OBJECTIVE STRUCTURED PRACTICAL EXAMINATION AS AN ASSESSMENT TOOL IN PHYSIOLOGY

Fasna K. A1, Neenu V2

1Assistant Professor, Department of Physiology, KMCT Medical College, Kozhikode.
2Assistant Professor, Department of Physiology, KMCT Medical College, Kozhikode.

ABSTRACT

BACKGROUND
Assessment is the process by which the teacher and the student gain knowledge about student progress. The conventional practical examination is beset with several problems. The Objective Structured Practical Examination (OSPE) can assess clinical skills, knowledge and attitude in an appropriate, stepwise, methodical, objective and time-orientated manner.

MATERIALS AND METHODS
A cross-sectional study was conducted to introduce the concept of OSPE to first year undergraduate medical students and to evaluate student's feedback about OSPE as an assessment tool in physiology practicals. OSPE module was introduced for 60 first year MBBS students and practical examination was conducted by means of OSPE. Student's perception towards OSPE was assessed by means of their response to a standard questionnaire.

RESULTS
83% of students felt OSPE as a good form of evaluation tool for the practical exercise and most of them opined that structured pattern of evaluation covers the appropriate cognitive domain in assessing the appropriate knowledge and comprehension. 90% felt it to be useful than the conventional examination pattern.

CONCLUSION
The students' feedback shows that OSPE is an acceptable useful assessment tool for practical skills.

KEYWORDS
OSPE, Assessment Tool, Student Feedback, Physiology.

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BACKGROUND
Assessment drives learning. It is a goal oriented process by which teachers analyse whether the educational outcomes of any particular course is achieved or not. It is most effective when it reflects a multidimensional integrated learning and compares educational performance with educational purposes and expectations. It works best when it is continuous, formative and summative and judges goals, objectives, course content and teaching-learning strategies.1,2

Medical education implies assessment of students at regular intervals as a source of learning and providing the basis for enhancing the competence level. Knowledge, skills and attitude are the three main pillars of medical education.1,2 The assessment methods should be able to assess all the three elements rather than limited to only one of these components. Medical educationists’ are trying to develop more reliable means of assessing students' knowledge, clinical skills and competencies.

An ideal assessment method should be reliable, valid, cost-effective, feasible and acceptable to the students and teachers and must have good educational impact. No single method of assessment is ideal. Every method of assessment has some strengths and weaknesses. The conventional practical and clinical examination method is associated with a number of problems in terms of validity and reliability. In conventional method, the students' scores are likely to be affected by the type of patient and examiner. Moreover, marks given by the examiner show the overall performance of student and are not a true representative of student’s attitude and clinical competence.3,4 On the basis of these problems associated with practical and clinical examination especially in terms of their outcome, a need for the development of an assessment method that can improve students’ learning, performance and competences has arisen. This has led to the development of Objective Structured Clinical Examination (OSCE).

OSCE is an assessment tool in which the components of clinical competence such as history taking, physical examination, interpretation of laboratory results and patient management are assessed. In 1975, the OSCE was modified to assess practical knowledge and skills in the basic sciences and termed OSPE.3,5
The Objective Structured Practical Examination (OSPE) can assess clinical skills, knowledge and attitude in an appropriate, stepwise, methodical, objective and time-oriented manner. In terms of the Miller’s framework of development of clinical competencies, which focuses on four levels of assessment—knows, knows how, shows how and does, the OSPE assesses the third - shows how level; focusing on the assessment of performance of specific skills in a controlled setting.1

OSPE examination consists of about 10-20 stations. During the examination process, students are rotated through these stations. Each station is designed to test a component of practical competence. OSPE stations include both static (unobserved/response stations) and interactive (observed) stations. Students respond to questions of the objective type, interpret data, record their findings for a given experiment or perform clinical examination within a specified time. At Observed Stations (OS), there will be examiners with agreed checklists to score the student’s performance and the students have to perform skills before the examiner.3,4

The importance of students’ feedback towards the assessment tools in undergraduate medical education has been increasingly recognized. Feedback is an evaluative response, which gives information on all aspects, experiences, difficulties, interpretations and proposals from learners. The perception of students can be used for a series of reforms in the process of improving the quality of teaching and assessment methods. This can thus be employed to improve educational programs in order to facilitate in-depth learning and satisfaction amongst students. Students’ feedback can be used by instructors to improve their teaching.

This study was designed to introduce the concept of OSPE to first year undergraduate medical students and to determine the student perception and satisfaction regarding OSPE as a method of assessment tool in human physiology practicals.

MATERIALS AND METHODS
A cross-sectional study was conducted in the Department of Physiology, KMCT Medical College, Manassery, during August 2015 to September 2015.

Study group- 60 first year MBBS students of KMCT Medical College.

All the faculty members in the department were given an orientation regarding OSPE system. The OSPE module was introduced to 60 first year MBBS students by short lecture and a role play organised by the faculty members. 5 examples were shown to the students.

After discussing with senior faculty members, 10 OSPE stations were constructed according to the predetermined learning objectives. It was then sealed in the examination envelopes together with OSPE sheets, response sheets and scoring key separately for each day.

Students were divided into 3 batches of 20 each on the basis of their roll number. Total 10 OSPE stations and one rest station were arranged. Mock test was conducted by the faculty members and technicians. Seven stations were response stations (static stations) composed of questions that tested their cognitive domain such as interpretation of graphs and charts, diagnosis of clinical conditions from photographs and calculation of clearance. At three Observed Stations (OS), students had to perform skills before the examiner - like examination of 7th cranial nerve, percussion of scapular areas, elicit biceps jerk, etc. At these stations, there were examiners with checklists to score the student’s performance. Stations were independent. One station was kept as the rest station and students rotated through all stations with 2 minutes at each station. After completion, response sheets were collected and scores of each student were assessed by objective key.

Examination was conducted in 3 days in two sessions with 10 students in each session. The students’ perception towards OSPE was assessed by means of their response to standard questionnaire so that its value as an assessment tool can be evaluated. Participants were instructed to indicate their opinion by ticking one of the two alternatives - agree or disagree.

RESULTS

<table>
<thead>
<tr>
<th>Questions in the Questionnaire</th>
<th>Agree</th>
<th>Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>OSPE is a good form of evaluation tool</td>
<td>50</td>
<td>10</td>
</tr>
<tr>
<td>Exam is well structured and uniform</td>
<td>54</td>
<td>6</td>
</tr>
<tr>
<td>Reduces examiner bias</td>
<td>52</td>
<td>8</td>
</tr>
<tr>
<td>Assess appropriate knowledge and comprehension</td>
<td>50</td>
<td>10</td>
</tr>
<tr>
<td>Assess relevant practical skills</td>
<td>48</td>
<td>12</td>
</tr>
<tr>
<td>Highlighted the area of weakness</td>
<td>46</td>
<td>14</td>
</tr>
<tr>
<td>Increase the confidence in doing clinical examination</td>
<td>48</td>
<td>12</td>
</tr>
<tr>
<td>Will reduce the chances of failing in the exam</td>
<td>50</td>
<td>10</td>
</tr>
<tr>
<td>Useful than the conventional examination pattern</td>
<td>54</td>
<td>6</td>
</tr>
<tr>
<td>Can be used as an evaluation tool along with conventional assessment methods</td>
<td>50</td>
<td>10</td>
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</tbody>
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Table 1. Students’ Perception Towards OSPE (n=60)
83% of students felt OSPE as a good form of evaluation tool for the practical exercise. 90% of students perceived it as a well-structured and uniform assessment tool. 87% felt as this structured pattern of exam reduces examiner bias. 83% opined that structured pattern of evaluation covers the appropriate cognitive domain in assessing the appropriate knowledge and comprehension. 80% felt relevant practical skills are assessed. 77% of students opined that this pattern highlights the area of weakness in the concerned topic and 80% felt that it will increase their confidence in doing clinical examination. 83% felt that this pattern of examination will reduce the chances of failing in the exam. 90% felt it to be useful than the conventional examination pattern and 83% opined that this can be used as an evaluation tool along with conventional assessment methods.

DISCUSSION
The conventional practical examination is beset with several problems. The final score indicating overall performance gives no significant feedback to the candidate and are not based on demonstration of individual competencies. Skill-based assessments are of importance in addition to knowledge-based tests. OSPE has been found to be objective, valid and reliable tool for assessment and eliminates examiner bias. 1,4,6

A good assessment tool should be acceptable to those using it; feasible, valid and reliable. OSPE has been accepted by medical students as a fair assessment tool, which covers a wide range of knowledge, minimises the chance of failing and highlights the area of weakness. Feedback from students suggests that OSPE is an objective tool in evaluating practical skills. Students provided positive feedback about the quality of OSPE performance in terms of its structured and uniform pattern and its objectivity. In addition to the above points, OSPE ensures integration of teaching and evaluation. 1,3,7,8

OSPE is now believed to meet the deficiencies of the conventional system of practical examination. 9,10 Different studies have shown that OSPE is a reliable device that has a good capacity to differentiate between practical skills of different students.

CONCLUSION
OSPE enables assessment of theoretical, practical and problem-solving skills at multiple stations. The feedback received regarding this evaluation tool provides evidence that OSPE is an acceptable, useful assessment tool for practical skills. The feedback provided scope for improvement and refining the method. It serves as a tool for testing multiple dimensions of student performance because it tests both skills as in performance exercises and knowledge. Present study was helpful in sensitising the student towards OSPE.

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REFERENCES