

Original Article

The Significance of Teaching - Learning Methodology in Fulfilling the Goals of Competency Based Medical Education

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This study was presented to the medical education unit of Christian Medical College - Vellore as a pre-requisite for the completion of the advanced course in medical education by the first author of the study.

Abstract

Title of the study: The significance of teaching-learning methodology in fulfilling the goals of competency based medical education.

Type of study: Descriptive study.

Background: This study was proposed and carried out in view of the country's ruling medical council proposing the implementation of competency based medical education, as dictated by the Attitude and Communication (AT - COM) module, in medical colleges across the country. The AT-COM module facilitates the implementation of 5 competencies to the Indian Medical Graduate (IMG) that would in turn play a role in his/her efficient health care delivery to society. Medical Postgraduates were selected to participate in the study, as they would be the significant medical educators in the time to follow.

Objectives: 1. To assess teaching-learning methodology and its role in strengthening the AT-COM competencies in medical students.
2. To assess and implement principles of competency based medical education to medical postgraduates.

Materials and Methods: Following an ethical clearance by the institutional ethical committee, this study was carried out in the Department of Physiology, CHRI. 5 postgraduates of Physiology were subjected to a questionnaire based assessment on their knowledge of the AT-COM module following which principles of AT-COM competencies were imparted to them over a period of four months on a bi-weekly basis. Following this, the most appropriate teaching method specific to the teaching of first MBBS students was matched with the AT-COM competencies.

Results: From this short-term study, it was inferred that most of the teaching during the first MBBS was directed towards facilitating two of the five competencies spelt out by the AT-COM module.

Conclusion: Since the first MBBS teacher facilitates only two of the AT-COM competencies viz. educating the IMG towards being a competent clinician and being a life long learner, it was concluded that the medical teachers of the successive years must facilitate the learning of the remaining three competencies i.e. educating the IMG in the principles of communication, professionalism and team work. Medical teachers can efficiently impart the competency of professionalism if the teaching-learning of medical ethics was scheduled at appropriate phases during the entire period of study of the IMG. Another observation brought out in this study was that medical postgraduates were not aware of the current guidelines in medical education that would facilitate their duties as a medical teacher. This could be addressed by imparting such guidelines to postgraduates during their period of study.

Key Words: AT-COM competencies, Teaching-Learning Methodology, Indian Medical Graduate.

Introduction

Medical education in India is currently facilitated towards providing health care to the evolving needs of the nation and the world. In order to achieve this, the country's ruling medical council has proposed implementing the practice of competency based medical education.

The thrust in this form of medical education is continuous evolution of thought towards medical education making it more learner-centric, patient-centric, gender-sensitive, outcome-oriented and environment appropriate. This is in turn dictated by the AT-COM competencies, that if used appropriately, will strengthen the attitude and communication skills of an Indian

medical graduate (IMG), which is mandatory to the fulfillment of the goals dictated towards the inception of competency based medical education.¹

This short-term study, conducted in the Department of Physiology at Chettinad Hospital & Research Institute, was undertaken to educate medical postgraduates on the AT-COM competencies and, in the process, decide the appropriate teaching-learning intervention in developing an IMG with the requisite knowledge, skills, attitudes, values and responsiveness so that he / she may function appropriately and effectively as a physician of first contact within the community.

Methods

Type of study = Descriptive study.

The study was carried out in concordance with standards dictated by the ethical committee of the institute.

The postgraduates of physiology, 5 in number, were subjected to a bi-weekly teaching-learning interaction on the AT-COM competencies. This was carried out over a period of 3 months with the learners taking a

pre-test as well as a post-test on the topic under discussion. The AT-COM competencies that could be imparted in the teaching-learning cycle while instructing principles of physiology, were selected from the AT-COM module, following which the appropriate teaching methodology that imparts the required competency to the IMG were spelt out.

The 5 competencies dictated by the AT COM module¹ include:

1. Clinician - who understands and provides preventive, promotive, curative, palliative and holistic care with compassion.
2. Leader and member - of the health care team and system.
3. Communicator - with patients, families, colleagues and the community.
4. Lifelong learner - committed to continuous improvement of skills and knowledge.
5. Professional - who is committed to excellence, is ethical, responsive and accountable to the patients, the community, and the profession.

Sl. No.	Competency Addressed	Teaching Intervention / Strategy followed to strengthen the Competency
1.	Demonstrate knowledge of normal human structure, function and development from a molecular, cellular, biologic, clinical, behavioral and social perspective.	<ul style="list-style-type: none"> • Didactic lectures. • Small Group discussions. • Video based teaching. • Smart board teaching. • Student seminar.
2.	Demonstrate knowledge of abnormal human structure, function and development from a molecular, cellular, biological, clinical, behavioral and social perspective.	<ul style="list-style-type: none"> • Applied physiology in didactic lectures. • Problem Based Learning. • Student Seminar.
3.	Demonstrate ability to perform physical examination that is complete and relevant to disease identification, disease prevention and health promotion.	<ul style="list-style-type: none"> • Hands-On Demonstration. • Objective Structured Practical Examination. • Chart discussion • Flash Card discussion.
4.	Work effectively and appropriately with colleagues in an inter-disciplinary professional health care team respecting diversity of roles, responsibilities and competencies of other professionals.	<ul style="list-style-type: none"> • Stressing the importance of integrated work conduct in the practical laboratory.
5.	Be able to communicate adequately, sensitively, effectively and respectfully with patients in a language that the patient understands and in a manner that will improve patient satisfaction and health care outcomes.	<ul style="list-style-type: none"> • Training of communication skills on this competency during mentorship interactions and student seminars.
6.	Be able to perform an objective self-assessment of knowledge and skills and continue learning and refine existing skills and acquire new skills.	<ul style="list-style-type: none"> • Encouragement of learners on reflective learning and putting forth the importance of self-assessment in the medical curriculum.
7.	Be able to develop a research question and be familiar with basic, clinical and translational research as it applies the care of the patient.	<ul style="list-style-type: none"> • Encouraging students to participate in medical research methodology that may be introduced as an elective.
8.	Be able to recognize and manage ethical and professional conflicts.	<ul style="list-style-type: none"> • Imparting principles of medical ethics in large group discussions facilitated by continuing medical education programs.

Table-1: Teaching – Learning methodologies directed towards strengthening the AT-COM competencies of competency based medical education

The objectives that fulfill the AT-COM competencies while training 1st MBBS students relevant to the subject of physiology include:

✓ **To bring out the student's role as a clinician:**

Demonstrate knowledge of normal human structure, function and development from a molecular, cellular, biologic, clinical, behavioral and social perspective.

✓ **To bring out the student's role as a member of a care team & system:**

Work effectively and appropriately with colleagues in an inter-disciplinary professional health care team respecting diversity of roles, responsibilities and competencies of the other professionals.

✓ **To bring out the student's role as a communicator with the patient's family, colleagues & community:**

Be able to communicate adequately, sensitively, effectively and respectfully with patients in a language that the patient understands and in a manner that will improve patient satisfaction and health care outcomes.

✓ **To bring out the student's role as a lifelong learner committed to continuous improvement of skills and knowledge:**

Be able to perform an objective self-assessment of one's own knowledge and skills and continue learning and refine existing skills as well as acquire new skills.

✓ **To bring out the student's role as a professional who is committed to excellence, is ethical, responsive and accountable to patients, community, and profession:**

Be able to recognize and manage ethical as well as professional conflicts.

Having charted out the relevant AT-COM competencies applicable to training medical students in the first year of their studies, the teaching - learning methodologies directed to strengthen the corresponding competencies were discussed in small group discussions during which time the teaching faculty of the department of study also contributed their point of view. This is presented in Table - 1.

Results

Figure-1 depicts the number of teaching-learning interventions that were used, in the institute of the study, by first year medical teachers so as to effectively address the competencies and objectives of the AT-COM module.

From this figure, it can be deduced that the preponderant teaching-learning intervention used during the first year of medical training is directed towards clinical skill development and training students to be life long learners.

Discussion

This short-term study opens one's eyes to the impact of teaching and learning methodology on developing the competencies that must be mandatorily implemented in competency based medical education.² The study

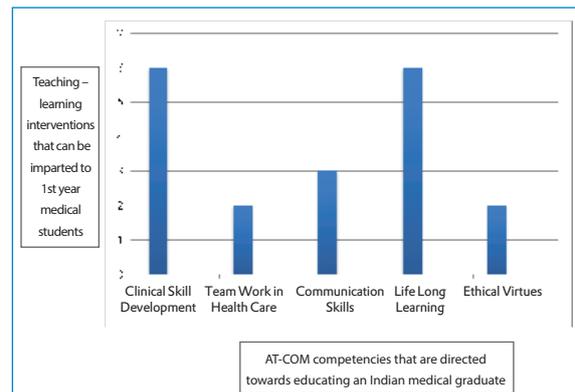


Figure-1: The AT-COM competencies and the number of teaching-learning interventions used to strengthen them, in first year medical students of the institute.

commenced with medical post graduates being made aware of essential principles of competency based medical education following which, the necessary teaching-learning interventions required to educate medical students on the same, were brought out.

It was noted that that during the first year of medical education, students were imparted six teaching-learning interventions to strengthen the domains of clinical skill competence as well as facilitation of students to be life long learners. The other domains mandatory to the development of the Indian medical graduate i.e. team work in healthcare, communication skills and ethical values were evidenced to have lesser teaching-learning interventions addressing them.

The primary inference of this short-term study is that it is mandatory for facilitators of medical education to address the domains of team work in healthcare, communication skills and ethical values to learners during the period following the first year of medical education. Of course, this must be done in addition to continuing medical education that facilitates medical students to strengthen their clinical skills as well as encourages them to be life long learners.

This study also brought out the fact that medical postgraduates, who will contribute to medical education in the days to follow, must be imparted the principles pertaining to competency based medical education.^{3,4} The postgraduates who participated in this study were made to answer a pre-study questionnaire on principles of medical education. They showed a significant improvement in the post-test questionnaire that they answered following the three months of the study.

It must be emphasized that this study paves the path for three outcomes in medical education that can be implemented in medical colleges with the advent of competency based medical education.⁵ This, in turn will allow the practice of competency based medical education to uplift the quality of healthcare within the society. These outcomes are highlighted in Table -2. It must also be remembered that the above-mentioned outcomes will facilitate the effective implementation of competency based medical education only if the chair and teaching faculty of each teaching department in a medical college specifically structure the teaching - learning exercise appropriately with regard to their subject of expertise.⁶

Short-term outcome	To develop a postgraduate who is aware of the importance of the AT-COM principles so the same can be implemented to the under graduate students during the teaching – learning process.
Intermediate outcome	To produce under graduates who will exhibit better professional conduct during the clinical years of training.
Long-term outcome	To implement a similar protocol in all the departments of a medical college.

Table-2: Outcomes of this study

In conclusion, this study shows that a competent teaching-learning methodology in medical education can allow a medical student to strengthen the three domains of Bloom’s taxonomy i.e. the cognitive, affective and psychomotor domains and also facilitate the student to ascend to the higher levels of the Miller’s pyramid.⁷

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