

Research Article

The influence of objectively structured practical examination (OSPE) on scoring pattern

R. S. Trivedi^{1*}, J. S. Diwan², C. J. Shah², R. D. Jani³ and A. K. Anand³

¹Department of Physiology, P. D. U. Government Medical College, Rajkot, India

²Government Medical College, Bhavnaga, India

³M. P. Shah Government Medical College, Jamnagar, India

***Correspondence Info:**

Dr. R. S. Trivedi

Associate Professor

Department of Physiology,

P. D. U. Government Medical College, Rajkot, India

E-mail: drstrivedi@yahoo.com

Abstract

Background: The present study was carried out to evaluate the influence of objectively structured practical examination on scoring pattern.

Material and methods: Study was carried out among M.B.B.S students of M. P. Shah Govt Medical College, Jamnagar. Total 682 students were taken. Out of which 338 students appeared in practical examination before introduction of OSPE and 344 students appeared in practical examination as OSPE pattern and a comparative study was done.

Result: Our result revealed that OSPE not only increased the number of passing students but it has also increased the number of students securing good marks.

Conclusion: The element of subjectivity that existed in pre - OSPE disappeared in post -OSPE. This method has also an added advantage of conducting the examination in shorter period. Thus, OSPE can be used as routine practical examination in basic medical science in place of conventional practical examination.

Keywords: Objectively Structured Practical Examination (OSPE), Scoring Pattern

1. Introduction

Evaluation is an important step in the assessment of acquisition of new skills and knowledge of the learners. Performance linked evaluation and assessment provides essential inputs for the development of meaningful strategy.

The vital role of assessment in learning process has been stressed by various workers¹⁻⁶. Newble and Jagger⁶ designed a process for the assessment that was subsequently changed by Hall- turner⁷. Hall- turner⁷ developed a strategy of Objectively Structured Clinical Examination (OSCE). It was found out to be quite innovative and easy to be administered. Subsequently, modification in OSCE has been adapted and applied in other branches and in different forms.

Objectively Structured Practical Examination (OSPE) is gaining wide acceptance as the routine practical examination in basic medical sciences and it may assume a form of interrogation by senior teachers.

2. Materials and Methods

The study was carried out among M. B. B. S. at Department of Physiology at M. P. Shah Govt. Medical College, Jamnagar, Gujarat and designed to evaluate the influence of OSPE in scoring pattern. Total 682 students were taken. Out of which 338 students appeared in practical examination before introduction of OSPE and 344 students appeared in practical examination as OSPE pattern. Retrospective analysis of the marks obtained by the students who appeared at the practical examination was done prior to introduction of OSPE.

The questions routinely asked at the practical examination in pre- OSPE were covering instrumentations, calculations, graphs and photographs related with various systems. The examiner assessed the students regarding their knowledge, comprehension, application and skills.

Thereafter, OSPE pattern was introduced in practical examination in which the instruments, calculations, graphs and photographs were put up at various stations as per the standard methods that were communicated at National Teachers Course at Chandigarh. The method was used universally with appropriately placed blank stations. The students were exposed to each item at a station for a period of two minutes.

In pre - OSPE examination, examiner used to interrogate and assess the students used to last around 150 minutes for 25 students of each batch. After the introduction of OSPE, the time taken by 25 students to appear at OSPE was reduced to 37 minutes in which the students appeared at 10 feature/item stations where they were exposed to the same set of questions of pre- OSPE days.

The assessment of OSPE was carried out by single teacher so as to avoid inter - observer variations.

2.1 Statistical analysis

The marks obtained by the students at pre- OSPE and post - OSPE were compared. The appropriate statistical method chi- square method was employed. The students were categorized as admitted on open merit seats and admitted against reserve category seats. The students were also compared on the basis of gender as the boys and girls. The probability value $p < 0.05$ considered as statistically significant and probability value $p > 0.05$ considered as statistically non significant.

3. Results

The scoring pattern of 338 students who faced the interrogative examination in pre- OSPE has shown that:

- The number of students securing more than 60% marks was only 64 and the percentage of girls was higher as compared to boys (Table 1).
- The ratio was not observable when the students admitted on open category seats were considered (Table 2).
- The percentage of reserved category students failing the examination was higher (Table 3).
- The high proportions of reserved category students were not able to secure more than 60% marks when the comparison was made between the candidates of open and reserved category (Table 3).

Table 1: Change in scoring pattern of total students

Students	Total				Boys				Girls			
	Pre-OSPE		Post-OSPE		Pre-OSPE		Post-OSPE		Pre-OSPE		Post-OSPE	
Total	338	%	344	%	246	%	254	%	92	%	90	%
Passed	165	48.81	205	59.59	119	48.37	152	59.84	46	50.00	53	58.88
p -value	< 0.05				< 0.05				< 0.05			
Less than 60%	101	61.21	95	46.34	76	63.86	74	46.88	25	54.34	21	39.62
p -value	< 0.05				< 0.05				< 0.05			
More than 60%	64	38.79	110	43.00	43	36.14	78	51.32	21	45.66	32	60.38
p -value	< 0.05				< 0.05				< 0.05			

The post – OSPE results are indicating that:

- The total number of students passing the examination has increased significantly ($p < 0.05$) as compared to pre- OSPE (Table 1).
- The total number of students securing more than 60% marks has increased significantly ($p < 0.05$) as compared to pre- OSPE (Table 1).
- The total number of open category students securing more than 60% marks in both boys and girls categories has increased significantly ($p < 0.05$) as compared to pre- OSPE (Table 2).
- The students securing more than 60% marks have not increased significantly ($p > 0.05$) as compared to pre- OSPE in reserved category students (Table 3).

Table 2: Change in scoring pattern of open merit students

Students	Total				Boys				Girls			
	Pre-OSPE		Post-OSPE		Pre-OSPE		Post-OSPE		Pre-OSPE		Post-OSPE	
Total	218	%	231	%	155	%	167	%	63	%	64	%
Passed	137	62.84	159	68.83	95	61.29	113	67.66	42	66.66	46	71.87
p -value	> 0.05				> 0.05				> 0.05			
Less than 60%	81	59.12	63	39.62	56	58.94	48	42.97	25	59.52	15	32.60
p -value	< 0.05				< 0.05				< 0.05			
More than 60%	56	40.88	96	60.38	39	41.06	65	57.53	17	40.48	37	67.40
p -value	< 0.05				< 0.05				< 0.05			

Table 3: Change in scoring pattern of reserved category students

Students	Total				Boys				Girls			
	Pre-OSPE		Post-OSPE		Pre-OSPE		Post-OSPE		Pre-OSPE		Post-OSPE	
Total	120	%	113	%	91	%	87	%	29	%	26	%
Passed	28	23.33	46	40.70	24	26.37	39	44.82	4	13.79	7	26.92
p -value	< 0.05				< 0.05				< 0.05			
Less than 60%	20	71.42	32	69.56	20	83.33	26	66.66	0	0	6	85.71
p -value	> 0.05				< 0.05				< 0.05			
More than 60%	8	28.58	14	30.44	4	16.17	13	33.34	4	100	1	14.29
p -value	> 0.05				> 0.05				> 0.05			

4. Discussion

The need for a method of objectively evaluating medical students in the teaching is well established. The examination system usually tests the memorizing capacity of the students. Now, the pattern of examination changes globally. Today, the teachers are more open, humble and promote self - evaluation methods so that the students are lifelong learners.

The ability of the students to understand, comprehend and apply the knowledge gained is usually expressed in the form of skills, exhibited at the time of practical examination. During the “interrogative examination” when the students were becoming apprehensive, the examiner used to give appropriate feedbacks which many a times can be subjectively variable.

Since OSPE has been introduced as a part of practical examination, the scoring pattern of the students has improved as evident from our results. OSPE also provides a different teaching - learning method which is different from routine teaching method and hence may fall into a category of innovative teaching methods.

5. Conclusion

It can be concluded from our results obtained that the technique of OSPE is one of the possible designs where students get a chance to score better. The method of assessment gives accurate overall scores that reflect the assessment of the knowledge of the students, their understanding and application of it.

Since students may not face the examiner, the “interrogative segments” and the subjective variation disappears which is beneficial for the students. Further in depth studies with more sample size may provide a concrete point for continuing OSPE.

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