.2297>

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Medical education in India was introduced by the British several decades ago. Since that time, it has been on the path of evolution, albeit rather slowly. Several changes have been made at regular intervals to the curricula of undergraduate medical teaching, including shortening the duration of basic sciences training, introducing vertical and horizontal integration, and early clinical exposure. However, the basic teaching methodologies and assessment techniques have barely been subjected to any form of reform whatsoever. The quality of medical education in the Indian system, apart from its direct impact on quality of medical professionals in India, has global implications as a large proportion of doctors who emerge from the country's medical schools migrate to the United States, the United Kingdom, Australia, and other countries.¹ Does the present Indian system of assessment ensure that quality primary care physicians emerge from medical schools and get licensed to provide a basic minimum standard of care?

Globally, there are many ways that medical education takes place. The present method of medical teaching in India relies heavily on didactic lectures, and despite efforts of the Medical Council of India (MCI) very few institutions have implemented alternative teaching-learning techniques such as seminars,

case-based and problem-based learning (PBL), and self-directed learning (SDL). Moreover, integration of basic sciences with para-clinical and clinical sciences is still lagging behind in most centres. The exponential increase in the number of medical institutions has without doubt increased the physician workforce. Nonetheless, the quality of medical education imparted at these colleges, and therefore the overall quality of the young doctors, is questionably low. The MCI is predominantly concerned with physical infrastructure and faculty positions, and has no provisions to monitor the standards of medical education being provided at institutes or schools under its jurisdiction. This is problematic, as there currently appears to be no framework to address the quality of medical education provided in India, either in relation to teaching methodology or assessment.

Teaching methods used in medical courses also need revisiting given that many concepts that are common worldwide have not yet been consistently embraced within Indian teaching frameworks. For example, small group interactive sessions are useful in medical learning, and when undertaken using a problem-based learning approach, improves the quality of learning substantially compared to conventional teaching.² Similarly, the use of objective structured clinical examinations (OSCE) as an assessment tool has been modified into an effective active learning tool in many countries.³ The use of simulators—both physical and computer generated—to allow practice on a “real” patient is also globally widespread and have good reliability, validity, and generalisability coefficient, as well as modest correlation with written examinations.^{4,5} Many of these innovations and methods are yet to find their place in the Indian system.

Assessment in medical education is often described as a necessary evil. Both formative assessment (which aims at giving continuous feedback to students during their course), and summative assessment (a reflection of the cognitive achievement) deserve equal importance in medical education;⁶ both promote learning and better

outcomes. Assessment tools have been classified traditionally into knowledge-based (testing “knows” and “knows how”) and performance or work-based (testing “shows how” and “does”), the former being easier to implement and reproduce in the medical school setting. An example of a knowledge-based tool is multiple choice questions (MCQs), which assess what a student knows, but MCQs are rebuked for their inability to distinguish whether a high score is subsequent to true knowledge or random guessing.⁷ Performance-based assessments are integral to medical education as they attempt to assess students in an environment that closely resembles what a doctor is likely to encounter in practice. As yet, there is no agreed standard of assessment within medical colleges in India.

Currently, the long and short clinical case format (viva-voce) is the performance-based assessment method in vogue in most medical schools in India. This method has several inherent flaws. First, the assessment of a student based on their presentation of a single long case is likely to be subjective and dependent on personal and intellectual preferences of the examiner.⁶ Second, the majority of cases used for such assessments may not be relevant to common clinical scenarios such as rheumatic mitral stenosis or pulmonary fibrosis, and may not test “must-know” knowledge or skills, such as obtaining an intravenous access and interpreting important biochemical tests. Apart from the low likelihood of the primary care physician encountering such cases in daily practice, “procuring” such patients for examinations is often a most tedious task for staff organising them. Third, reliability of this method is quite poor and the patient-student interaction is often unobserved, precluding any assessment of interactive skills.⁸ Nonetheless, it has great utility as a formative assessment tool, helping students during their course to improve upon various aspects of performance, including communication and clinical examination skills.⁹

Developed almost four decades ago, the OSCE has not found its place among routine performance-based assessment of students in India. Miller rated OSCE as the best performance-based assessment tool closest to reality. Its superiority over conventional examination systems has also been demonstrated in some studies.¹⁰ OSCE also has its limitations as it is quite time consuming, needs a large number of support staff, more materials and infrastructure to assess different stations, and at times may show high inter-assessor variability in scores.¹¹ Consequently, several modifications of the traditional OSCE have been developed, including the case-based discussion (CbD), mini-clinical evaluation exercise (mCEX), direct observation of procedural skills (DOPS), and mini-peer assessment tool (mPAT). All of these have been

studied in various patient care settings and found to have reasonably good reliability, validity, and acceptability.⁵

It is evident that the predominant assessment methods in India are unsuitable for a summative assessment of undergraduate examinees, destined to become primary care or first-contact physicians in the community. Any valid and reliable assessment should be able to test the knowledge and performance of the examinee under conditions as close as possible to the reality that the student is likely to encounter as a primary care physician; currently, this does not seem to be happening.

In short, the restructuring of both teaching and assessment methods is central to ensuring the ongoing quality of medical professionals trained in India. Indigenous data and research in these areas is a co-requisite to effect major policy changes by the MCI in this regard. Although it would be unwise to make any recommendation in the absence of solid evidence from Indian research, the use of long case and OSCE for continuous formative assessment, and OSCE, its modifications and/or simulation-based tools (where appropriate) for final summative assessment is likely the most logical way forward for medical assessment in Indian medical education given the adoption of such methods by the global medical education community. It might then be possible to derive “India-specific” assessment tools that are capable of achieving this goal and ensuring that Indian-trained medical professionals can continue to adequately serve both local and global communities.

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PEER REVIEW

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CONFLICTS OF INTEREST

Aneesh Basheer is on the editorial board of the Australasian Medical Journal.