

# Perceptions of Undergraduate Medical Students regarding Objective Structured Practical Examination and Objective Structured Clinical Examination as an Assessment Method

Abdus Salam Khan\*, ArslanJavaeed\*\*, Rubab Ayesha Rasheed\*\*\*, Sanniya Khan Ghauri\* and Khawaja Junaid Mustafa\*

\*Department of Emergency Medicine Shifa International Hospital, Islamabad, \*\* Department of Pathology, Poonch Medical College, Rawalakot, Azad Kashmir, \*\*\*Poonch Medical College, Rawalakot, Azad Kashmir

## Abstract

**Introduction:** At present student's assessment in MBBS course is mainly based on Traditional Practical Examination. The studies have shown that it can have certain disadvantages which can be overcome by adopting Objective Structured Practical Examination and Objective Structured Clinical Examination.

**Objective:** To evaluate the perception of MBBS students towards Objective Structured Practical Examination and Objective Structured Clinical Examination as an assessment method.

**Methods:** A cross-sectional study was conducted amongst MBBS students from all academic years of Poonch Medical College, Rawalakot, Azad Kashmir, Pakistan from June to August 2018. A self-administered questionnaire containing 13 items was used for the data collection.

**Results:** 267 students from all academic years participated in this survey. Majority of the students believed that OSPE/OSCE can remove inter-examiner variations. Maximum students agreeing with the statement that "OSPE is better than conventional examination", were from the third year (63.93%) followed by 4<sup>th</sup> year (60.0%). Highest number of students who agreed that "OSPE/OSCE should replace viva-voce", was from 4<sup>th</sup> year. Overall, 73.12% MBBS students, inclusive of all academic years, agreed that the OSPE should be preferred method of assessment in every subject.

**Conclusion:** The present study has shown good acceptability of Objective Structured Practical Examination and Objective Structured Clinical Examination by the students with majority of them considering it better than conventional method.

**Key Words:** Students, Examinations, Medical Education, Objective Structured Practical

## Introduction

Evaluations are an inseparable part of medical education. In Pakistan, the professional degree awarded to a graduate level allopathic doctor is M.B.B.S. (Bachelor of Medicine, Bachelor of Surgery). The curriculum of MBBS spans over about 5 years. The periodic examinations are essential tools used during this curriculum, to ensure the competency of the students. The evaluation of the students includes theory and practical examinations. The aim of theory examination is to evaluate the theoretical knowledge of the student, while aim of the practical examination is to assess the ability of a student to practically apply the knowledge in real life scenario.

### AUTHOR'S CORRESPONDENCE:

**Dr. Sanniya Khan Ghauri**

Registrar, Department of Emergency Medicine  
Shifa International Hospital, Islamabad.  
sanniyaghauri89@gmail.com

Currently prevalent assessment method of Traditional Practical Examination (TPE) has certain drawbacks like subjectivity on the part of examiners and dissatisfaction amongst students.<sup>1,2</sup> Alternative assessment method known as Objective Structured Clinical Evaluation (OSCE) was introduced in 1979.<sup>3</sup> This approach was later on modified to include assessment of practical knowledge and skills and renamed as Objective Structured Practical Evaluation (OSPE).<sup>4</sup> Since then, a number of studies have shown that OSPE/OSCE can be a better tool for evaluation as it can overcome the limitations presented by TPE. It is based on assessing "knows" and "knows how" parts of the knowledge, which forms the base of 'Miller's Pyramid of Competence'. It introduces objectivity and allows student to demonstrate applied knowledge and skills.<sup>5-7</sup>

Even in the era of the rapid advancements, the evaluation technique of OSPE/OSCE is considered one of the best. It consists of a series of stations with

details describing a scenario or a procedure and students are asked to respond to that question by application of the theoretical knowledge and experience gained during clinical postings. The students are provided adequate time to respond. They are observed doing a procedure or demonstrating a skill during this period. This technique has been time tested and it has shown high reliability and validity.<sup>8</sup> It is important that an evaluation technique should be acceptable and suitable to both the teachers and students. Previous studies conducted in other parts of the world, have shown that teachers and students have found OSPE/OSCE more beneficial and appropriate compared to other TPE.<sup>9,10</sup> At many instances, the students have found OSPE as having wider coverage of the subject compared to TPE.<sup>11</sup> Considering the advantages offered by OSPE/OSCE, it is a need of the hour to replace conventional method of evaluation with OSPE/OSCE. Very few studies have been conducted in the past to know the perception of the students towards OSPE/OSCE in Pakistan. Therefore, the authors are inspired to fill the existing vacuum by conducting the study.

### **Objective**

To evaluate the perception of MBBS students towards Objective Structured Practical Examination (OSPE) and Objective Structured Clinical Examination (OSCE) as an assessment method.

### **Material and Methods**

Current study was conducted amongst MBBS students of Poonch Medical College, Rawalakot, Pakistan from June to August 2018. A total number of 500 questionnaires were distributed in the college out of which 267 students completed the questionnaire (Response rate: 53.4%). Out of 267 students, 43 students were from 1<sup>st</sup> year, 41 students from 2<sup>nd</sup> year, 61 students from 3<sup>rd</sup> year, 55 students from 4<sup>th</sup> year and 67 students were from final year MBBS. These students had experienced OSPE/OSCE during previous examination. A self-administered questionnaire, containing 13 items was used for the data collection. The questions were designed to assess the perception of students towards OSPE/OSCE, in comparison to TPE. The study was conducted following ethical approval from Ethical Review Board of Poonch Medical College. An informed consent was ensured from each participant before data collection. The questionnaire was validated by two epidemiologists.

The data was entered and analyzed in Statistical Package for Social Science (SPSS), version 23 (IBM,

Armonk, NY, USA) and the results were expressed in proportions and percentages.

### **Results**

As the survey was conducted amongst all academic years so the results are presented in table 1.

As depicted in table 1, the overall perception of students about OSPE/OSCE was positive. Majority of them believed that adequate time is being provided in OSPE/OSCE (53.93% agreed). Almost 43% students agreed that OSPE/OSCE is better than viva-voce. More than 50% students agreed that OSPE covered wide range knowledge than the conventional practical examination. Clear majority of the students felt that OSPE/OSCE removes the variability between examiners to a large extent (61.04% agreed). About 40% students believed that OSPE/OSCE should replace viva. Majority (46.81%) of the students were neutral with statement that OSPE/OSCE may influence methods of teaching. Overall most (55.43%) students agreed on preferring OSPE/OSCE as a method of assessment in every subject. A brief description of year-wise results is reported below.

In 1<sup>st</sup> year, almost half of the students (51.16%) felt that the OSPE is organized and coordinated at the sites of examinations. The majority of the students (60.46% neutral) could not provide negative or positive response and chose to be on the neutral side about the clarity and adequacy of the instructions provided during the examinations. Similar finding was also found about the adequacy of the time for completion of the examination and majority students remained neutral (44.18%). Most of the students (about 53.48%) agreed or strongly agreed that OSPE is better than the conventional practical examination. About 42% students agreed that OSPE is better than viva-voce in evaluating the knowledge. However, majority of the students (58.14%) were neutral on whether OSPE is fair enough for evaluating knowledge and skills. Almost 62.79% of the students agreed with the statement that "OSPE covers wide range of knowledge than the conventional practical examination." Greater proportion (69.76%) of the study population agreed that OSPE can remove the variability between examiners. About 63% students could not agree or disagree with the statement that OSPE can influence the methods of teaching. A positive perception about the OSPE was observed amongst the majority of the study participants (with 76.73% students agreeing and strongly agreeing).

**Table 1: Perceptions of undergraduate medical students regarding Objective Structured Practical Examination (OSPE) and Objective Structured Clinical Examination (OSCE) (N=267)**

No.	Item	Responses									
		Strongly Agree		Agree		Neutral		Disagree		Strongly Disagree	
		N	%	N	%	N	%	N	%	N	%
1	OSPE/OSCE is well designed and well managed	18	6.74	105	39.32	94	35.20	39	14.60	11	4.11
2	Directions to each station are well-defined and satisfactory	26	9.73	92	34.45	79	29.58	59	22.09	11	4.11
3	Allotted time to OSPE/OSCE is suitable	37	13.85	106	39.70	73	27.34	43	16.10	8	2.99
4	OSPE/OSCE is better than usual practical examination	28	10.48	144	53.93	59	22.09	30	11.23	6	2.24
5	OSPE/OSCE is superior than viva-voce	38	14.23	116	43.44	82	30.71	22	8.23	9	3.37
6	OSPE/OSCE is fair in testing both knowledge and skills	23	8.61	105	39.32	86	32.21	45	16.85	8	2.99
7	OSPE covered a wide range knowledge than the traditional practical examination	17	6.36	138	51.68	75	28.08	33	12.35	4	1.49
8	OSPE/OSCE removes the variability between examiners to a great extent	40	14.98	163	61.04	47	17.60	15	5.61	2	0.74
9	OSPE/OSCE should replace viva	55	20.59	107	40.07	48	17.97	44	16.47	13	4.8
10	In OSPE/OSCE, physical and emotional stress were less than the traditional practical examination	32	11.98	76	28.46	97	36.32	59	22.09	3	1.12
11	OSPE/OSCE becomes exhausting and lengthy if number of stations are increased	25	9.36	80	29.96	92	34.45	66	24.71	5	1.87
12	OSPE/OSCE may influence methods of teaching	14	5.24	51	19.10	125	46.81	71	26.59	6	2.24
13	OSPE/OSCE should be preferred method of assessment in every subject	53	19.85	148	55.43	52	19.47	13	4.86	1	0.37

Similar to the findings amongst 1<sup>st</sup> year students, majority (62.41%) of 2<sup>nd</sup> year students also agreed that OSPE is well organized and coordinated. About 54% students believed that the instructions to each station are clear and adequate. Almost half of the 2<sup>nd</sup> year students believed that the time given to the students for OSPE is adequate enough. Very few students either disagreed or strongly disagreed (4.87% each) that OSPE is better than viva-voce. Compared to 1<sup>st</sup> year students, 2<sup>nd</sup> year students were more positive on the belief that OSPE covers wide range knowledge than the conventional practical examination and about 59% agreed with that. Only 2 (4.87%) of the all 2<sup>nd</sup> year students disagreed and none of them strongly disagreed with the statement "OSPE removes the variability between examiners to a large extent." Just like 1<sup>st</sup> year students, most (63.41%) of the 2<sup>nd</sup> year students were also neutral on the statement that "OSPE may influence methods of teaching." Majority of the students (70.72%) believed that OSPE should be preferred method of assessment in every subject. Such

positive majority could not be found in 1<sup>st</sup> year MBBS students.

Almost 50% of the 3<sup>rd</sup> year students gave neutral response to the statement that OSPE is well organized and coordinated. Half of the students from this group agreed that the time for OSPE is adequate. Majority (63.93%) of the student felt that OSPE is better than conventional practical examination. In comparison to junior students, 3<sup>rd</sup> year students were neutral on the statement that OSPE is better than viva-voce. Almost 51% students agreed or strongly agreed that OSPE covers wide range knowledge than the conventional practical examination. Almost half of the students agreed that OSPE should replace viva-voce. About 75% students (agreed and strongly agreed) believe that OSPE should be preferred method of assessment in every subject. Again, in this year also, majority of the students (60.65%) agreed that OSPE should be preferred method of assessment in every subject.

A different set of perceptions were observed amongst the 4<sup>th</sup> year MBBS students. Most (40%) students were neutral on the statement that OSPE is well organized and coordinated. A great majority (60%) of the students felt that OSPE is better than conventional practical examination. Similarly, high majority (70.90%) of the students agreed with that the OSPE is better than viva-voce. Almost half of the students agreed with the statement that "OSPE covers wide range of knowledge than the conventional practical examination." 69% of the students agreed that OSPE removes the variability between examiners to a large extent.

Majority (47.76%) of the final year students did not believe that instructions to each station are clear and adequate and they disagreed with the statement. Most students (46.26% agreed) find that the time provided for OSCE is adequate. Great majority of the students (59.70% agreed) have the perception that OSCE is better than conventional practical examination. Similar perception was observed amongst junior level students also. About 43% of the students agreed with the statement "OSCE covers wide range knowledge than the conventional practical examination." Clear majority of the study participants (62.68%) believed that OSCE removes the variability between examiners to a large extent. The students who believed that OSCE should replace viva-voce constituted the majority (50.74%) of the group. Their preference for OSCE was once again revealed in disagreement of the majority (38.80%) with the statement "OSCE is exhausting and lengthy if number of stations is increased." Most participants (73.12%) of this group perceive that OSCE should be preferred method of assessment in every subject. A majority (38.80%) of students felt that in OSCE, the degree of physical and emotional stress was less than the traditional practical examination.

## Discussion

As shown in the previous studies, current study also revealed a positive perception about OSPE/OSCE.<sup>12-14</sup> In a similar study conducted at Karnataka, India, medical students felt that OSPE is better than conventional practical examination.<sup>9</sup> This finding is confirmed by the current study. Another study conducted at Andhra Pradesh, India by Faisal Ghani Siddiqui showed that the time provided for the OSPE is adequate and it is better than viva-voce.<sup>15</sup> Similar findings were also obtained by Omer AbdelgadirElfaki and Suliman Al-Humayed.<sup>16</sup> The

same results can also be observed in the present research study. This further confirms that OSPE has better acceptance amongst students than conventional method of assessment. Adequacy of the time provided in OSPE would also mean that students can be less stressful and focus on the skills they are supposed to demonstrate. However, a study done by Mamatha et al. contradicts this statement by showing that 68% students under study found it stressful to demonstrate a skill under observation.<sup>17</sup> It is to be noted that the referred study was conducted only amongst first year MBBS students who had less knowledge and experience of clinical skills.

In the current study the students find that OSPE/OSCE covers wider aspect of the subject and assesses all relevant aspects of the subject. A study done by Faldessai et al. also showed similar finding with 76% students agreeing with that the OSPE covers appropriate knowledge area consistent with learning objectives of the syllabus.<sup>18</sup> This finding has also been confirmed in another study conducted at UAE by Goud et al.<sup>19</sup> The same study also found that OSPE can remove examiners' bias. Faldessai et al. also found the same perception amongst the students.<sup>18</sup> Present study also found that students perceive that OSPE can eliminate the subjective bias in the evaluation process.

## Conclusion

Current study disclosed that students perceive OSPE/OSCE as a better alternative of TPE. The students perceived that OSPE/OSCE has wider coverage in term of knowledge assessment. They believed that this technique can replace viva-voce and also removes subjective examiners' bias. They also found OSPE/OSCE less stressful than TPE

## References

1. Wani P. Traditional clinical examination vs objective structured practical examination in human physiology: Examiners bias. *International Journal of Medical Science and Public Health*. 2015;4(5):607.
2. Wadde SK, Deshpande RH, Pathan MB. Assessment of III MBBS Students using OSPE/OSCE in Community Medicine: Teachers' and students' Perceptions. *Scholar Journal of Applied Medical Sciences*. 2013;1(4):348-53.
3. Newble D, Baxter A, Elmslie R. A comparison of multiple-choice tests and free-response tests in examinations of clinical competence. *Medical Education*. 1979;13(4):263-268.

4. Harden R. Revisiting 'Assessment of clinical competence using an objective structured clinical examination (OSCE)'. Medical Education. 2016;50(4):376-379.
5. Islam MM, Rahman MA. A Review on Objective Structured Practical Examination (OSPE). Dinajpur Medical College Journal. 2017 Jan; 10(1): p. 159-161.
6. Relwani N, Wadke R, Anjenaya S, Sawardekar P. Effectiveness of objective structured practical examination as a formative assessment tool as compared to traditional method for M. B. B. S students. International Journal of Community Medicine and Public Health. 2016;:3526-3532.
7. Iram S, Marya A, Ayaz KM. A study on objective structured practical examination ( OSPE ) as a tool for assessment of medical students. Indian Journal of Basic and Applied Medical Research. 2016 Mar; 5(2): p. 784-790.
8. Petko P, Knuth-Herzig K, Hoefer S, Stehle S, Scherer S, Steffen B et al. The reliability and predictive validity of a sixth-semester OSPE in conservative dentistry regarding performance on the state examination. GMS Journal for Medical Education. 2017 Feb; 34(1): p. 1-16.
9. Manjula A, Shashikala P, Nagaraj P. Student's Perception on Objective Structured Practical Examination in Pathology. Journal of Medical Education & Research. 2013; 1(1): p. 12-14.
10. Mate VH, Sahasrabudhe RA, Pandit VA, Beri SG. OSPE as the Tool to Assess Application of Pharmacology Knowledge of II MBBS Students: Teachers' Perceptions. International Journal of Health Sciences and Research. 2016 Jun; 6(6): p. 117-122.
11. Haque M, Ibtisam RS, Mustafa T, Qayyum S, Tahir QUA, Melsing SB and Rafique F Oral Examinations: What Medical Students and Examiners think! Comparison of Opinions on Oral Examination Int.j.pathol 2016; 14(2) 66-73
12. Reznick R. Does it matter where you go to medical school?. Medical Education. 1999;33(8):557-558.
13. Tekian A. Have newly graduated physicians mastered essential clinical skills?. Medical Education. 2002;36(5):406-407.
14. Neumann R. Communicating Student Evaluation of Teaching Results: Rating Interpretation Guides (RIGs). Assessment & Evaluation in Higher Education. 2000;25(2):121-134.
15. Siddiqui FG. Final Year MBBS Students' Perception for Observed Structured Clinical Examination. Journal of the College of Physicians and Surgeons Pakistan. 2013 Sep; 23(1): p. 20-24.
16. Omer AE, Suliman AH. Medical Students' Perception of OSCE at the Department of Internal Medicine, College of Medicine, King Khalid University, Abha, KSA. Journal of the College of Physicians and Surgeons Pakistan. 2016 Nov; 26(2): p. 158-159.
17. S.D. Mamatha Rajlaxmi R, Ramya CM. First Year MBBS Student's Perception of Objective Structured Clinical Examination and Objective Structured Practical Examination. Indian Journal of Pharmacology. 2017 Aug; 61(4): p. 440-444.
18. Faldessai N, Dhanwadkar A, Mohanty S. Objective-Structured Practical Examination: A Tool to Gauge Perception and Performance of Students in Biochemistry. Asian Journal of Multidisciplinary Studies. 2014 Aug; 2(8): p. 32-38.
19. Gaud Begum S, Zaki B, Haridas S. Perceptions and Performance of undergraduate medical students in Objective Structured Practical Examinations (OSPE) in Biochemistry at RAK Medical & Health Science University (RAKMHSU), UAE. Journal of University College of Medical Sciences. 2014; 2(4): p. 54-61

HISTORY	
Date Received:	10-10-2018
Date Sent for Reviewer:	15-11-2018
Date Received Reviewers' Comments:	19-11-2018
Date Received Revised Manuscript:	18-11-2018
Date Accepted:	19-12-2018

CONTRIBUTION OF AUTHORS	
Author	CONTRIBUTION
Abdus Salam Khan	A,B,C
ArslaanJavaeed	B,C
Rubab Ayesha Rasheed	B,C
Sanniya Khan Ghauri	B,C
Khawaja Junaid Mustafa	C

#### **KEY FOR CONTRIBUTION OF AUTHORS:**

A. Conception/Study Designing/Planning

B. Experimentation/Study Conduction

- C. Analysis/Interpretation/Discussion
- D. Manuscript Writing
- E. Critical Review
- F. Facilitated for Reagents/Material/Analysis

G.