

Original Research Article

Objective structured practical examination (OSPE) as a tool in formative assessment of II MBBS students, in pathology

Ranga Rao D., Parameswari Babu U.*, Kalyan Chakravarthy C. V., Ramya N.

Department of Pathology, Dr. PSIMS and RF Chinnaoutpalli, Andhra Pradesh, India

Received: 20 October 2017

Accepted: 20 November 2017

*Correspondence:

Dr. Parameswari Babu U.,

E-mail: parameshpatho@gmail.com

Copyright: © the author(s), publisher and licensee Medip Academy. This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

ABSTRACT

Background: Assessment drives the student learning. Regular periodical assessment not only improves learning habits, but also enhances the competence in all levels of medical education. Traditional practical examination is more subjective. It depends on examiners subjectivity, varying difficulty level of various experiments, and also internal marks variation etc. These flaws can be overcome by newer methods like OSPE. The aim of the study was to implement OSPE as a tool of internal assessment for practical skills in the II MBBS. To compare this with traditional practical examination (TPE). To obtain the students and faculty feedback regarding OSPE as a tool of assessment.

Methods: A cross sectional study was carried out for 158 students in II internal pathology practical examination for six days in the second week of September 2016 at Department of Pathology, Dr. Pinnamaneni Siddhartha institute of medical sciences & Research Foundation, Chinnaoutpalli. Faculty and students were sensitized; blueprint were used to arrange twenty OSPE stations for the exercises conducted as per TPE and for the same 25 marks as per TPE. Simultaneously, all the students were subjected to both TPE and OSPE at the same time and venue. TPE was assessed by two professors and OSPE by separate eight faculty members independently without interaction with the students. The procedural stations were evaluated by using checklist and the response stations which consisted of short answers and MCQs, facilitated correction. Feedback was given to the student on their performance and feedback was obtained from the students and faculty regarding OSPE by questionnaire with Yes/No answers.

Results: Performance score of students in OSPE (13.73 ± 2.49) was higher as compared to TPE (9.27 ± 1.86) which was statistically significant. Based on the response to the questionnaire, students perception towards OSPE was analyzed. Majority strongly agree OSPE to be fairer, more transparent and objective in comparison to TPE. In contrast, all the faculty members unanimously opined that OSPE was difficult to arrange, time taken and faculty versus students ratio was high for evaluation. Though, the faculty (91%) overall opined that OSPE should be included as a method of assessment.

Conclusions: Present study revealed that OSPE was acceptable, feasible and reliable to the students as well as for faculty for the internal assessment in pathology. Opinions of both students and faculties strongly agreed that OSPE is more effective objective assessment tool.

Keywords: Assessment, Feedback, Objective structured practical examination, Traditional practical examination

INTRODUCTION

Traditional practical examination makes it a difficult method of assessment of practical and clinical skills, due

to lack of scope to assess the psychomotor, performance as well as communication skills of the student. Traditional methods are more subjective, and marks awarded in these methods are based on the overall

performance of the candidate and not on their individual skills.^{1,2} Moreover, this traditional method is monotonous and time consuming. In addition, the scoring of marks is based on the examiners variability for the students, thus decreases its reliability and reproducibility.

The term Objective Structured Practical Examination (OSPE) is derived from the objective structured clinical examination (OSCE) which was initiated in 1975 and later modified by Harden and Gleeson in 1979.^{1,3} It is used to assess the competency, which is based on objective testing through direct observation.

It includes objectivity and uniformity in questioning and evaluation of students. It consists of several “stations” in which examinees are expected to perform a variety of practical tasks within a specified period of time against criteria formulated to the practical skills, thus demonstrating competency of skills and attitudes. OSPE has been used to evaluate those areas most critical to perform by students, such as the ability to obtain or interpret data, solve a problem, teaching skills, and communication skills. Lots of studies have proved that OSPE is a valid and reliable assessment tool and decreases examiner bias in various levels of medical education. It is now an accepted tool for the assessment of practical skills in pre- and para-clinical subjects.

In the present few years, the importance of student’s feedback regarding the assessment methods in medical education has been increasing. It has been considered a

significant parameter towards more effective and interactive teaching and also provides us motivation towards further improvement.

METHODS

The present descriptive, cross sectional study was carried out for 157 students in II internal pathology practical examination for six days in the 2nd week of September 2016 at Department of Pathology, Dr. PSIMS and RF, Chinnanoutpalli.

The students and faculty were sensitized; blueprint was used to arrange 20 OSPE stations for the exercises conducted as per TPE and for the same 25 marks as per TPE. Simultaneously, all the students were subjected to both TPE and OSPE at the same time and venue. TPE was assessed by two professors and OSPE by separate eight faculty members independently without any interaction with the students. The procedural stations were evaluated by using checklist and the response stations which consisted of short answers and MCQs, facilitated correction. Feedback was given to the student on their performance and feedback was obtained from the students and faculty regarding OSPE by questionnaire with Yes/No answers.

RESULTS

As all the students appeared for both the tests and response rate of the students was 100%.

Table 1: Students perception of OSPE.

Questions	Response of 158 students	
	YES	NO
Students were sensitized about the nature of OSPE and displayed well in advance	87% (137)	13%(21)
OPSE was well structured, relevant and uniform	81%(128)	28% (30)
Time required was more and sufficient time was given at each station	85%(134)	15%(24)
Covers appropriate knowledge area consistent with learning objectives of syllabus	72%(114)	28%(44)
OSPE was more stress full compared to TPE	26%(41)	74%(117)
Immediate feedback was given to students on their performance in OSPE	97%(153)	3%(5)
OSPE was more transparent, fair and objective	89%(140)	11%(18)
Provided opportunities to learn more	82%(130)	18%(28)
OSPE should be included as a method of assessment in pathology practicals.	91%(144)	9%(14)

As seen Table 1, the mean ± SD performance score of students were 9.27±1.86 and 13.73±2.49 for TPE and OSPE respectively. The performance score obtained in OSPE were significantly higher compared to TPE. The correlation between performance scores of OSPE and TPE were (r = 0.48) statistically significant (P < 0.001).

Based on the response to the questionnaire, students perception towards OSPE was analyzed. 87% of students

strongly agree OSPE to be fairer, more transparent and objective in comparison to TPE. Only 11% of the students were not sure if OSPE was better than TPE. 97% of students gave immediate feedback on their performance in OSPE. 81% strongly agreed OSPE was well structured, relevant and uniform. 72% students strongly believe OSPE covers appropriate knowledge area and consistent with learning objectives of the syllabus.

Most of the students i.e., 74% disagree with the statement that OSPE was more stressful compared to TPE. Overall 91% students strongly felt that OSPE should be included as a method of assessment in pathology practical examination.

All the faculty members unanimously expressed their opinions

- OSPE was difficult to arrange, and it is more time taking.
- Faculty versus student's ratio was high for evaluation
- Finally, all members of faculty opined that OSPE should be included as a method of assessment.

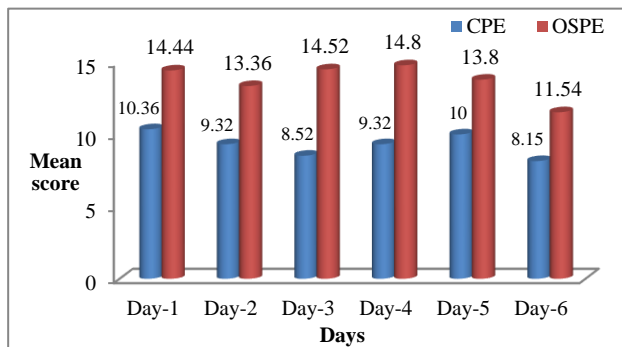


Figure 1: Bar chart depicting mean scores of TPE and OSPE on all 6 days.

DISCUSSION

OSPE was conducted for 2nd year MBBS students and was evaluated with the help of their feedback questionnaire and comparison of performance of the students in the two assessment methods. Feedback forms are most important and useful basis for modifying and improving medical education. This type of evaluations is to assess the areas of strength and or lacunae of teaching methodologies to rectify the difficulties and revise the curriculum suitably.^{4,5}

In our study, majority of the students were sensitized about the nature of OSPE and displayed well in advance about this novel method. Student perceptions with regard to improvement in their practical was positive as majority of the students perceived OSPE to be good or satisfactory. Previous studies also revealed similar findings as in this study.^{6,7}

Around 72 % students opined that OSPE is an excellent tool and it covers appropriate knowledge area consistent with learning objectives of the syllabus. This was in tandem with a study by Chandelkar et al, it was found that all the students accepted OSPE helped them improve their practical skills.⁸

Examination is well known source of stress and anxiety and OSPE in particular was considered with quite minimum stress levels in our study. These findings were

similar to a study by Wadde et al, probably this could be possibly due to least or indirect interaction with the examiners as well as students undergoing limited number of stations.⁹ Low levels of stress can make student more alert and motivated.

In our study, most of students 85% were not satisfied with the time allotted for OSPE. A similar opinion was noted in a study by Chandelkar et al.⁸

81% of students felt OSPE was well structured, relevant and uniformity in evaluation are the documented advantages of this method compared to TPE.⁸

The correlation between performance scores of OSPE and TPE were ($r=0.48$) statistically significant ($P < 0.01$). This was in accordance to a study by Rajan et al, where significant ($P < 0.05$) improvement was observed in the performance scores obtained in OSPE as compared to TPE (Table 1).¹⁰ This study confirmed the feasibility and student acceptability of OSPE in evaluating the pathology skills in the undergraduate medical education.

CONCLUSION

Present study proves that several benefits of OSPE as assessment methods of other TPE. Most of students also shown their interest as a method of assessment in practical examinations. In comparison to TPE, OSPE shows better performance of students, less stress full and covers most of important areas consistent with learning objectives of the syllabus. Thus, it can be concluded that use of OSPE was more transparent, fair and objective and it should be included as a method of assessment in undergraduate practical examination.

ACKNOWLEDGEMENTS

Authors would like to thank Professor and HOD Department of Pathology for extending his support throughout this study, and thanks to all the IInd MBBS students, faculty members of pathology for their support, participation and giving their valuable feedback.

Funding: No funding sources

Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee

REFERENCES

1. Harden RM, Stevenson M, Downie WW, Wilson GM. Assessment of clinical competence using objective structured examination. Br Med J. 1975;1:447-51.
2. Ananthakrishnan N. Objective structured clinical/practical examination (OSCE/OSPE). J postgrad Med. 1993;39:82-4
3. Harden RM, Gleeson FA. ASME Medical Education Booklet No. 8. Vol. 64. Dundee: ASME;

1979. Assessment of clinical competencies using an objective structured clinical examination (OSCE) pp. 1979;8(6):123-5.
4. Verhoeven BH, Hamers JG, Scherpbier AJ, Hoogenboom RJ, Van der Vleuten CP. The effect on reliability of adding a separate written assessment component to an objective structured clinical examination. *Med Educ.* 2000;34:525-9.
 5. Rafique S, Rafique H. Students feedback on teaching and assessment at Nishtar Medical College, Multan. *J Pak Med Assoc.* 2013;63:1205-9.
 6. Deshpande RP, Motghare VM, PAdwal SL, Bjamare CG, Rathod SS, Pore RR. A review of objective structured practical examination (OSPE) in Pharmacology at a rural medical college. *Int J Basic Clin Pharmacol.* 2013;2:629-33.
 7. Manjula A, Shashikala P, Nagaraj P. students perception on objective structured practical examination in pathology. *J Med Educ Res.* 2013;1:12-4.
 8. Chandelkar UK, Rataboli PV, Samuel LJ, Kamat AS, Bandodkar LV. Objective structured practical examination: our experience in Pharmacology at Goa Medical College, Bambolim Goa, India. *Int J Sci Rep.* 2015;1:113-7.
 9. Wadde SK, Deshpande RH, Madole MB, Pathan FJ. Assessment of III MBBS students using OSPE/OSCE in community medicine: Teachers and students perceptions. *Sch J App Med Sci S.* 2013;1:348-53.
 10. Rajan R, Jain A, Rashmi Bhujade R. OSPE in anatomy: New dimension in assessment. *Int J Anat Res.* 2016;4:1789-94.

Cite this article as: Rao RD, Babu PU, Chakravarthy KCV, Ramya N. Objective structured practical examination (OSPE) as a tool in formative assessment of II MBBS students, in pathology. *Int J Res Med Sci* 2018;6:221-4.