

A Trial of OSPE as a formative assessment tool in Physiology

Mohan M. Sagdeo¹, Shubhada Gade^{2,*}, Anagha Sahasrabudhe³, Suresh Chari⁴

¹Professor & HOD, ²Associate Professor, ³Assistant Professor, Dept. of Physiology, ⁴Professor, Director Research & Medical Education Unit, Dept. of Biochemistry, NKP Salve Institute of Medical Sciences, Nagpur, Maharashtra

***Corresponding Author:**

Email: shubhagade@gmail.com

Abstract

It's a well known fact that assessment drives learning. Assessment for practical skills in medical education has lot of scope for improvement. Objective Structured Practical Examination (OSPE) has been considered as one such method. Feedback is given to the students and teachers after the examination. Hence OSPE was implemented as a Formative assessment tool for the 150 first MBBS students for the Clinical examination of cardio vascular System to know its Feasibility.

Five stations were designed based on the clinical examination of cardio vascular system. A structured and validated check list was used. A feedback questionnaire was designed for the students and the faculty about the contents, timing of stations, their overall experience about OSPE, its feasibility and objectivity.

It was observed that students performed better on Blood pressure station, followed by auscultation of Heart sound and least on percussion of Heart borders.

Majority of the students (90%) found OSPE as a better method of assessment as compared to traditional practical method, 92% said OSPE prepares them better, 95% found OSPE is a better stimulus for study, 98% found it more reliable, 95% were happy about the time allotted to each station, 88% said it removes luck factor part from the examination, 68% found it less stressful, 90% students were happy for the use of check list.

The faculty was happy with the feedback part associated with OSPE. But preparing a checklist was a time consuming task.

We conclude that OSPE is useful in Physiology for formative assessment as it gives feedback to the students and teachers and provides integration in teaching and learning.

Keywords: OSPE, Cardio vascular System, Integration of teaching and learning.

Introduction

It's a well known fact that assessment drives learning. Assessment for practical skills in medical education has lot of scope for improvement. The deficiencies observed in these examinations are also well known. The objectivity and the validity of practical examination is always a matter of concern. Conventional practical examination has several problems especially in terms of its outcome.⁽¹⁻³⁾ Although marks allotted should reflect the competencies of the students there is lot of variability in experiments selected and the examiners and both affect grading /marking hence making the examination highly subjective. In such examinations marks awarded reflect only the general performance of the students without assessing the individual competencies.

Hence a more valid, more subjective method of practical examination is the need of the hour if we really want to assess individual competencies of the students.

Objective Structured Practical Examination (OSPE) has been considered as one such method. This method is derived from Objective Structured Clinical Examination (OSCE) By Harden and Glessoon.^(4,5) The OSPE assesses practical competencies in an objective and structured manner with direct observation of students' performance during planned clinical test stations.⁽⁴⁻⁷⁾ OSPE is a method where students are observed on various steps with the help of a checklist.

Feedback is given to the students immediately after the examination. And OSPE also gives feedback to the teachers as well. The use of OSPE for formative assessment has great potential as the learners can gain insight into the elements of clinical competencies as well as feedback on personal strengths and weaknesses.

NKP Salve Institute of Medical Sciences and Research Centre (NKPSIMS & RC) Nagpur, Maharashtra, India is affiliated to Maharashtra University of Health Sciences (MUHS) Nashik. Human physiology is a preclinical subject which is taught in the first two trimesters of MBBS Course. The assessment is usually by traditional practical examination where the examiner mainly focuses on the overall performance rather than observing the students performing the steps. Feedback which is an essential component of formative assessment is totally missing in traditional practical/clinical examination. There is no feedback given to the students.

Hence there is a need for more objective and structured assessment method for formative assessment. So it was decided to implement OSPE as a Formative assessment tool for the first MBBS students in the department of Physiology for the Clinical examination of cardio vascular System.

Aim

- To know the Feasibility of OSPE as a Formative Assessment tool in Physiology.

Objectives

- To obtain students feedback on OSPE as a tool of assessment.
- To obtain Teachers' feedback on OSPE to know its strength and weaknesses.

Materials and Method

The study was carried out in the department of Physiology, NKP Salve Institute of medical sciences and Research Centre Nagpur. Ethics approval was obtained from the Institutional Ethics Committee.

No of students involved: 150

Number of teachers involved: 15

The students were informed about OSPE and a written informed consent was obtained from the students. Participation was strictly voluntary. A dummy check list was shared with the students as they were being exposed to OSPE for the first time.

Faculty orientation program was conducted in the department for the teachers. Five stations were designed based on the clinical examination of cardio vascular system. A structured check list was prepared by all the staff members of the department and got validated by the senior faculty members of the department and Medical Education Unit faculty of the Institute. A feedback questionnaire was designed for the students and the faculty about the contents, timing of stations, their overall experience about OSPE, its feasibility and objectivity.

All the stations were procedure stations. The stations were as follows

1. Record the blood pressure of the given subject.
2. Percuss Right Heart Border of the given subject and mention two causes of its shift.
3. Percuss Left Heart Border of the given subject and mention two causes of its shift.
4. Auscultate First heart Sound and mention its features.
5. Auscultate Second Heart Sound and mention its features.

Each station carried 10 marks and was of 4 minute duration.

Passing of 50% marks was decided as the cut off %.

After the OSPE a feedback is obtained from the students and faculty. The responses were analysed by using 5 Point Likert Scale ranging from Strongly Disagree to strongly Agree. The results of the examination were discussed with students about their strengths and weakness. The faculty also received feedback by studying the checklist.

The weaker areas were once again emphasized in the next practical session.

Results

132 students participated in the study as the participation was voluntary.

1. **About the performance of the students:** We observed that students performed better on Blood pressure station, followed by auscultation of Heart sound and least on percussion of Heart borders.(Table 1)
2. **Feedback from the students about OSPE:** Majority of the students (90%) found OSPE as a better method of assessment as compared to traditional practical method, 92% said OSPE prepares them better, 95% found OSPE is a better stimulus for study, 98% found it more reliable, 95% were happy about the time allotted to each station, 88% said it removes luck factor part from the examination, 68% found it less stressful, 90% students were happy for the use of check list (Table 2).
3. **Feedback from the faculty:** Majority of the faculty was happy with the feedback part associated with OSPE. But preparing a checklist was a time consuming task. The faculty also opined that OSPE can be undertaken only once or twice in a year as it involves too many faculty at the same time. But they also mentioned that over a period of time the department can have its own OSPE bank in the form of checklists for various systems.

Table 1: Students' score on 5 stations in Percentage

SN	Station	Score 100% (in %)	Score 75-99% (in %)	50-74% (in %)	< 50% (in %)
1	Measurement of Blood Pressure	41	35	18	6
2	Percussion of Left Heart Border	11	36	13	40
3	Percussion of right Heart Border	14	14	32	40
4	Auscultation of Ist Heart Sound	35	31	20	14
5	Auscultation of IInd Heart Sound	30	27	14	29

Table 2: Analysis of Feedback questionnaire
SD (Strongly Dis Agree) D: Disagree CS: Can't Say A: Agree SA: Strongly Agree

SN	Question	SD	D	CS	A	SA
1	OSPE Is a better method of assessment as compared to traditional Clinical examination	0%	0%	10%	63%	27%
2	OSPE prepares students thoroughly for the task	0%	0%	8%	52%	40%
3	OSPE is a better stimulus for learning than the traditional examination	0%	0%	5%	37%	53%
4	Is OSPE a reliable and fair examination?	0%	0%	2%	34%	64%
5	Timing of OSPE stations was right.	0%	0%	5%	55%	45%
6	The stations covered all important and relevant points in the syllabus	0%	0%	15%	43%	42%
7	OSPE makes the students aware of areas of weaknesses.	0%	2%	8%	44%	46%
8	OSPE minimizes luck factor in examination.	0%	1%	11%	65%	23%
9	OSPE is less stressful as compared to traditional examination.	5%	16%	10%	48%	20%
10	The use of checklist in OSPE makes the examination fair and unbiased.	2%	2%	6%	46%	44%
11	OSPE helps in emphasizing all the steps in the clinical examination.	3%	2%	5%	68%	22%

Discussion

NKP Salve Institute of medical sciences & research Centre is affiliated to MUHS Nashik where summative examinations and internal assessment examinations are conducted in the traditional pattern. OSPE is conducted as a formative and summative examination in selected medical colleges across India and allotted a limited percentage of Marks.⁽⁸⁾

An attempt has been made at NKPSIMS to test the feasibility of OSPE as a formative assessment tool in the department of Physiology. The results are highly encouraging. We conducted OSPE with only 5 stations due to the constraints of the limited faculty in the department. We took help of 5 teachers from the Medical Education Unit so as to finish the examination on the same day at multiple settings.

Students were satisfied with OSPE as all the students were exposed similar questions with the same difficulty index, the use of checklist removed bias or subjectivity on the part of examiners. Some students found OSPE also as a stressful experience probably due to the checklist with the examiners but this anxiety can be eliminated if the students are repeatedly exposed to OSPE. Similar findings were reported by Pinaki Vani et al.⁽⁹⁾

Duffield reported to inculcate critical thinking ability of the students with OSPE.⁽¹⁰⁾

Two more studies reported favorable results in favor of OSPE, a study conducted by Abraham et al.⁽¹¹⁾ at Maleka Manipal Medical College concluded that students were in favor of the OSPE compared with traditional practical examinations and a study at a Pakistan Medical College by Sandila et al.⁽¹²⁾ found that the OSPE was an effective tool to discriminate between good and poor performers in physiology practical examinations.

With the encouraging results that we received, we strongly recommend OSPE as an effective formative assessment tool for any subject as we did it with 132 students.

Limitations of the study

We had to restrict OSPE to only 5 stations due to staff crunch and a large number of students.

Conclusion

OSPE is useful in Physiology for formative assessment as it gives feedback to the students and teachers and provides integration in teaching and learning.

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