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OSPE in Anatomy, Physiology and Biochemistry Practical Examinations: Perception of MBBS students

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Abstract

Background: The objective structured practical examination (OSPE) is a well accepted tool in practical examinations for both Pre- and Para-clinical subjects. OSPE has been implemented as a part and parcel in practical examinations in most of the advanced countries as it is an effective method to assess the clinical skills of the students.

Objective: The present study was aimed to assess the student's perception about OSPE implementation in practical examination of Anatomy, Physiology and Biochemistry.

Materials and Methods: The present study was conducted in 100 male (n=40) and female (n=60) first year medical students. OSPE of Anatomy, Physiology and Biochemistry were prepared in consultation with experts and conducted practical exams using them. A standard questionnaire was used to obtain students perceptions on OSPE.

Results: Majority of the students favored implementation of OSPE in the context of scoring and improving thinking and eliminating bias. However, student's favorable and unfavorable response on stress levels was almost same.

Conclusion: Based on student's feedback, we recommend multi center studies in this area to recommend implementation of OSPE in the curriculum for the benefit of students.

Keywords: Anatomy, Biochemistry, Physiology, OSPE, Students perception.

Introduction

Examination should be effective to assess knowledge comprehension, skills, motivation and feedback.[1] However, the traditional method of conducting practical examination, which includes table viva does not fulfill the actual assessment. Table viva may be subjective and chances of bias may be present. As the conventional method tests only few learning outcomes, it is essential to implement new methods, to make the examinations more effective. Structuring of questions and assessment through insisting on objectivity has been reported as an effective method for conducting practical examination.[2] Anatomy is one the most important basic subject in Modern medicine. Assessment of Anatomy is complex as it has many sub divisions like gross anatomy, general anatomy, histology, embryology etc. The objective structured practical examination (OSPE) is a well accepted tool in practical examinations for both Pre- and Para-clinical subjects. OSPE has been implemented as a part and parcel in practical examinations in most of the advanced countries as it is an effective method to assess the clinical skills of the students.[3] The major advantage of OSPE is that, it helps the students to improve their integrating skills, so that they can become an efficient clinician. In India very few Universities have adopted OSPE Pattern in pre clinical subjects.[13] The present study was aimed to assess the student's perception about OSPE implementation in practical examination of Anatomy, Physiology and Biochemistry.

Materials and Methods

Participants: The present study was conducted in 100 male (n=40) and female (n=60) first year medical students at GEMS Hospital. The study was approved by Institutional Human Ethical committee and we have obtained voluntary, written informed consent from all participants.

Methods: Since OSPE was introducing for the first time, an orientation program was conducted about OSPE. All allotted topics of OSPE were taught to students earlier in their practical classes. OSPE examinations were announced to the students 15 days in advance. Methodology was adopted from the literature standardized earlier.[2] A total of 10 OSPE were arranged in Anatomy, Physiology and Biochemistry separately. During OSPE, the students were instructed to rotate around 10 different OSPE stations. Each OSPE was designed with the help of experts in concerned subject so that students can complete one OSPE within 5 minutes, without any difficulty. Examiners observed each candidate without direct questioning. In Anatomy, OSPE stations were related to histology[2] and in Biochemistry, OSPE are related to the Clinical Biochemistry.[10] In Physiology, OSPE stations were related to hematology and clinical examinations.[1] After

completion of examinations the students perception was recorded and assessed by standard questionnaire.[2]

Statistical analysis: Data was presented as frequency percentage.

Results

Results were presented in Table 1, 2, 3. Majority of the students favored implementation of OSPE in the context of scoring and improving thinking and eliminating bias. However, regarding student's favorable and unfavorable response on stress levels was almost same.

Table 1: Perception of students on Anatomy OSPE

S. No	Objectives	Yes (%)	No (%)
1	The Questions asked were relevant	90	10
2	Sufficient time was given to students	75	25
3	OSPE is fair compared with old method	70	30
4	OSPE is easier to pass	75	25
5	OSPE should be followed as method of assessment in anatomy	82	18
6	Effects of OSPE: Helps to improve	70	30
7	Provides chance to score better	60	40
8	Less stressful	45	55
9	Makes student think in more than one way	78	22
10	Eliminates bias	52	48

Data was expressed as frequency percentage

Table 2: Perception of students on Physiology OSPE

S. No	Objectives	Yes (%)	No (%)
1	The Questions asked were relevant	83	17
2	Sufficient time was given to students	80	20
3	OSPE is fair compared with old method	66	34
4	OSPE is easier to pass	72	28
5	OSPE should be followed as method of assessment in Physiology	82	18
6	Effects of OSPE: Helps to improve	68	32
7	Provides chance to score better	50	50
8	Less stressful	40	60
9	Makes student think in more than one way	61	39
10	Eliminates bias	90	10

Data was expressed as frequency percentage

Table 3: Perception of students on Biochemistry OSPE

S. No	Objectives	Yes (%)	No (%)
1	The Questions asked were relevant	77	23
2	Sufficient time was given to students	90	10
3	OSPE is fair compared with old method	68	32
4	OSPE is easier to pass	80	20
5	OSPE should be followed as method of assessment in Biochemistry	78	22
6	Effects of OSPE: Helps to improve	68	32
7	Provides chance to score better	60	40
8	Less stressful	40	60
9	Makes student think in more than one way	70	30
10	Eliminates bias	90	10

Data was expressed as frequency percentage

Discussion

Examinations should be effective enough to drive the learning process of students. Earlier studies reported and recommended OSPE implementation in medical streams.[6,7] Rahman *et al*. and Menezes *et al*. also reported that OSPE is a better tool over the traditional method for assessing the practical skills of MBBS students in physiology and forensic medicine, respectively.[8,9] Sjiwani Jaswal et al., reported that OSPE is useful tool for Biochemistry also.[10] Other studies reported that OSPE helps to assess the performance grades of students.[11,14-21] OSPE also helps to assess competency of the students.[12] The present study will further support the findings of earlier studies as we have observed favorable responses from the students regarding OSPE. We have observed positive approach of the students as all of them voluntarily participated in the study. It also increased the interaction between teachers and students. However, students still found it stressful as the conventional exam. This response may also be due to first time exposure to OSPE examination.

Limitations

We have not used a stress questionnaire or marker. Gender comparison was not assessed in the current study.

Conclusion

Our study provides further evidence for OSPE as an effective tool to assess students in all three Basic Medical sciences. Based on student's feedback, we recommend multi center studies in this area to recommend implementation of OSPE in the curriculum for the benefit of students.

Conflicts of interest: Nil

Source of support: Nil

References

1. Abraham RR, Raghavendra R, Surekha K, Asha K. A trial of the objective structured practical examination in physiology at Melaka Manipal Medical College, India. Adv Physiol Educ. 2009;33:21–23.
2. Gowri, Janaki V. Study on Objective Structured Practical Examination OSPE in Histo anatomy for I MBBS and Comparison with Traditional Method. Indian Journal of Applied Research. 2016;6(2):136-139.
3. Abraham RR, Upadhya S, Torke S, Ramnarayan K. Student perspectives of assessment by TEMM model in physiology. Adv Physiol Educ. 2005;29:94–97.
4. Sandeep V Pakhale, Amrut A Mahajan, Anita S Fating, Shubhangi B Ghule, Bharat S Borole. Study of Student's Perception Regarding Increasing Objectivity during Practical Examination in Anatomy. International Journal of Health Sciences & Research. 2012;2(4):48-53.
5. Harden RM, Stevenson M, Downie WW, Wilson GM. Assessment of clinical competence using objective structured examination. Br Med J 1975;1:447-51.
6. Sloan DA, Donnelly MB, Schwartz RW, Strodel WE. The objective structured clinical examination. The new gold standard for evaluating postgraduate clinical performance. Ann Surg 1995;222:735-42.
7. Feroze M, Jacob AJ. OSPE in pathology. Indian J Pathol Microbiol 2002;45:53-7.
8. Rahman N, Ferdousi S, Hoq N, Amin R, Kabir J. Evaluation of objective structured practical examination and Traditional Practical Examination. Mymensingh Med J 2007;16:7-11.
9. Menezes RG, Nayak VC, Binu VS, Kanchan T, Rao PP, Baral P, *et al.* Objective structured practical examination (OSPE) in Forensic medicine: Students′ point of view. J Forensic Leg Med 2011;18:347-9.
10. Shivani Jaswal, Jugesh Chattwal, Jasbinder Kaur, Seema Gupta, Tejinder Singh. Assessment for learning with Objectively Structured Practical Examination in Biochemistry. Int J App Basic Med Res. 2015;5(suppl S1):71-5.
11. Sandila MP, Ahad A, Khani ZK. An objective structured practical examination to test students in experimental physiology. J Pak Med Assoc 2001;51:207-10.
12. Schoeman S, Chandratilake M. 2012a. The anatomy competence score—A new marker for anatomical ability. Anat Sci Educ 5:33–40.
13. Nayar U, Malik SL and Bijalani RL. Objective structured practical examination: A new concept in assessment of laboratory exercise in preclinical sciences. Medical Education. 1986;20:204-209.
14. Hart IR, Honden RM, Walton HJ. Newer developments in assessing clinical competence International conference proceedings Ottawa: Congress centre, 1985.
15. Menezes RG, Nayak VC, Binu VS, Tanuj Kanchan, Rao PP, Baral P, Lobo SW. Objectively structured practical examination (OSPE) in Forensic Medicine: Students point of view. J Forensic Leg Med. 2011; Nov;18(8):347-9.
16. Reznick, R. Does it matter where you go to medical school? Med Educ.1999;33:557-58.
17. Tekian. A. Have newly graduated physician mastered essential clinical skills? Med Educ. 2002;36:406-407.
18. Ruth N. Communicating student evaluation of teaching results: rating interpretation guides (RIG's). Assessment & Evaluation in Higher Education. 2000;25:121-34
19. Smee. Skill based assessment. British Medical Journal. 2003;326(7391):703-06.
20. Oberle B and Muma R. The OSCE compared to the PACKRAT as a predictor of performance on the PANCE. Proc 4th Annual GRASP symposium, Wichita State University, 2008.
21. Harden R and Gleeson F. Assessment of clinical competence using an objective structured clinical examination. Medical Education. 1979;13:41-54.