**Original**

# OSPE in Pharmacology: Comparison with the conventional Method and Students' Perspective Towards OSPE

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**A B S T R A C T**

Objective structured practical examination (OSPE) a new assessment tool has been implemented in a few medical colleges. This method of assessment was planned to be implemented in our medical college, before which the authors planned to compare the scores obtained by the students by conventional method of examination and OSPE. The marks obtained by the two methods of examination were compared and a feedback was collected from students to study their perspective towards OSPE. There was statistically significant difference in the mean of the scores obtained by conventional method and that of OSPE. The students' perception about OSPE was good. This study enabled the authors to standardize the pattern of OSPE and implement it.

## Introduction

The objective structured practical examination (OSPE) is a new assessment tool to assess students in pre and paraclinical subjects. Very few medical colleges have incorporated OSPE as an assessment tool. The term OSPE was introduced in the year 1975 as a modification of objective structured clinical examination (OSCE) used for evaluation of clinical subjects. OSPE has a better validity as this tool tests individual competency.[1]

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. Therefore adoption of a valid method of examination is a necessity. 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. Various attempts have been done to bring the practical examination towards objectivity so that they may become valid and reliable.[2] The OSPE method was tested on the basis of the success of OSCE used earlier. Non awareness of the benefits of OSPE and examination of a large number of students for a particular course with limited facilities are the major problems.

In view of the various lacunae of the conventional system of practical examination, we planned to introduce OSPE for our students. Any change must be thoroughly tested before it can be implemented and become a well-defined and time tested assessment methodology.

Hence this study was designed to compare the scores obtained by the students by two different examination systems and to evaluate their attitude towards OSPE.

## Methodology

Institutional ethics committee approval was obtained before conducting the study. The study was conducted at the department of Pharmacology, Kasturba Medical College, Manipal, Manipal University. Students from 3rd to 5th semester study pharmacology and the sessional exams are usually conducted at the end of every semester. Informed consent was obtained from the medical students before starting the study. Students who had taken the exam by conventional method during the third semester were subjected to OSPE during the fourth semester.The students who had attended any one exam were excluded from the study. All the students who attended both the semester exams were included for

the study. A total of 237 students participated in the study.

OSPE consisted of ten stations wherein there were 8 unobserved stations and two observed stations. The eight unobserved stations included exercises on prescription writing, problem solving exercises, dose calculation, adverse drug reaction causality assessment, pharmacoeconomic exercise, critical analysis of drug advertisement and spotters. One station was for technique demonstration wherein the examiner had to observe the student and allot marks based on a checklist. The last station was on drug formulations which was an interactive station. The marks obtained in the OSPE examination were compared with that obtained in the third semester practical examination. At the end of the OSPE examination a feedback was collected from students to evaluate the method of OSPE, quality of the examination and student perception of validity and reliability. This questionnaire was a modified and validated version of a previous questionnaire.[3]

## Statistics

The mean scores of the two systems of examination faced by the students were compared by T test. Z test was used to correlate the theory and practical marks obtained during the two sessional examinations. Frequency analysis was done to study the attitude of students towards OSPE.

## Results

A total of 237 students participated in the study. Both the exams were conducted for a total of 60 marks. The mean of the scores obtained by conventional method of practical examination was 40.29 (8.15) and that of OSPE was 43.41(5.86) which was statistically significant $p<0.05$. The correlation between

the theory and practical marks of conventional and OSPE were done. The correlation coefficient between theory and practical assessment by conventional method was 0.573 while that for OSPE was 0.718. The Z test showed a significance of 0.006. The marks ranged from 16 to 54 by conventional method whereas by OSPE the marks ranged between 22 to 56. The feedback from students was analyzed and the percentage of students who agreed, disagreed or had no comments are shown in the table. Majority of students felt that examination was fair (65.8%), well conducted (75%) and a wide area of the subject was covered (66.6%). However, only few students (39.9%) felt it to be less stressful than conventional method. Most of the students agreed that they were fully aware of the nature of exam (67.1%), time for each station was sufficient (72.8%), instructions were clear and unambiguous (81.1%) and technique station was fair (76.8%). However the students felt that the sequence of stations need to be changed.

The students felt that the OSPE method of examination was a practical and useful experience and that personal traits like personality, gender ethnicity do not influence the pattern of exam.

## Discussion

The present study was done to compare two systems of practical examination. The study showed a significant difference between the two types of examination and a correlation between theory and practical examination scores. The variability in the scores was also less with OSPE.

Assessment influences student learning. It is important to ensure that tests used for assessment meet the educational goals and are able to evaluate competence levels of the students. Objective structured practical examination (OSPE) is being increasingly used for student assessment. Student feedback on this format is essential for improving and refining the assessment tool. The present study was aimed at obtaining students' perceptions regarding OSPE. A majority of the students perceived the assessment by OSPE as fair. This is because all students were given the same exercises thus minimizing the element of luck. Questions asked were also objective, thus reducing examiners' variability in students score. Checklist was also provided to the examiners. The assessment was thus objective unlike the conventional method which is subjective.[4] In addition, students felt that personality, ethnicity and gender did not affect assessment which attribute to elimination of bias on the part of the examiner. This could account for the difference in scoring between OSPE and conventional method of assessment.

As in studies conducted elsewhere, a majority of the students felt that OSPE covered a wide area of knowledge and skills in a short time period like the conventional method of assessment.[3] But only few students found it to be less stressful. This is consistent with other studies where students perceived OSPE as being stressful.[5] It is not clear whether this could be due to lack of confidence or preparedness or anxiety about the new format of assessment. Students felt that there was a need to change the sequence of stations. Stations with more number of questions or calculations should be followed by those with comparatively fewer questions.

Overall, student's perception about OSPE was positive. This is in accordance with other studies which demonstrated that students acceptance of OSPE was good.[1]

## Conclusion

Though OSPE requires extensive planning and team work, yet it has many attributes–objectivity, tests individual

competencies, assesses wide area of knowledge and skills of a large number of students in a short period of time and minimal examiner variability.

Since there was a significant difference in scores obtained by students in two formats of assessment and was well accepted by students, OSPE should be implemented as it can enhance the standard of assessment. Students' feedback will help us to standardize the format of OSPE. The university authorities should accommodate the views of faculty and students regarding OSPE which will help the process to evolve and be implemented as a teaching learning strategy.

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**Table 1.** Feedback of students' towards OSPE

| Questions | Agree | Disagree | No Comments |
|---|---|---|---|
| | (Percentage of students) | | |
| **A.   OSPE evaluation** | | | |
| Exam was fair | 65.8 | 13.6 | 20.6 |
| Wide knowledge area was covered | 66.6 | 4.4 | 29 |
| Exams were well conducted | 75 | 4.8 | 20.2 |
| OSPE was less stressful than other exams | 39.9 | 25.9 | 38.2 |
| Students were aware of level of information | 45.6 | 16.2 | 39.2 |
| **B.   Quality of performance testing** | | | |
| Fully aware of nature of exam | 67.1 | 10.1 | 24.8 |
| Time at each station was adequate | 72.8 | 12.7 | 14.5 |
| Instructions were clear and unambiguous | 76.8 | 2.2 | 16.7 |
| Sequence of stations were logical and appropriate | 39.5 | 20.2 | 40.3 |
| **C.   Student perception of validity and reliability** | | | |
| OSPEexam scores provided a true measure of essential skills in pharmacology | 41.2 | 16.7 | 42.1 |
| OSPE was apractical and useful experience | 73.2 | 2.2 | 24.5 |
| Personality , ethnicity and gender will not affect the OSPE process | 66.6 | 4.4 | 29 |