

Objective Structured Clinical Examination (OSCE) for Medical Students - A Viable Alternative

Yerrapragada Srinivas¹, Perumalla Karthik Babu², Amirineni Krishna Chowdary³,
Sharad Daga⁴

^{1,2}Associate Professor, Department of General Surgery

^{3,4}Senior resident, Department of General Surgery

Kamineni Academy of Medical Sciences and Research Centre, LB Nagar, Telangana

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Abstract:

Introduction: Examinations and evaluations are a key part of medical education examinations. Assessment of the teaching and teaching methods form an important and integral part of training a medical student.

Methodology of teaching improved with time and over years. But the methods of assessing the student's knowledge and skills have limited scope and are not satisfactory. Objective structured clinical examination (OSCE) is a newer and different method of assessing the students.

Aim: Our objective was to and introduce, plan and organize the OSCE at the end of each surgical posting. We wanted to first evaluate the clinical performance of students posted in surgery. Secondly hoped to check the efficacy of existing teaching methods and finally to act on the feedback and plan for improvement.

Methodology : We have conducted OSCE for all the students of third semester after completion of their first 6 weeks of surgical posting. 15 stations were designed with a view to test their knowledge in history taking, bed side manners, examination skills and ethics.

Results: OSCE was conducted for 131 students. After the evaluation it was found that although students had good theoretical knowledge, their method of clinical examination of the patient was inadequate. Individual and structured feedback was been given to them after the assessment feedback obtained from the students showed that they were very keen and interested in OSCE. Compared to the traditional methods of assessment, they felt OSCE was a good evaluation tool and a learning experience with uniformity and objectivity.

Conclusion: There was agreement all round that OSCE is a good tool for evaluation, teaching and learning. We plan to establish OSCE as a routine modality for assessing our students at the end of each surgical posting.

Key Words: OSCE, Clinical examination, Medical students, Assessment

Introduction:

OSCE is a method of clinical and practical examination where predetermined decisions are made on the competencies to be tested and checklists incorporating important evaluable skills are prepared. Evaluation is the integral part of any teaching method. There are many methods of teaching and evaluation. Search always continues to evolve a method with reliability and uniformity. Conventional clinical and practical examinations have some defects¹. First, there is inbuilt variability due to student, patient or examiner factors. Marks awarded by one examiner most of the times differ from those awarded by another for the same performance. Moreover there will be variability in the marking by the same examiner, from time to time or even on the same day. Secondly, assessment is not competency based, where only the final conclusion is

tested and not the process of arriving at that conclusion. It usually becomes a mere theoretical 'question and answer' session between the examiner and the examinee. Thirdly there is no scope for systematic feedback. Lastly, it is very difficult to organise clinical examinations for large number of students. A large number of patients and examiners would be required. In addition there will be financial, time and space constraints. OSCE is designed to overcome some of these deficiencies.

Methodology :

Organization of OSCE needs a lot thinking and advance planning. We have organized and conducted OSCE for third semester students at the end of their first surgical posting in the department of general surgery

Competencies to be tested are agreed upon and checklists are prepared to evaluate. Number of stations were planned with students spending 3-5 minutes at each

Correspondence:

Dr. Yerrapragada Srinivas MS, FRCS

Associate Professor (Department of General Surgery)
Kamineni Academy of Medical Sciences and Research Centre
LB Nagar, Telangana , PIN – 5000568, email – drysr@hotmail.com

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station. Three types of stations were established.

1. Procedure stations: candidate performs certain tasks and these are observed and marked as per agreed check lists.

2. Response Stations: Candidate responds to certain questions in the form of MCQ, simulated patient problems, case histories, lab data, specimens etc.

3. Rest stations: Provides a break for candidates

Stations are designed to assess history taking, competence of physical examination and attitudes. Presence of an examiner is not required at most response stations

Assessment in OSCE is by overall marks and also by individual stations. This provides scope for detailed feedback for teachers as well as students. Marking is objective and hence validity of exam is increased. The stations/questions were framed and the students carried with them the standard answer sheet and answers /observations recorded using standard predetermined criteria (figure 1).

The questions displayed at various stations for OSCE are shown in the Tables 3 and 4.

At the end of examination the students' answer sheets and the examiner's checklists were marked according to previously agreed scheme by all the examiners. Feedback was discussed with faculty members and students.

Results and Discussion:

A total of 101 students out of 131 students belonging to third semester participated in this exam (Table 1). 8 students secured a score more than 100 for a maximum of 150 marks. 84 students secured between 50-100 marks. 39 students secured a score less than 50. It is observed that students are having a good theoretical knowledge but secured less marks for questions pertaining to clinical examination. Overall class average of marks secured was 50.07 %. Students were able to secure 51.6 % in the theory based questions. They secured only 44.6% in procedure stations (Table 2). Most of the students did not introduce themselves to patients, failed to take proper consent and explain the patient about the procedure of examination. This is a lacuna in bedside manners and became a learning point for the faculty. It reminded us of the need to highlight bedside discipline especially for students new to clinical postings. After the exam all the students opined that the exam was lively and interesting. Examiners opined that there was uniformity in assessing all the students as all the stations had similar questions to all the students.

OSCE has a good utility value and many advantages. It can be used in any situation where clinical

competence of a student is to be tested. It is very useful in providing feedback to both students and examiners. Areas of deficiencies can be identified more precisely and the student can correct them easily.

If you plan and use a grid sheet for marking both individual and group performances, scores (for a particular step / skill) can be obtained. The grid also gives a break up of the various components of a skill. For example, if a student is asked to look for liver enlargement, we can check whether they have explained to the patient, started palpation in the right iliac fossa and palpated towards costal margin, or they checked for upward enlargement by percussion (Figure6). This provides a very good feedback to the teacher regarding the efficacy of teaching. If a particular skill or a component of a skill is done incorrectly by the majority of students, the teacher needs to focus on that.

Junior examiners can be kept at some stations as checklists are provided. A large number of students can be examined in a shorter time and variety keeps the student's interest alive. All are given same time and similar questions. This uniformity gives student satisfaction.

Communication skills are integral to the education and effective function of physicians. There must be specific instruction and evaluation of these skills as they relate to physician responsibilities, including communication with patients, families, colleagues and other health professionals². OSCE also helps in improving and evaluating communication skills.

However there are some disadvantages. It is often criticized that students knowledge and skills are tested in compartments. This can be overcome maybe by combining a long case with OSCE. OSCE is more difficult to organize³. Organization and planning requires a lot of time and cooperation between examiners.

Conclusion:

There was agreement all round that OSCE is a good tool for evaluation, teaching and learning. Individual attention could be given to students and their deficiencies could be detected and corrected. This cannot happen with traditional evaluation where the examiner cannot be observing students all the time. Variability and bias could be eliminated, and OSCE provided a uniform method of assessment. It automatically becomes a teaching method.

We plan to establish OSCE as a finely tuned instrument used to evaluate clinical skills, attitudes and behaviours that are considered standards in the care of the patients. It is hoped that the competencies demonstrated by students in the OSCE will enhance

their clinical skills and enable them to deliver better quality care to their patients⁴.

References

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figure 3

OSCE CODE SHEET

Skill steps										
	1	2	3	4	5	6	7	8	9	10
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										

figure 1

Instructions to Observer: Mark (✓), if yes/done: Mark (X), if no/not done.



figure 2

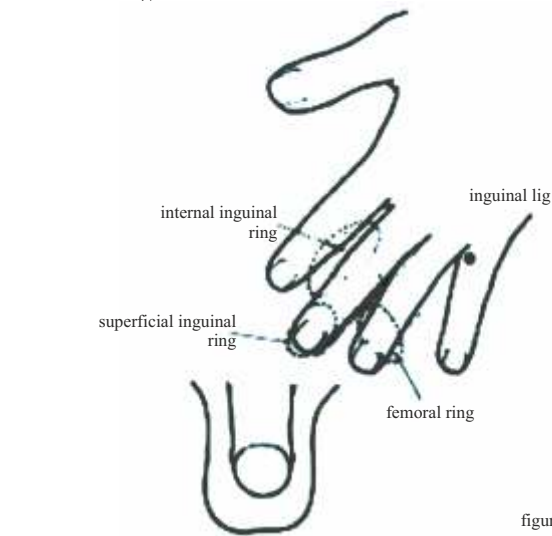


figure 3



figure 4

OSCE CODE SHEET

Sl. No	Skill steps	Candidates										Total	LM		
		1	2	3	4	5	6	7	8	9	10				
1	Explanation -1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	X
2	found cough -1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
3	Position -1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
4	show in All 10 provided to Avide 70	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
5	show in All 10 shape-action	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
6	Abdominal exam 10/10	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
7	Position of Heart/pleurals -1/2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
8	make at least 10	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
9	round dullness (1/2)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
10	Count spaces 10/10	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Instructions to Observer: Mark (✓), if positive; Mark (X), if not done

Total: 4 5 5 7 6 4 6 4 5 4 5

Names of Observers: Dr. P. Bhatnagar

Signature: Dr. Lax Bhatnagar

figure 5

Tables -

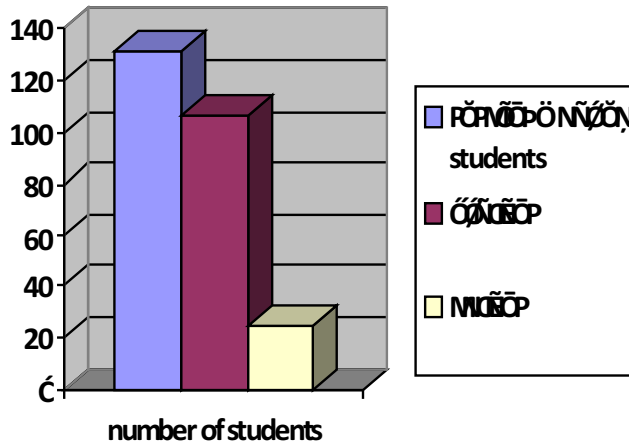


Table 1. Total number of students attending the test

Table 3. Questions displayed at OSCE

1. Perform general examination in this patient? (5x2=10)
2. Name the following tests shown in these pictures? (5x2=10) (Figure 2, figure 3, figure 4)
3. Give 5 differential diagnosis for this neck swelling (5 x 2 = 10)(figure 5)
4. Name three symptoms and two signs with which a patient of carcinoma of breast patient can present to you? (5x 2 =10)
5. Show the method of palpating the liver, spleen and shifting dullness in this patient (3 + 3 + 4 =10)
6. Examine the axillary lymph nodes in this patient (5x2=10)
7. A).Label the following parts in an ulcer (5 marks)
B).mention different types of edges in an ulcer with diagram (5)
8. Examine any 5 peripheral pulses in this patient?(5x2=10)

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References

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9. Mention 5 symptoms of arterial insufficiency of lower limb?(5x2=10)
10. Name two swellings each which show the following characteristics (5x2=10)
 - a) Moving with deglutition.
 - b) Expansile cough impulse
 - c) Trans illumination test positive.
 - d) Moving with protrusion of tongue.
 - e) Compressible swelling
11. Mention 5 causes of edema of lower limb? (5x2=10)
12. Mention 5 differences between lipoma and sebaceous cyst on clinical examination (5x2=10)
13. Draw a diagram of abdomen and label all the regions (10)
14. Mention 5 symptoms each of hyperthyroidism and hypothyroidism? (10x1=10)
15. Name 5 perforators in the lower limb (5 x 2 = 10)

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