

Objective Structured Practical Examination for Gram stain - An effective tool in formative assessment

V.L. Jayasimha¹, Satish S.Patil,² K.G. Raghukumar³, C.S. Vinodkumar⁴, K.G. Basavarajappa⁵

¹Professor, ^{2,3,4}Associate Professor, ⁵Professor and Head

Department of Microbiology, SSIMS&RC, Davangere. Karnataka

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Abstract

Introduction : Objective structured practical examination (OSPE) has proved to be a good alternative to overcome pitfalls of traditional method of assessment. OSPE is not usually used in medical colleges because of constraints of resources. Hence both teachers and students are not much aware of the OSPE model. Hence we conducted this study to create awareness on OSPE method and analyze students' opinion regarding the method.

Methodology : Forty students from 2nd MBBS were included in the study. The skill being assessed was performance of Gram stain. Four stations were formed of which two were procedure stations and others response stations. Students were evaluated using OSPE model. Student opinion about the new method was collected through a questionnaire and analyzed.

Results : Forty students faced OSPE model of Gram stain and were assessed as per the checklist agreed by the teachers. The student opinions were collected and analyzed and are presented in the table 1.

Ninety seven percent students felt that OSPE is fair method of assessment and more relevant compared to traditional method. 63% students felt that it is easier to pass if evaluated by OSPE method. 70% students felt that OSPE covered wider range of knowledge. 45% students expressed that they experienced shortage of time.

Conclusion : Opinions on OSPE concluded that it is a fair, better, relevant method and has several advantages; though it is difficult to conduct OSPE, efforts should be made to include it in internal assessments so that both teacher and students get accustomed to new method.

Introduction :

Traditional methods of assessment of practical skills of students are riddled with many problems. There is a lot of scope for bias during evaluation and many subjective factors which will lead to incorrect assessment of skills. Objective structured practical examination (OSPE) has proved to be a good alternative to overcome such deficiencies of traditional method.¹ However, it requires a holistic preparation for conducting OSPE model evaluation. Hence OSPE is not usually used in many medical colleges because of constraints with respect to staff and resources. Hence both teachers and students are not much aware of the OSPE model, mode of conducting, scoring and assessment.

Methodology :

The study was conducted in Department of Microbiology, SSIMS&RC, Davangere. Forty students from 2nd MBBS were included in the study. The skill being assessed was performance of Gram stain. Gram

stain was selected as the exercise because it is quick, simple and forms the basis of microscopic diagnosis in majority of infectious diseases.

The objectives of the study were

- To know whether OSPE method of evaluation can substitute conventional method of evaluation for Gram stain?
- Evaluation of student feedback for OSPE model of Gram stain
- Whether students were stress free during the exams?

Four stations were formed of which two were procedure stations and remaining response stations. Scores for various steps in experiment were decided and checklist for scoring prepared. Questionnaire for the experiment and answers standardized were prepared and students were briefed (exposed) to OSPE model in previous practical classes. Students were evaluated using OSPE model. Student opinion about the new method was collected through a questionnaire and analyzed.

Correspondence :

Dr. V.L. Jayasimha

Professor, Department of Microbiology
SSIMS&RC, Davangere

E-mail: jayasimha.vl@gmail.com Mob. : 9448839277

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Results : 40 students faced OSPE model of Gram stain and were assessed as per the standardized checklist. The student opinions were collected and analyzed and are presented in the table¹.

Discussion : Evaluation is a process which systematically and objectively determines the relevance, effectiveness, and impact of activities in light of their objectives. Thus, evaluation should include cognitive, psychomotor and affective domains¹. In conventional methods of evaluation, there are many shortcomings. Apart from performance of student, various other factors like experiment factors, instrument condition and examiner factors also play a significant role in scoring. Besides, individual skills are not evaluated and only final result is taken into consideration in awarding the marks leading to incomplete and unjust evaluation. Most students are assessed only for cognitive domain, and not for psychomotor and affective domains.^{1,2} In order to overcome these disadvantages of conventional method of evaluation, new models have been proposed attempting to remove these biases. The most promising method among them is the objective structured practical examination (OSPE) described in 1975 by Harden and his group. In OSPE, several stations are created and at each station, the student performs the skill.¹ In MBBS 2nd phase microbiology exams students face many exercises (at least five) which are difficult to assess using OSPE model because of the above said constraints. Among them, Gram stain being quick and simple, can be conducted using OSPE and can be conducted by OSPE. We, in our study, tried to evaluate feedback patterns

submitted by the students when we conducted internal practical examination as formative assessment for 2nd MBBS undergraduate students using Gram stain experiment.

In our study, students felt that OSPE method is a fair method of assessment compared to traditional method (97%). Similar findings were reported by different authors."^(3,4) Students also felt that OSPE covered all the aspects of gram stain (70%). However, teachers differed on this opinion and felt that OSPE did not have option to ask more questions and tested very basic knowledge. Sixty two percent students felt that OSPE is easier to pass than traditional exam. Few other studies also demonstrated that there was a significant improvement of scores compared to traditional method.^{2,5} Eighty seven percent students felt that OSPE is less stressful compared to traditional method. Several other studies report similar observation.^{3,4,5,6} Students also felt that OSPE was more relevant and useful than traditional examination. Limitations of our study were that we had a small sample size and only one skill was assessed. Hence we intend to continue the study with more number of students and include other microbiological skills.

Conclusion :

Opinions on OSPE concluded that it is a fair, better, relevant method and has several advantages; Though it is difficult to conduct OSPE, efforts should be made to include it in internal assessments so that both teacher and students get accustomed to new method and get benefitted.

Table 1. Students' perceptions about OSPE model evaluation for Gram stain

Sl No	Question	Percentage of students Agreeing	Percentage of students Disagreeing	Percentage of students Neither agree nor disagreeing
1	Time provided in each station was adequate	55	45	0
2	OSPE is fair method compared to traditional examination	97	3	0
3	OSPE covered wider range of knowledge than traditional examination	70	15	15
4	OSPE is easier to pass than traditional examination	62.5	25	12.5
5	OSPE is more stressful compared to traditional method	5	87.5	7.5
6	OSPE is more relevant than traditional method of assessment	97	3	0

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