

## Research Article

# Objective structured practical examination for formative assessment of post-graduates

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### ABSTRACT

**Background:** Formative evaluation has been carried out in the graduate training programme of most medical schools. These assessments play an important role in helping a student to become aware about his/her shortcomings and plan a course correction before appearing for the final assessment. Periodic formative assessment also helps the teachers/mentors in medical education to evaluate the level of interest and appreciation of a subject. Observed structured practical examination as a tool for formative assessment of post-graduate students is an interesting option, which tests the cumulative skills acquired by a student. A study was undertaken to implement OSPE for postgraduate students followed by a feedback questionnaire to assess their perception of this type of evaluation.

**Methods:** An OSPE designed as per the various aspects of the post graduate course in pathology was taken by the post graduate trainees. The results of the OSPE and the residents' opinion on the feedback questionnaire were analysed. The results were compiled on a data sheet and analysed using Microsoft Excel.

**Results:** The results of the OSPE showed an average to above average performance by the postgraduates. The feedback questionnaire showed a consensus of OSPE based formative assessment to be a better alternative to conventional examination.

**Conclusions:** The study shows that formative assessment in a post graduate is an essential component of the programme and that OSPE as a tool for such an evaluation is well accepted by the students. Formative assessment by OSPE needs to be incorporated into the medical post graduate programme.

**Keywords:** Formative, OSPE

### INTRODUCTION

Learning is till date being driven by the anticipation of assessment. In the recent times medical education is undergoing extensive revision and the faculty are being trained in a variety of methods of assessment including many innovative methodologies.

On enrolling as a faculty at my institution, I was exposed to the vistas of medical education technology as part of a Medical Council of India workshop. During the workshop, I was introduced to the concept of Observed Structured Practical examination (OSPE).<sup>1,2</sup> Though a lot of stress has been placed on undergraduate teaching, the same has not been the case with postgraduate teaching.

The postgraduates, barring a few institutions are only exposed to a final assessment after a 3 year long course. OSPE can be introduced for formative assessments of postgraduate so as to provide a platform for introspection and course correction.

Incorporation of OSPE comprehensively assesses the examinee for their cognitive, psychomotor and affective learning abilities. OSPE is a modification of OSCE for evaluating practical skills in pre and para-clinical subjects. It has been felt that the traditional examination tends to overlook the demonstration of individual competencies and the scoring system measures only the global performance of the examinees.<sup>3,4</sup> Studies have shown that OSPE has been found to be objective, valid

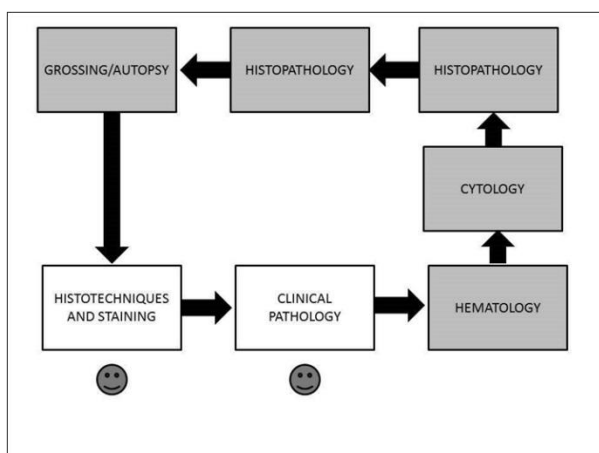
and reliable tool for assessment which also eliminates examiner bias.<sup>5</sup> OSPE examination consists of requisite number of stations. Each station is designed to test a component of experimental competence. At “procedure stations” students are given tasks to perform on sample and instruments only.

At all such stations there are observers with agreed check lists to mark the student's performance. At other stations called "response stations", students write the answers of the objective type questions or interpret data or record their findings of the previous procedure stations.<sup>4</sup>

The present study was undertaken to determine the student perception and satisfaction regarding OSPE as a method of formative assessment of laboratory exercise in pathology for postgraduates. The aim was to develop and implement an Objective structured practical examination for Postgraduate students in Department of Pathology.

**METHODS**

After obtaining clearance from the institutional ethics committee, an OSPE was developed incorporating all aspects of pathology and tested on post graduate students in pathology. The OSPE included a total of 7 stations – one each for Histotechniques and staining, Clinical Pathology, Cytology, Hematology, Gross Pathology and two stations for Histopathology.



**Figure 1: Schematic diagram of the stations.**

The schematic representation of the stations is given in Figure 1. Of these stations two stations i.e. histotechniques and clinical pathology were designated as procedure stations. The remaining stations i.e. Cytology, hematology, Gross Pathology and Histopathology was designated as response stations. An observer was stationed at both the procedure stations with a pre-decided checklist to score the candidates.

Each station had a structured question which had to be answered by performing specific skills. The requisite instruments, reagents and samples were placed at each

station. At the end of every 15 minutes, the participant moved to the successive station till completion of all 7 stations. All participants were given the same set of questions.

The OSPE was critically analysed in terms of the candidate’s performance and the feedback questionnaire submitted at the end of the examination by the students. The feedback questionnaire focused on the candidate’s perception of OSPE as a methodology for assessment. The candidates had to select from 3 responses for each question: Yes, No and Can’t say.

**RESULTS**

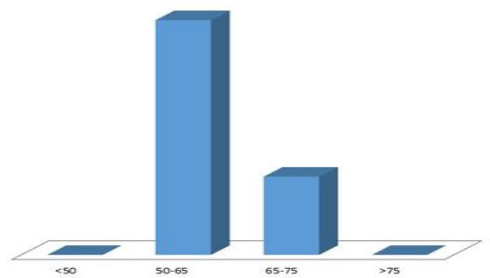
The OSPE was conducted at the department of Pathology, AFMC on 11 August 2015 and was taken by the postgraduates’ batch of 2014-17. On conclusion of the OSPE the performance was average to above average, with a mean score of 62% (Graph 1).

Each student was individually interviewed and counselled about his/her strengths and weakness based on the OSPE evaluation. Analysis of the feedback questionnaire (Table 1) showed that 80% of the candidates were aware of the level of information asked about.

**Table 1: Student perception of OSPE.**

	Agree	Can't say	Disagree
OSPE is can be a better form of examination and learning process	5	0	0
OSPE is well structured and unbiased	5	0	0
Covers appropriate knowledge area consistent with learning objectives of the syllabus	2	1	2
Relevant practical skills were assessed	5	0	0
OSPE is less useful than conventional examination	0	1	4
Decreased the chances of failing compared to conventional examination	1	1	3
Highlighted the area of weakness in the subject and in practical skill	5	0	0
Duration in each station was sufficient	3	0	2
Aware of the level of information asked	4	1	0

60% of the candidates felt that the time duration at each station was insufficient and that the OSPE covered appropriate knowledge areas consistent with the learning objectives of the syllabus. Most candidates were sceptical as to whether this format of examination would decrease the chances of failing in comparison to a conventional practical examination.



**Figure 2: Students' performance on OSPE.**

However, all candidates were in agreement that OSPE assessed relevant practical skills and highlighted their area of weakness. The candidates unanimously agreed that OSPE was a well-structured and unbiased format and that it was a better form of examination. Overall the feedback reflected that most students felt that OSPE evaluation to be a better alternative to the conventional examination.

## DISCUSSION

Pathology is the subject which forms the basis of clinical disease. Conventional practical test is pervaded with issues, the most important being that the overall score is not a reflection of demonstrable individual competences and there is no provision for a feedback to the candidates. In contrast, OSPE helps assess different desired components of competence better than conventional examination.<sup>1,5</sup>

It is an objective, valid and reliable method. It in particular gets rid of variation due to examiner bias and has demonstrated to have a better discrimination index on merit.<sup>3</sup> Interpretative exercises are the most relevant part of OSPEs. The main objectives of an OSPE are: to delineate assessment of process and product; to satisfactorily sample the various skills to be tested; provide a logical approach to assessment; bring in objectivity and generate a feedback to the students and teachers. OSPE based exercises are relevant as they assess cognitive, psychomotor and affective domains of the student.<sup>1,5</sup>

The evaluation of OSPE by students highlighted some areas that need to be tweaked for subsequent

implementation, such as inadequate time at procedure stations. OSPE was perceived as a stressful experience by some of students, which may be due to the fact that this was the first time that an OSPE has been conducted in our department.

Hence, it was a new experience for all which probably made them anxious about it. From the students' point of view, OSPE was acceptable and generated wide appreciation. Feedback from the students indicated that students were in favour of OSPE. 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.

## CONCLUSION

In conclusion, OSPE serves as a tool for testing multiple dimensions of a postgraduate student's performance because it tests the skills acquired during a course.<sup>4</sup> It can be used as a valuable tool for the formative assessment of postgraduates in an endeavour to hone their skills and knowledge in a pursuit to mould them into competent pathologists. The study was helpful in sensitizing the postgraduates towards the concept of OSPE.

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