

Assessment of teaching curriculum in anaesthesiology for undergraduate medical students- A questionnaire based cross sectional study

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Abstract

Background of the study:The life- saving skills like airway management,artificial ventilation, establishing an intravenous access along with fluid management and oxygen therapy devices are clearly taught by fellow Anesthesiologists in a simple manner to theundergraduate medical students. As a medical teacher it is very important to assess the students' fund of knowledge, procedural skills, interest in learning and systems based approach in a periodical manner. **Aim and objectives:**To establish the insight about Anesthesiology to theundergraduate medical students and periodical assessment at the end of clinical posting. **Materials and methods:** The second part of III MBBS students (a total of 99 students) were enrolled in our study. A formulated teaching module was followed during their posting in our Anesthesiology department. At the end of clinical posting feedback was obtained from the students using questionnaire consisting of six questions. The data were analyzed using appropriate statistical methods **Results:** All the students who were enrolled in our study responded that the posting was interesting. 85% of students have told the practicaldemonstration was adequate and gave an insight into the subject of anesthesiology. 50% of the students felt that the period of posting was inadequate. 22 students gave some suggestions to improve our teaching curriculum. The top most suggestions from our study were extended duration of posting and more practical demonstration with hands on training.

Keywords: Anesthesiology, Undergraduate Medical Education, curriculum, Student feedback.

Introduction

Curriculum is a formal plan of educational experiences and activities offered to a learner under the guidance of an educational institution. In Medical colleges, curriculum is a broad set of "total planned learning program for any one student". Our curriculum for undergraduate medical students gives the least weightage to the subject of Anesthesiology (fifteen days each during III MBBS clinical posting and Internship).

The concept of "Andragogy" in the teaching-learning process further signifies the importance of feedback from students to evaluate teaching curriculum[1]. The periodical exercise is essential only if the students'

evaluation is analyzed and implemented further to overcome the pitfalls of existing teaching curriculum[2,3,4]. With the objective of 'learning by teaching' we conducted a study to evaluate our teaching curriculum as defined by our Medical council for 2nd Part of III MBBS in the department of Anesthesiology by questionnaire based feedback evaluation method.

Material and Methods

A total of 99 students of III year MBBS (2011 batch) of our college were enrolled in our study. The study was conducted in our department between March-August 2015. Ten students per batch were posted in Anesthesiology department for a period of two weeks. All thestudents were given a brief introduction about Anesthesia including the teaching schedule for entire

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posting at the beginning of posting. The students were allowed to undergo training in one of the four major theatres (General surgery, Orthopedics, ENT, Obstetrics

and Gynecology) along with pre-operative assessment clinic.

Teaching Schedule

Total duration of posting: 2weeks

Day	Time	Schedule
1	9.30-10.00am	Introduction to Anesthesia
	10.00-12.30pm	Theatre posting
2-13	9.30-11.30 am	Theatre posting
	11.30-12.30pm	Clinical discussion
14	9.30-12.30 pm	CPR training at skills lab
15	9.30-11.00 am	Internal Assessment MCQ & OSCE
	11.30-12.30 pm	Symposium followed by feedback session

During the theatre posting, the students were taught about the airway management techniques, anesthesia types and its techniques. They were allowed to assist and learn skills in Anesthesiology by the concerned faculty. During the second half of daily session topics on emergency medical care were discussed by teaching faculty and residents of our department. The topics covered were during 2nd to 13th day of posting.

1. Fluid management
2. Oxygen therapy devices.
3. Emergency drugs
4. Approach to a patient with acute respiratory distress
5. Approach to a patient with chest pain
6. Approach to a patient with sudden loss of consciousness
7. Electrolyte disturbances mainly hyponatremia and hyperkalemia

On 14th day of posting, the students were taught about Cardiopulmonary Resuscitation on mannequin at our departmental skills lab with individual hands on training. An internal assessment was conducted consisting of OSCE (10 stations) and MCQs (20) on final day of their posting. This was followed by a symposium on the topic which was given earlier to the students (Day 1 of posting). At the end of posting, the students were given a questionnaire consisting of 6 questions (Feedback form to fill up and return back to the Registrar of our department). We then analyzed the feedback forms which were filled up by the students for departmental assessment purpose. To maintain the neutrality of the topics covered the same teaching module was followed during rotation of students every 15 days.

Results

The results of our questionnaire based feedback evaluation as follows. The results are expressed as percentage.

Q.No.	Question	Response(Yes)	Response (No)
1	Whether the topics covered were interesting?	99 (100%)	0
2	Whether the practical demonstration was adequate?	85 (85%)	14 (14%)
3	Did the topics give insight into Anaesthesiology and critical care?	88 (88%)	11 (11%)
4	Whether the period allotted was adequate?	50 (50%)	49 (49%)
5	Any suggestions for improvement/alteration of curriculum?	22 (22%)	77 (77%)
6	If yes, list any two suggestions		-

Positive Feedback (Top 3)	Negative Feedback (Top 3)
<ol style="list-style-type: none"> 1. Excellent posting which I have ever attended 2. The best department of Tagore Medical College 3. Thank you for the skills lab training 	<ol style="list-style-type: none"> 1. Fast teaching 2. Overload of topics 3. MCQs were like PG questions

Top 3 Suggestions

1. Need extended duration of posting(15 days not adequate)
2. More practical demonstration needed
3. Need individual hands on training

Top 3 topics

1. Airway management skills- mask ventilation and intubation
2. Intravenous fluid management
3. Oxygen therapy devices

Discussion

An anesthesiologist may instruct medical students and other personnel in characteristics and methods of administering various types of anesthetics, signs and symptoms of reactions and complications, and emergency measures to employ. The way to address the question of who learns anesthesiology is to answer adult learners. Adult learners are those with strong motivation to participate in a set of experiences, such as a curriculum, to learn a specific discipline. The discipline that they want to learn is one that they are interested in, need to know, or both. A undergraduate medical student actively seeks education in anesthesiology [8,9]. Evaluation of teaching curriculum is defined as making a decision on the material taught and how useful it is to the students. For achieving this outcome based approach, there is a gradual shift in teaching curriculum evaluation, especially in medical education. Evaluation is also considered as a self-audit where a teacher can finely tune his teaching skills. It is characterised by a significant degree of collaboration among administration, faculty and students for both development and implementation of program.

In order to evaluate the efficiency by which the curricular content, methods of teaching, time schedule and practical skills acquired by the students, we conducted a feedback based evaluation (formative) for our teaching methods. Further student involvement in evaluating curriculum facilitates improvement by integration of planning and change process [10].

Evaluation is often considered to be a negotiated process [11]. It can be broadly classified as formative and summative evaluation. Formative evaluation is done when a curriculum is being developed and find out

whether it needs to be improved. Summative evaluation is done once the curriculum design is completed and whether it meets the designed objective [12]. Our form of evaluation was formative which targeted to find out the extent of which curriculum is implemented, vertical and horizontal integration patterns adopted, skills retention by students and the extent to which the system has improved the skill [13].

Anaesthesia and critical care is not given weightage in undergraduate period, it is more of a speciality oriented subject. Most of the under graduates have poor or no insight into this subject. To surpass this and provide quality contents to the students our advisory board designed a curriculum. The curriculum was designed with respect to the University norms. Though many studies were not conducted by our specialty in this regard but we got interested to find the effectiveness of our teaching curriculum [14,15]. The results of the study will be reviewed by our advisory board for future changes and improvement.

Medical education evaluation can be object, process or participant oriented. Though each has its own merits and demerits, we chose a participant oriented method, by giving feedback forms for our evaluation. It helps to know how the students perceived the programme and to encourage the teacher's skills. We used standard five questions in our feedback form with suggestions if opted yes for 5th question. The timely response to feedback is recognised by evaluation strategy [16]. Student's feedback is a type of formative evaluation, for better outcome. Out of 99 students participated in this study, all of them (100%) agreed the topics covered were relevant and interesting. 85% of the

students felt the practical session including basic life support (BLS), intravenous cannulation and endotracheal intubation was informative and useful. 14% voted the sessions would have been extended. But some suggestions were made. To make sessions interesting, scenario based, role play and small group discussion (<5) were suggested by our students.

88% of the students responded that the topics gave them sufficient insight to anaesthesia and Critical care. We used traditional lectures, power point presentations, bedside clinics (Perioperative demonstration), Symposium to teach the students. Few students (<5%) felt that pace was very fast though the contents were good. One student commented that better introduction class would have benefited him in understanding forthcoming sessions. Few students (2%) felt it was overload for undergraduate level.

Nearly 50% felt they had adequate period of posting (2 weeks). Some batches though the posting was for two weeks, the effective classes were not taken because of holidays. Since there was short time to cover all the topics, some were rushed which few students found it difficult to understand. 77% of students felt that there is no need for alteration of current curriculum. On the other side 22% suggested topics like Blood transfusion, medical emergencies, ECG, first aid management to get included.

Many useful suggestions were given to improve the curriculum. Few positive comments like multiple choice questions were at post graduate level, and many seem to have enjoyed the period of posting. Few students felt they were overloaded with lot of topic in a short span. Some students also felt the need interesting small group discussion, role play and scenario management at skills laboratory. One critical comment that the time table was not followed. Though we took maximum effort to keep the schedule, it was not followed when the regular theatre was busy. The topics were covered as time permitted. So our motto it is to find whether our method and content of syllabus was useful for final year students. It was greatly achieved. Though we still used the traditional lecture, bedside clinics, it was appreciated by many of them. There were various shortcomings, as rightly pointed out by them like fast teaching will be rectified in future. This study has also shown the insight how the students perceive the subject. Their opinion, suggestions, critical comments will be considered seriously.

Conclusion

The anesthesiologist's responsibility in teaching undergraduate medical students is twofold. To understand all aspects of education and then to scientifically study educational outcome so that future students of anesthesiology will be more effectively taught and better prepared as experts in the field. With this motive we are planning to expertise our teaching methodology for training Interns in the future. The same batch of students will be evaluated after their internship training in our department to standardize our curriculum and teaching methodology. The suggestions noted from our study will be taken up for rectifying or upgrading our teaching skills.

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