

PERCEPTION OF STUDENTS AND FACULTIES ABOUT OBJECTIVE STRUCTURED PRACTICAL EXAMINATION (OSPE) AS A METHOD OF ASSESSMENT OF COMPETENCE IN BIOCHEMISTRY AS AGAINST THE CONVENTIONAL METHOD

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ABSTRACT

Background: Undergraduate medical curriculum have defined objectives and competences that medical student need to acquire. Basic practical skills are one of them and assessment through objectivity and structuring of questions has gained importance in the practical evaluation. **Aims & Objective:** To determine the student and faculty perception regarding OSPE as a method of assessment of competence in Biochemistry practical session as against the conventional method.

Material and Method: The study was conducted on 150 first MBBS students. After the orientation, students were assessed by conventional method initially and then by OSPE for their practical skills. Assessment of perception was done by taking feedback from the students and faculties using reflection, structured questionnaire and marks obtained by student's by the two methods. **Result:** There was no significant difference in the mean of students' score in OSPE with conventional method. In both the assessments students believed that questions were linked to the curriculum with clear objectives. 77.9% agreed that OSPE reduced bias and there was uniformity in assessment. 58.2% preferred it over conventional exams, 77.9% wanted OSPE to be continued as a regular assessment tool despite being time consuming and stressful. 40.15% students reflected that the time given was too short in OSPE. Faculties' feedback reflected that apart from well known advantages of OSPE, there was a scope of giving immediate feedback in the conventional method and hence should be included for formative assessment. **Conclusion:** OSPE was well appreciated by the students. OSPE tests different components of competency better and it should be included in summative evaluation to improve students' performance

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INTRODUCTION

Governing bodies have defined objectives and competences in undergraduate medical curriculum for medical students that they need to acquire to become a doctor. The purpose of these objectives and competences is that student should acquire knowledge, develop skill and attitudes (1-2). But a single examination is not sufficient to assess all the functions like assessing knowledge, comprehension, skill, motivation and feedback (3). Basic practical skills are essential competencies that student should develop during their undergraduate medical course and trainers should ensure that students have acquired these skills (4).

Intake of a huge number of students to medical colleges makes evaluation of medical students a complex process. The deficiencies of the conventional method of examination are well known. Although grading or marking should depend only on a student's performance yet variability in experiments selected and examiners both affect the grading in conventional examination. Variation in scoring may also be due to

subjective method of awarding marks by different examiners. In such examinations the individual competencies cannot be judged. Due to various deficiencies in the conventional practical examination several attempts have been made in medical and other institutions to get the solution to these problems. Therefore adoption of a valid method of examination is a necessity. Now a days objective structured practical examination (OSPE) is an accepted tool in the assessment of practical skills both in Pre and Para clinical subjects. Assessment through objectivity and structuring of questions has gained importance in the practical evaluation. Experience and experimentation will inevitably result in the refinement of the OSPE as a tool for learning and evaluation (5).

In view of the various lacunae of the conventional system of practical examination, we planned to introduce OSPE for first MBBS students. Any change must be thoroughly tested before it can be implemented and become a well-defined and time tested assessment methodology. Hence, the present study was carried out to evaluate whether OSPE could be a method of

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assessing practical skills and to explore the student satisfaction and faculty perception regarding OSPE as a method of assessment of competence in Biochemistry practical session as against the conventional method in the subject of biochemistry for the first time in our institute.

Aims and Objectives

1. To introduce OSPE as a method of assessment of practical session in the subject of Biochemistry.
2. To explore the student satisfaction and faculty perception regarding OSPE as a method of assessment.

MATERIALS AND METHODS

The study was conducted in NKP Salve Institute of Medical Sciences and Research Institute, Nagpur in the Department of Biochemistry after IEC approval was taken. The first MBBS students from 2018-19 batch of our institute were the participants for this study. After successfully completing the syllabus pertaining to the topic on ‘Reactions of carbohydrates’ and after performing carbohydrate reactions by traditional method, OSPE notification was announced 15 days in advance. Amongst 150 students only 127 students consented. After the orientation, students were assessed by conventional method initially and then by OSPE for their practical skills, each carrying 25 marks. In conventional method students were asked to perform all tests of monosaccharides and table viva was taken by different faculties from department of biochemistry. During OSPE students were asked to rotate around 4 procedure stations, each station was designed to complete a task comfortably within 3 minutes. Assessment of perception was done by taking feedback from the students and faculties using method of reflection, structured questionnaire and marks obtained by student’s by the two methods. The score obtained in each of the test were entered on the Microsoft excel sheet. The difference between two means was compared by applying unpaired t test by using Epi-info software 7.2.2 .2 by CDC and results were expressed in percentage.

RESULTS

There was no significant difference in the mean of students’ score in OSPE (17±5.4) with their mean score in conventional method (17.2±3.6) and p=0.01. This has been shown in Figure 1. In both the assessments, students believed that questions were linked to the curriculum with clear objectives. 77.9% agreed that OSPE reduced bias and there was uniformity in assessment. 58.2% preferred it over conventional exams, 77.9% wanted OSPE to be continued as a regular assessment tool despite being time consuming and stressful. 40.15% students reflected that the time given was too short in OSPE. These aspects of students about OSPE have been shown in Figure 2. Student feedback analysis and faculty feedback on OSPE is depicted in Table 1 and Table 2.

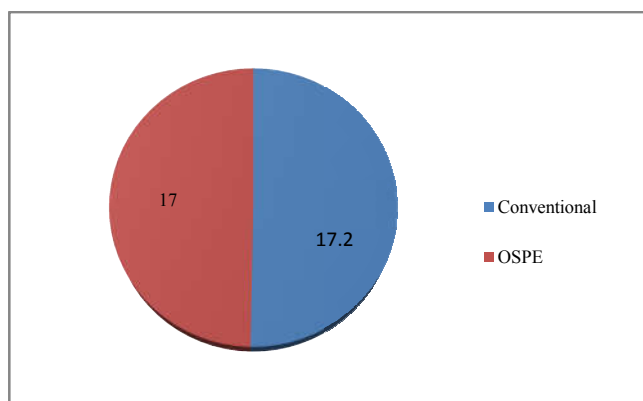


Figure 1 Mean score of students by conventional and OSPE methods

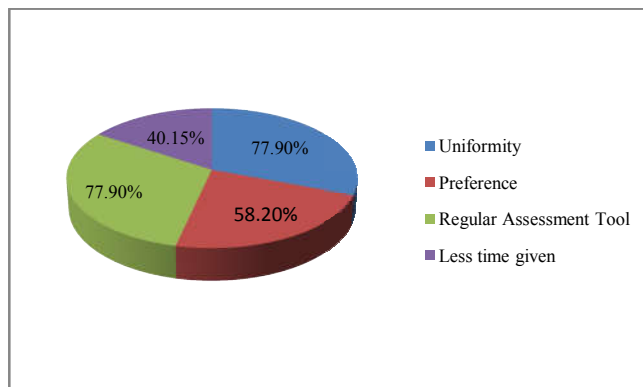


Figure 2 Student’s most appreciated feedback aspects about OSPE

Table 1 Feedback analysis of students about OSPE

Sr. No.	Statements	Agree		Disagree	
		No. of students	Percentage	No. of students	Percentage
1	Questions asked were relevant and linked to the curriculum	122	96.063	5	3.93701
2	Objectives were clear and understandable	118	92.9134	9	7.08661
3	Covers wide range of topics and helps to improve the knowledge	113	88.9764	14	11.0236
4	Procedure stations given to demonstrate skills were relevant	109	85.8268	18	14.1732
5	Were OSPE stressful	75	59.0551	52	40.9449
6	OSPE eliminate bias	99	77.9528	28	22.0472
7	OSPE conducted fair	116	91.3386	11	8.66142
8	OSPE is easier to pass	74	58.2677	53	41.7323
9	Provides chance to score better	109	85.8268	18	14.1732
10	Sufficient time was given	51	40.1575	76	59.8425
11	Should be followed as method of assessment	99	77.9528	28	22.0472

Table 2 Feedback from faculty on OSPE

Sr. No.	Statements	Agree		Disagree	
		No. of Faculties	Percentage	No. of faculties	Percentage
1	OSPE tested objectivity of procedure	8	100	0	0
2	OSPE measured practical skills better than	8	100	0	0
3	Conventional method OSPE eliminates examiner bias	8	100	0	0
4	OSPE should be conducted at frequent Intervals	8	100	0	0
5	OSPE should be introduced for evaluation	7	87.5	1	12.5
6	Performing OSPE is not feasible as a evaluation tool	2	25	6	75

DISCUSSION

Although the marks obtained by both conventional and OSPE methods were fairly similar, an attempt was made to make practical exam more objective and unbiased by introducing OSPE for the first time in department of biochemistry. Several studies have shown it to be an effective tool for assessment to assess the cognitive, psychomotor and affective domain of the students (6). A study has shown that students become more focused and motivated if they are assessed for their capability of integration, application and synthesis of knowledge and if their skills are observed and graded (7). The OSPE covers a broad range of skills much wider than a conventional examination. The scoring is objective, since standards of competence are preset and agreed check lists are used for scoring (8). Examiner variability can be reduced by adopting structured practical examination. In addition to the above points, OSPE ensures integration of teaching and evaluation. A large number of students can be tested within a short time.

In the university examination by conventional method, external examiners used to complain about the extensiveness of the examination. Students used to complain about the irrelevant questions varied in difficulty asked by the examiners and also the subjectivity of the examination giving rise to much variation in the scores (9,10). Feedback from students indicated that they were in favor of the OSPE compared with the conventional method. Student feedback about such educational methodologies is a useful basis for modifying and improving medical education. The ultimate aim of such feedback is to identify areas of strength or weakness so that steps can be taken to rectify the deficiencies. The faculty feedback reflected that such assessment tested objectivity, measured practical skills better and eliminated examiner bias to a greater extent. The process is, however, not without limitations. Arrangement of facilitators for OSPE is the most difficult task in our study. There is risk of observer fatigue if the observer has to record the performance of several candidates on lengthy check lists. All stations must invariably demand only equal time. Ensuring this, therefore, requires careful organization.

Almost all faculties said that apart from well known advantages of OSPE, there was a scope of giving immediate feedback in the conventional method which was missing in the OSPE and hence should be included for formative assessment.

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