



Comprehensive Integrated Assessment for Asian Medical Graduates

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ABSTRACT

Asia houses 45% of medical schools of the world and a large number of graduates migrate to developed countries of the western region. Most of these schools have acquired integration in undergrad medical education; however, assessment is still disintegrated in almost all, potentially risking the quality of medical graduates. This paper explains the need and concept of Comprehensive Integrated Assessment (CIA) for final year medical students and how it can be beneficial for graduating medical students compared to the traditional discipline-based assessment. The concept has developed by Establishment of Medical Education and Research (EMER), a group of medical educationists from different regions, working together for the development of medical education. The paper discusses the pros and cons of integrated assessment and provides suggestions for its implementation in medical colleges of Pakistan.

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Introduction

The primary objective of undergraduate medical education is to develop competent doctors with knowledge and skills to manage patients with the right attitude. The competencies required are integration of multidisciplinary knowledge with multi-dimensional skills demonstrated with professionalism. These competencies can be developed and nurtured through integrated curricula which are reported to provide students with stronger foundation of clinical disorders, and the ability to integrate and apply knowledge and skills of basic and clinical disciplines (1).

However, when it comes to assessment, most of the tools applied either test one aspect of curriculum or “integrate” but a few of the components required in over-all patient management. The concept can be exemplified by the process of driving a car. If the learner has knowledge and skills of different components required in the process of driving, like functioning of engine, adjusting rear-view mirror, starting engine, shifting gears and moving the driving wheel and is only assessed in performing a few of these together, then it cannot be concluded whether he/she can actually drive a car smoothly on the road. Similarly, even if a

graduating medical student has knowledge about diseases and their management, is able to take a patient's history and examine different body systems; it does not necessarily mean that he/she can also manage a patient comprehensively in a clinical set-up.

Out of a total of about 2600 medical institutes in the World, 1188 (45%) are within Asian countries, including India, Pakistan, Turkey, Bangladesh, Iran, Indonesia and Philippines are among the top 20 countries of the World with most medical schools (2) and most of them are also the countries from where maximum number of medical graduates migrate to developed western countries (3). Medical education standards in these institutes vary, but generally improving. Integration in teaching and learning is becoming a norm, however, assessment during the course and at the time of graduation still remains by-and-large effectively non-integrated or rather disintegrated, thereby jeopardizing the effectiveness of the whole process of education (4).

Final year examination in most of the Asian medical institutes comprises of a written test with Multiple Choice Questions (MCQs) in each discipline taught over the year or semester, followed by discipline based practical examination in the form of either Objective Structured Clinical Examination (OSCE), long cases, short cases or a combination of the three⁴.

When a learner encounters a "case" in this type of traditional assessment, the solution is sought only within the boundaries of the discipline. The problem stimulates schemas from the discipline of which the assessment is being conducted. Therefore, for the learner "a young girl with abrupt onset right iliac-fossa pain" can be acute appendicitis in General Surgery assessment, but it may never be a twisted ovarian cyst or an ectopic pregnancy. Similarly the same case in Gynecology assessment will not stimulate the learner's schema for diagnosing acute appendicitis. Thereby, making the whole assessment process non-comprehensive and unreal for graduating doctors.

This paper explains the concept of Comprehensive Integrated Assessment (CIA) for final year medical students and how it can be beneficial for graduating medical students compared to the traditional discipline-based assessment. The concept has developed by Establishment of Medical Education and Research (EMER), a group of medical educationists from different regions, working together for the development of medical education. The paper will also discuss the pros and cons of integrated assessment and provide suggestions for its implementation in medical colleges of Pakistan.

What is CIA?

The comprehensive integrated assessment (CIA) assesses the student's ability to systematically and ethically manage patients with different clinical presentations, associated complaints and co-morbid conditions. The assessment is designed in a way that students are compelled to integrate their knowledge and/ or skills learned of different disciplines and specialties during the final year of medical school (horizontal integration) or from previous years (vertical integration). Students understand, evaluate and solve the clinical problem with professionalism, ethical concerns and the right attitude.

Integrated assessment is, therefore, defined as "*an approach to assessment that covers multiple elements and/or units of competence from relevant competency standards. The integrated approach attempts to combine knowledge, understanding, problem solving, technical skills, attitudes and ethics into an assessment task to reduce the time spent on testing and make assessment more authentic* (5, 6)."

Rationale for CIA

Most medical institutes traditionally assess learners in major clinical specialties like Medicine, Surgery, Pediatrics, Orthopedics, Gynecology and Obstetrics at the time of graduation. This form of assessment tests the learners' knowledge and skills in a single discipline. However, in real world this is not how

doctors encounter patients. Real patients present with symptoms that are not discipline specific.

If learners are assessed for their integrated use of knowledge, skills, professional attitudes and holistic approach towards patients, their learning will be focused towards a comprehensive and integrated way of approaching a patient, thereby, encouraging the competencies to function as practicing clinicians in the real world.

The series of assessment of theory and performance, planned and executed for each of the subjects in final year medical school takes significant faculty time and effort; and carries huge cost for the institute. Moreover, keeping the learner under stress till the assessment is over (7, 8). In CIA, final assessment contains a combined paper-based (written, MCQ) theory and combined assessment of clinical skills, thereby, reducing duration of assessment, load for learners and faculty. This may also reflect positively in faculty satisfaction and cost of conducting assessment for the institute.

Global Scenario

Medical educationists throughout the world are in search of the most reliable method to assess competence of graduates since long. Van der Vleuten, Verwijnen, & Wijnen (9) in 1996 presented their fifteen-year experience of “*Progress Test*” and defined it as “*a comprehensive examination reflecting the (cognitive) end-objectives of the curriculum. It samples knowledge across all disciplines and content areas in medicine relevant for the medical degree*”. Their work emphasizes on assessing the progress of medical students regularly and comprehensively; it supports the view that if primary objectives of a program are not reflected in the assessment process, then the students will work towards acquiring the ability to successfully graduate rather than achieving the objectives of the program, “*hidden curriculum will prevail*”. The test has been implemented successfully in some of the medical colleges in Middle East (10).

North American Universities agreed on centralized comprehensive assessment over a century ago. United States Medical Licensing Examination that is conducted by National Board of Medical Education for local and foreign medical graduates before starting residency in USA, have shown predictive validity with direct correlation for graduates’ future performance as residents in different specialties (11).

Medical educators from United Kingdom and Australian Universities have also endorsed the reliability and validity of CIA type exams for high stake assessments, provided the process is well planned and executed with strict monitoring of quality controls (12).

Implementation Strategies

Approach to implementation

The intention of CIA is to make the process of assessment closer to real-life situation, more feasible and less stressful. Therefore, implementation needs to be tailored according to individual institutions’ circumstances. We discuss two strategies for implementing CIA, Simplistic and Idealistic. Since MCQs and OSCEs are the most commonly used tools of assessment in Asian countries, therefore, they are exemplified here for better comprehension.

i. Simplistic approach to implementation: The simplest way of changing a discipline-based examination into comprehensive integrated assessment is to integrate the tools from different disciplines into a single examination, without labeling the disciplines.

a. Theory exam: A single question paper with MCQs from different disciplines is given without the label of discipline on the examination paper. The students will solve the case/ problem without preemptively knowing the discipline from where question is taken.

b. OSCE: Stations from different disciplines combined together in a single OSCE examination, without letting the students know which station is from which discipline/ specialty. For example: out of 25 OSCE stations, 5 each

from Medicine, Surgery, Gyne-Obs and Pediatrics, and 2 each from psychiatry and orthopedics and 1 from dermatology.

c. Scoring: The scoring for these assessments can be easily performed by separating the marks for questions/ stations for each discipline/ specialty.

ii. *Idealistic approach to implementation:* This approach is closer to the real-life situation and assesses holistic approach to decision making. Every question in assessment is integrated in its' own right.

a. Theory exam: Each case scenario/ problem in the paper has integrated information with multiple health related issues. The students are expected to systematically analyze the question to give appropriate answer according to the question asked.

b. OSCE: Each station contains integrated information about the case and students are asked to perform the task accordingly. Performing the task includes demonstration of skill along with cognition of knowledge into performance

c. Scoring: The scoring for this assessment requires each question/ station needs to be given a percentage of marks from the disciplines/ specialties that are integrated into the question/ station.

Curriculum

The type of curriculum process, traditional or integrated, should not be a point of concern for implementing CIA because, irrespective of the process, the graduating medical students have completed the prescribed curriculum in all disciplines and systems. Therefore, the final assessment can be comprehensive and integrated across the board. In other words, the diversity of curricular interpretation and instructional strategy is no bar for CIA which may in effect be a unifier and provide a platform for a standardization of outcomes.

Content

In all the curricula, the variables that are assessed in final assessment at the time of graduation are similar and include knowledge about diseases, problem-solving and cognitive skills pertaining to history taking, physical examination, deriving diagnosis, ordering investigations, interpreting results, planning treatment, counseling, patient education, and performing procedures. The content of CIA should have a balance between different specialties and should be in accordance with the educational objectives of the program. A thoughtful "blueprint" for developing assessment tools can ensure the content validity of this assessment (13, 14)

Challenges

Faculty resistance: Any change in what is going on for years as 'routine practice' is not easily accepted by stakeholders. The paradigm shift from traditional to comprehensive assessment in medical institutes of Pakistan will not be any different. One of the major foreseeable obstacles is the resistance from faculty higher ups in different clinical departments on potential of losing the "power" and "control" over final assessment. To avoid this threat, the senior faculty members need to be assured of their position in assessment committee during the process. The role of this committee is vital for the success of CIA, as the committee, after proper training, will be overlooking and developing assessment blueprints, items/questions and examiners.

Resources: The initial cost for the bringing the change is another problem for consideration: Preparing faculty with well-defined training programs for item/question development and ability to be judicial examiners and provide appropriate feedback will require financial support from Universities or other supporting authorities. In addition, the whole process will require monitoring for potential sources of error and evaluations for quality assurance and improvement.

Conclusion

CIA is a promising method for assessment in terms of feasibility for developing countries. Use of appropriate testing tools by trained faculty can deliver a reliable and valid assessment for graduating medical professionals. We conclude that CIA has the potential to bring the much needed “uplift” to the standards of medical education in Asian medical institutes, by producing competent and holistically efficient doctors. Implementation of CIA in final assessment of medical graduates will require a change in mind set as well as a gradual enforcement of this methodology by institutions. Sudden imposition of any change may prove to be counterproductive as change is more effective when it is initiated from within, and there is a buy in of the institutes and its faculty members.

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