



ORIGINAL ARTICLE

Objectively Structured Practical Examination (OSPE) in traditional examination system versus integrated modular system: Perception of teaching faculty at a Public Sector Medical College of Punjab.

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ABSTRACT... Objective: To access the perception of teaching faculty regarding traditional OSPE and integrated modular OSPE. **Study Design:** Cross-sectional study. **Setting:** Sahiwal Medical College, Sahiwal. **Period:** February 2024 to March 2024. **Methods:** To collect data on the perceptions of the teaching faculty (n=30) (who were performing duty as examiners in first year professional examination), towards the newly introduced mode of assessment; integrated modular OSPE (which consists of OSPE, OSVE, PERLs and OSCE stations). Convenient sampling technique was used and a validated questionnaire was distributed as Google form on Whatsapp. Data was analyzed through SPSS version 20. **Results:** According to the teaching faculty, out of which 11(36.7%) were males and 19(63.3%) were females, integrated modular OSPE is relatively lengthy and stressful for the students 25(83.3%), while traditional OSPE is comparatively more transparent, fair, objective 17(56.7%) and in line with the curriculum 19(63.3%). Furthermore, traditional OSPE is comparatively easier to pass 23(76.7%), easier to conduct 21(70%) and also easier for the students 24(80%). According to teaching faculty, traditional OSPE has low probability of bias comparatively 20(66.6%). **Conclusion:** As per the perception of the selected teaching faculty, traditional OSPE is comparatively a better mode of assessment.

Key words: Perception, Traditional OSPE, Integrated Modular OSPE, Feedback.

INTRODUCTION

Assessment drives learning. Undergraduate medical institutions conduct periodic examinations to evaluate students' knowledge and skills. Medical educators have always been concerned about the quality of student evaluation, and various evaluation methods have been introduced to improve the reliability and objectivity of medical education.¹ Objective Structured Practical Examination (OSPE) and Objective Structured Clinical Examination (OSCE) are practical/clinical examination techniques that have been used in practice in Pakistan and its neighboring countries for many years. Various assessment methods that have been used for medical students in Pakistan for many years include written exams, viva voce exams, OSPE (Objective Structured Practical Examination), and OSCE (Objective

Structured Clinical Examination). Additionally, a study was carried out in India to determine which viva pattern would be most appropriate. The findings indicated that the intra-group percentage coefficient of variance values gradually increased in the following order: unstructured practical viva assessment (UPA %age, 18.25) < structured written theory examination (STE%age, 47.26) < structured theory viva voce (SVV %age, 63.91). As a result, unstructured practical viva evaluation UPA%age is less discriminating than structured theory viva voce (SVV%age).² For the formative assessment of undergraduate medical students, the Objective Structured Viva Examination (OSVE) is a more effective instrument than the traditional oral viva examination (TVE). Currently, the Objectively Structured Viva Exam (OSVE) can be utilized in addition to the Traditional Viva

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Exam (TVE) to improve results. This can be done by combining the two techniques.³ Researchers found that students' mean scores on the OSVE were higher than their TVE scores. TVE had mean scores of 21.4 ± 4.5 out of 30 while OSVE had mean scores of 24.7 ± 5.8 out of 30.³ Similar findings were found in a study on viva patterns, which indicated that 83% of students found SVVE (structured viva voce examination) to be generally acceptable and that nearly 66% of them liked it in comparison to TVVE (traditional viva voce examination).⁴ Other evaluation methods mainly include OSPE (Objective Structured Live Examination) and OSCE (Objective Structured Practical Examination). OSPE is a practical examination system that is not only objective but also reliable and valid.⁵ Although OSPE assesses students' knowledge, OSCE primarily assesses students' clinical skills.

In a 2020 study in India, a specific group of students was assessed using both traditional practical exams and OSPE. The results showed that there was a significant difference in OSPE scores compared to the regular/traditional practical exam. Therefore, this information indicates that the OSPE format was better accepted by students and also led to improved average grades.⁶ OSPE/OSCE provides an opportunity to assess the clinical/practical application of knowledge. Structuring questions and emphasizing objectivity are the main goals of OSPE/OSCE⁷, and furthermore, the OSPE/OSCE system is the best tool for assessing basic science skills.⁸ In a study conducted in 2015 to evaluate the newly introduced OSCE/OSPE at that time, it was established that it has numerous discrete advantages. As it stands, it would be realistic to expect it to be incorporated into university assessment schedules and students' daily evaluations to improve clinical competency.⁹ In contrast, another study found that 44% of faculty did not agree with the replacement of the Practical Table with OSPE/OSPE and the implementation of OSPE/OSCE in the comprehensive assessment, but more than 60% of faculty agreed, OSPE/OSPE is mentally and physically exhausting and requires faculty and time to create and administer the exam.¹⁰ However, various studies have shown

that OSPE is a better assessment method. According to the results of a study conducted in India in 2016, the average score obtained by students in OSPE ($73.0 \pm 9.8\%$) is higher than the average score in classical/traditional practical exam ($70.7 \pm 9.6\%$). It was shown that the results were statistically significant and there was no inter-examiner variation observed in OSPE.¹¹

Apart from previous assessment modes including traditional objectively structured practical examination, traditional viva examination, objectively structured practical exam and objectively structured viva exam, a new methodology was introduced this year (2024) by the University of Health Sciences (UHS) in Punjab, Pakistan, namely integrated OSPE as a mode of assessment for the undergraduate 1st year MBBS students who were taught by modular system. Regarding the pattern of integrated OSPE that was followed this year is concerned, in it there were all observed stations (in which students had to perform and their performance was being evaluated by the teachers). In the professional examination of first year there were separate integrated OSPE exam for each of the three modules/blocks. The integrated OSPE examination setting was such that there were total 12 stations in each OSPE examination, out of which 8 stations were observed OSPE (objectively structured practical examination) stations, 2 stations were observed OSVE (Objectively structured viva exam) stations, one station of OSCE (Objectively structured clinical exam) and PERLS (Professionalism, ethics, research & leadership skills). In our study, we collected data on teachers' perceptions. Perception based evaluation makes it possible to evaluate the strengths and weaknesses of the teaching method, eliminate difficulties and modify the program accordingly.¹²

METHODS

After having ethical approval from institutional ethical review board (75/IRB/SLMC/SWL) (1-2-24), a comparative cross-sectional study was conducted from 1st February, 2024 to 10th March, 2024 at Sahiwal Medical College, Sahiwal (which is a public sector medical college of Punjab,

Pakistan). Convenient sampling technique was used (sample size=29). We collected data from the teaching faculty (n=30), only those teachers were included in this study who were performing duty as examiner in the 2024 OSPE examination center at our institute. Since all the stations in the integrated OSPE were observed so we included only those teachers who were acting as examiners in the OSPE at our respective public sector medical college and asked them for their perception regarding the traditional OSPE versus integrated modular OSPE. A validated questionnaire¹³ was provided to them via Google form. Data was collected and entered into excel. Data was analyzed via SPSS version 24. The sample size¹⁴ was calculated as follows;

$$\text{Sample size } n = \left[\frac{DEFF * Np(1-p)}{(d^2/Z^2(1-\alpha/2)^2(N-1) + p*(1-p))} \right]$$

SAMPLE SIZE IS 28 ON 80% CI

RESULTS

Total 30 study participants from the teaching faculty were included in this study, out of them 11(36.7%) were males and 19(63.3%) were females.

	f	%age	Valid Percent	Cumulative Percent
Anatomy	9	30.0	30.0	30.0
Biochemistry	6	20.0	20.0	50.0
Medical Education	5	16.7	16.7	66.7
Physiology	10	33.3	33.3	100.0
Total	30	100	100	

Table-I. Shows participants' division on the basis of the departments they belonged to.

	Traditional OSPE	Integrated Modular OSPE
Which one is lengthy and stressful for students?	5(16.6%)	25(83.3%)
The questions asked in the stations were more appropriate and in line with the curriculum in?	19(63.3%)	11(36.7%)
Which one is more transparent, fair and objective as compared to traditional practical examination?	17(56.7%)	13(43.3%)
Comparatively which one is easier to pass?	23(76.7%)	7(23.3%)
Which one is comparatively more useful and relevant to develop the psycho-motor skills of students?	19(63.3%)	11(36.7%)
Which of the following mode of assessment reduces the chance of bias by examiners?	20(66.6%)	10(33.3%)
Which one is comparatively more efficient mode of assessment?	16(53.3%)	14(46.7%)
Which mode of assessment is easier to conduct?	21(70%)	9(30%)
According to you, which one is easier for the students?	24(80%)	6(20%)

Table-II. Perception of teaching faculty regarding Traditional OSPE versus integrated modular OSPE

		More Efficient Mode of Assessment		Total	P-Value*
		Traditional OSPE	Integrated Modular OSPE		
Department	Anatomy	2 (22.2%)	7 (77.8%)	9	0.006
	Biochemistry	4 (66.7%)	2 (33.3%)	6	
	Medical Education	1 (20%)	4 (80%)	5	
	Physiology	9 (90%)	1 (10%)	10	
Total		16 (53.3%)	14 (46.7%)	30	

Table-III Comparison of the answers regarding which is the more efficient mode of assessment. p value* is calculated by Fisher's Exact test. A significant correlation (p value=0.006) was found between perception of the research participants and the departments they belonged to.

DISCUSSION

The criterion for a good examination depends on a lot of factors (including objectivity, reliability, practicability and validity) which are always taken under consideration by the DME (Department of Medical Education). This year, as the students were exposed to the integrated modular OSPE (which consists of OSPE, OSVE, PERLs and OSCE stations) for the very first time, the data was collected from the teaching faculty to assess some significant parameters of integrated modular OSPE in contrast to traditional OSPE. In 2015 a study was conducted in India to assess students' perception regarding OSPE in their study most of the participants (82.4%) agreed that OSPE is a better method of examination than the conventional/traditional practical examination. The majority of the participants (77.0%) said that the OSPE covered wide range of knowledge than the conventional practical examination.¹

Total 30 individuals participated in the study, we included those teachers who were conducting OSPE this year as examiner. According to teaching faculty, 25 (83.3%) responded that integrated modular OSPE is comparatively lengthy and stressful for the students while 5(16.7%) considered traditional OSPE as lengthy.

The questions asked in the stations were more appropriate and in line with the curriculum in traditional OSPE according to the majority 19(63.3%) of the respondents while 11(36.7%) were of the view that integrated modular OSPE is more in line with the curriculum. In a study conducted in 2016, results showed that (17.7%) respondents felt that TVE (Traditional Viva Exam) covered the course better, while the remaining 6 (9.7%) were uncertain about it.⁶ Also a recent study concluded that structured viva exam SVE (structured viva exam) may be considered as a better tool of assessment as it decreases bias, reduces inter-examiner variation and encourage students to prepare well for viva.¹⁵ Similarly, in a study conducted in 2014, results showed that, majority of students (91.6%) felt that structured viva is fairer than conventional viva. Only 61.6% students felt that structured viva is easier to score than conventional viva.¹⁶

The majority 17 (56.7%) of the teachers had the view that traditional OSPE is comparatively more transparent, fair and objective as compared to traditional practical examination. On the other hand, 13(43.3%) responded that integrated modular OSPE is comparatively more fair and transparent. In a study done in 2016, it was observed that Forty-six (74.2%) of the students felt that OSVE is less time consuming as compared to the TVE. 45 (72.6%) of the students were of the opinion that OSVE had a wider coverage of the content.³

Comparatively traditional OSPE is easier to pass according to the majority 23 (76.6%) of the responses. Only 7 (23.3%) examiners considered integrated modular OSPE as comparatively easier to pass. Traditional OSPE as per majority 19 (63.3%) of the respondents, is comparatively more useful and relevant to develop the psychomotor skills of the students while a small number 11 (36.7%) examiners/teachers/respondents considered integrated modular OSPE as more useful for developing psycho-motor skills of the students.

The chance of biased marking by the examiner is comparatively less in traditional OSPE as per majority of responses 20 (66.6%) while only 10 (33.3%) were of the opinion that the chance of bias is less in integrated OSPE. In a study conducted in 2016 in India, the results showed that above 90% of students felt that OSPE was more practically oriented examination with less chances of bias.³ OSPE eliminates examiner bias.⁵

According to majority 16 (53.3%) of our teaching faculty, overall traditional OSPE is comparatively more efficient mode assessment. While 14 (46.7%) teachers considered OSVE as more efficient mode of assessment. In a study conducted in 2017 in Pakistan, student perception was assessed and it was almost all the students agreed that Integrated Performance Assessment was better than traditional OSPE.¹⁷ but in comparison of responses by individual departments, a significant correlation was found (p -value=0.006) on applying Fisher's Exact test. Anatomy department 7(77.8%) and Medical

education department 4(80%) were more in favor of integrated OSPE while teachers of Biochemistry department 4(66.7%) and Physiology department 9(90%) were preferring traditional OSPE.

Traditional OSPE mode of assessment is to be more easy to conduct by majority 21(70%) of the teachers. 9 (30%) teachers were of the opinion that integrated modular OSPE is easier to conduct in comparison to OSPE.

Majority 24 (80%) of the teachers responded that traditional OSPE is easier for the students.

Our study was more in favor of traditional OSPE exam while in contrast in a study conducted in 2017 it was concluded that the students perceived IPA (Integrated Performance Assessment) as a better tool of assessing application of basic science concepts and its clinical relevance in integrated curriculum format.¹⁷

CONCLUSION

On the basis of findings of our study, Traditional Objectively structured practical examination (OSPE) is considered to be a better tool of assessment than Integrated modular OSPE as per perception of the selected teaching faculty.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

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


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AUTHORSHIP AND CONTRIBUTION DECLARATION

No.	Author(s) Full Name	Contribution to the paper	Author(s) Signature
1	Menahal	Conception and design of work, results compiling and data analysis.	Menahal
2	M. Junaid Iqbal	Conception and design of work, supervision and revising it critically for important intellectual content.	
3	M. Wasim Zafar	Data collection and analysis.	
4	Wajeeha Batool	Final approval of the version to be published.	
5	Abdul Ghaffar	Analysis and interpretation, help in write up of the article.	
6	Rameen Zahid	Data analysis and write-up of the article.	