ActaBiomedicaScientia
e - ISSN - 2348 - 2168
Print ISSN - 2348 - 215X
www.mcmed.us/journal/abs
Research Article

EVALUATION OF OBJECTIVE STRUCTURED CLINICAL EXAMINATION (OSCE) VERSUS CONVENTIONAL METHODS IN POSTGRADUATE ANAESTHESIOLOGY TRAINING: A COMPARATIVE STUDY

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ABSTRACT

OSCE is now being used as part of education in medicine. Its use in evaluation of postgraduate anaesthesiology programs is confined. The study sought to see how effective OSCEs are and to compare their usefulness with that of traditional testing, as ways to assess anaesthesiology learners. Cross-sectional analysis of a group of anaesthesiology postgraduate trainees was performed to judge the effectiveness of OSCE in comparison to standard formative assessments. Thirty-five students took part in the test by sitting the traditional paper-based exam on the first day, the viva voce on the second day and the OSCE on the final day. Participants filled out a questionnaire at the end of all the assessments, seeking to assess their understanding of the OSCE. After collecting data, analysts looked at it to see what students thought about OSCEs. According to the study, overall, the OSCE is seen in a positive light. The students graded the OSCE as arranged publicly (9 students, 25.7%), impartial (13 students, 37.1%) and ranked fairly (19 students, 54.2%) and they approved of the system they used to grade (9 students, 25.7%) The OSCE was seen by students as less likely to cause stress than different types of assessments. More than half (31 out of 36) of the students said they found the OSCE simpler to do well in and likewise, 29 (82.5%) said they felt less emotional stress during the OSCE. Based on our findings, the OSCE performs better as an assessment method than the usual tests used in anaesthesiology postgraduate evaluation.

Keywords:-Objective Structured Clinical Examination (OSCE), Anaesthesiology Education, Formative Assessment, Postgraduate Training, Student Perception.

Access this article online		
Home page **www.mcmed.us/journal/abs**		**Quick Response code**
Received:**25.05.2017**	**Revised**:12.06.2017	**Accepted**:15.06.2017

INTRODUCTION

According to Bloom, there are main domains in learning that address knowledge, physical action and attitude respectively.[1] Educational objectives, methods of teaching and ways to evaluate are the three important elements that connect in the educational process.[2] Evaluation plays an important role among these issues. Each learning subject should have assessment tools that show students' progress correctly and objectively. Since education is constantly changing, the ways we assess and evaluate students should adjust as well.[3] Assessment is important for evaluating medical education at institutions where there are medical programs. With regular evaluations, we can see if the goals and outcomes set by

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the educational programme has been completed.[4] The changing nature of medical education means it is proper to use Objective Structured Clinical Examination and Objective Structured Practical Examination (OSCE/OSPE) to assist in postgraduate teaching and assessment of skills in anaesthesia. The focus of this research was to examine and contrast traditional testing with OSCE/OSPE. A further goal was to review students' opinions about OSCE/OSPE as practical methods for both education and assessment.

METHODS

The Ethics and Research Committee of the institution approved the survey. The questionnaire was examined thoroughly by the Department of Medical Education and every participant, upon signing, gave informed consent. Participants in the study were from the postgraduate Anaesthesiology department and took part during the first, second and third years of their training at a tertiary care hospital linked with a medical college. Seven students were in every batch.Cognitive knowledge was tested with a written exam, affective understanding was checked by a viva voce interview and psychomotor skills were evaluated through OSCE/OSPE. With no experience using OSCE/OSPE, giving the same syllabus was important to make certain students were taught the same way. As soon as the semester syllabus was completed, an OSCE notification was sent out 15 days before the actual OSCE took place. Assessments are offered every semester in the academic system. The methods of assessment mostly include written theory exams and viva voce. All faculty took part in a basic medical education workshop organized by the Department of Medical Education before using the evaluation tool. Each question station received a set of structured questions, will likely answers and an appropriate checklist. Students were introduced to the OSCE style ahead of time, since they hadn't had previous experience with it. During two straight semesters, assessments were completed for 35 students. Because the assessment might cause fatigue, it was done over three days. Students on the first day answered two long essay questions, three short notes and five brief questions on the written exam. Viva voce on the same subjects was held after a break on the second day. On the last day, students underwent assessment at 14 different stations and six procedural tables. Once candidates completed each mission, they proceeded to the following. Every station was planned out so each person could finish in about five minutes. Every five stations, teachers gathered the question papers from the previous rounds at a break station. There was a rest station that was included with the workstations so there would never be more than one candidate in the system at a time. The researchers measured the reliability of the questions with Cronbach's alpha. After finishing the examination, every participant needed to complete a questionnaire in one go, under supervision. There were five main sections on the questionnaire. With the approval of the Department of Medical Education and the Institutional Ethics Committee, items and responses for the survey were pre-selected by consensus among all departments. The purpose of the questionnaire was to measure the opinions about ridgidity, stress, fairness and biases associated with the two exam formats. The purpose of the first section was to find out what students think about the OSCE/OSPE. The second part of the survey looked at how pleased the students were with the way the exam was arranged. The third and fourth sections addressed the ways in which OSCE/OSPE compare to older assessment techniques. Any candidate hoping to pass this level had to earn at least 50% in all three tests. Student scores were grouped as Grade I for those over 60%, Grade II for between 40% and 60% and Grade III for those below 40%. No question was included more than once in any of the assessments. The data was examined using Microsoft Excel 2007 and SPSS version 19 (IBM SPSS Statistics Base). Results were described using both frequencies and percentages. The results were given as mean ± standard deviation. Between-group comparisons were tested using one-way ANOVA, with subsequent post hoc assessments. Having a p-value below 0.05 was considered significant for the purposes of this study.

RESULTS

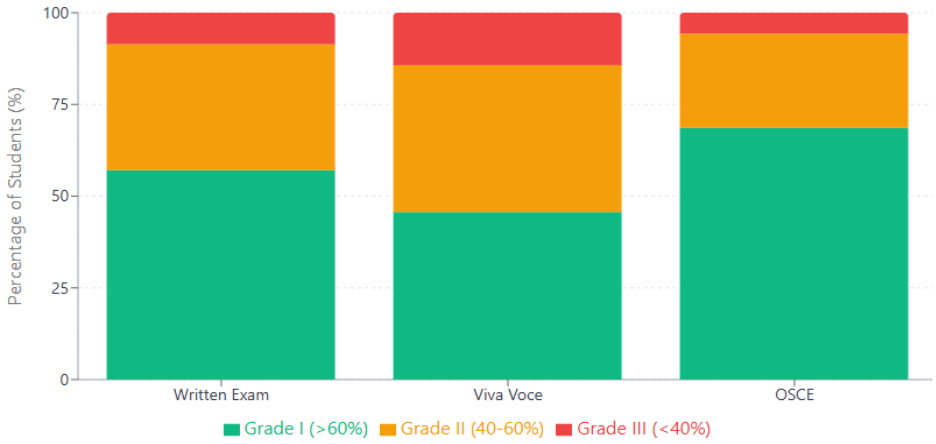
Thirty-five anaesthesiology postgraduate students participated in the study and completed all three assessment methods: traditional written examination, viva voce, and OSCE. The reliability of the OSCE stations was confirmed with a Cronbach's alpha coefficient of 0.82, indicating good internal consistency. Students' scores were categorized into three grades: Grade I (>60%), Grade II (40–60%), and Grade III (<40%). The mean scores for the written exam, viva voce, and OSCE were 62.3 ± 8.1, 58.7 ± 7.5, and 67.9 ± 6.3 respectively. Statistical analysis using one-way ANOVA showed a significant difference in scores between the three methods ($p = 0.004$), with post hoc analysis indicating significantly higher scores in OSCE compared to viva voce ($p = 0.003$). Regarding student perception, 54.2% rated the OSCE as fair, 37.1% considered it unbiased, and 25.7% acknowledged the standardized scoring system. The majority (88.5%) found the OSCE less stressful than traditional methods, with 82.5% reporting lower emotional stress during OSCE. Furthermore, 88.5% agreed that OSCE was easier to pass than conventional assessments. Participants also expressed that more time was needed at OSCE stations to complete tasks comfortably. Despite initial intimidation, students appreciated the uniformity and objectivity offered by

OSCE, leading to improved performance and reduced anxiety.

Table 1: Summary of Student Performance and Perceptions

Parameter	Written Exam	Viva Voce	OSCE
Mean Score (± SD)	62.3 ± 8.1	58.7 ± 7.5	67.9 ± 6.3
Grade I (>60%)	20 (57.1%)	16 (45.7%)	24 (68.6%)
Grade II (40–60%)	12 (34.3%)	14 (40.0%)	9 (25.7%)
Grade III (<40%)	3 (8.6%)	5 (14.3%)	2 (5.7%)
Perceived Fairness (%)	Not applicable	Not applicable	54.2%
Perceived Unbiased (%)	Not applicable	Not applicable	37.1%
Standardized Scoring Approval (%)	Not applicable	Not applicable	25.7%
Less Stressful (%)	Not applicable	Not applicable	88.5%
Easier to Pass (%)	Not applicable	Not applicable	88.5%
Need for More Time at Stations (%)	Not applicable	Not applicable	60.0%

Figure 1: Student Grade Distribution by Assessment Type.



DISCUSSION

Evaluating how students perform in clinical work needs to be done routinely in medical education, with special focus on anaesthesiology, since this area requires assessment across all three important domains. Therefore, educators are expected to organize tasks that give the most reliable assessment of students' clinical knowledge and performance.[5] Training and evaluation using simulation methods support teaching and testing in different areas of anaesthesia postgraduate education. The initial development of the OSCE happened in Dundee during the mid-1970s and practical examinations within OSCE (OSPE) were introduced in 1975, then fully explained and described in 1979 by Harden and co-workers. [5, 6] Right now, OSCE/OSPE are either part of summative or formative exams at some universities and usually add up to only a small amount of the final grade. It is clear from the research that most papers have centered on undergraduate medical students. This study may be the first to study how OSCEs are applied to anaesthesia training programs. People trust and use OSCE thanks to how objective and reliable it is. The format lets teachers receive useful feedback on students, measure their own teaching, compare methods and motivate their learners.[7] In Anaesthesiology, having great practical skills is necessary. How students learn often depends on the types of assessments used. Because of this, the data generated by assessment instruments needs to be accurate, valid and reliable to support what is expected in education. [5, 8] There is increasing proof that simulation-based training and testing in anaesthesiology is progressing well and demonstrating differences in competence. It is important that assessments exhibit good professionalism, a strong knowledge of anesthesia, expert technical abilities, abilities to interact and communicate and system-based practice. People often notice that students who are great at theory may not do so well in exams that require real-world skills or answering questions from chairpersons. [10, 11] Students have often criticized using viva voce to assess practical knowledge because different questions are asked and the scores can be erratic. [12] OSCE was developed so that every student would face the same conditions,

questions, time and marks. Its objective scoring system and use of competence standards and checklists mean that each examiner gives the same results.Evenso, these checklists might lack some depth or require too much effort which can be prevented with proper design of the questionnaires. Students are worried that some biases could impact their grades, but those in this study say that OSCE/OSPE do a good job of reducing such biases. Covering many subjects holds students' attention. [12, 14] The participants in this study said they wanted more time at their workstations. Many earlier studies have stressed that the OSPE should test how well skills are carried out, not simply how many are done in a set period. [8, 10, 11, 14] Still, several students stated they considered the OSPE reliable and appreciated how uniform it was. Because OSCE were considered less stressful than typical exams, this improved how some students did. Other similar studies found that students generally believe multiple-choice formats allow them to better remember basic information.[12] OSCE is adaptable to what is needed locally, different department requirements and available resources. Still, observer fatigue can be a problem, as examiners have to repeatedly use detailed checklists to watch many students perform.[6] Other problems are when patients do not cooperate, when each student needs to be carefully watched by the examiner and when a lot of time is needed for OSCE preparation. Its small sample size means we can only explore some challenges and hindrances experienced when implementing OSCEs. Other research should be conducted to see if OSCE/OSPE can be effectively used in postgraduate training. Not having any feedback from examiners meant that we didn't get useful information on how realistic this assessment format was. In short, the study confirms well-prepared OSCE/OSPE can help determine clinical competence in anaesthesiology during postgraduate medical education. Yet, before we can say OSCEs are the right choice for both forms of assessment, additional studies are required.

CONCLUSION

OSCE may serve as a markedly superior assessment method compared to traditional approaches, particularly regarding its objectivity, consistency, and the wide range of clinical scenarios it can evaluate. Additional research is necessary before endorsing OSCE as a standard formative assessment tool in postgraduate anaesthesia education.

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Cite this article:
Dr. Radhika H, Venkata Radhakrishna Varadapureddi, Jothieswari D, Radhika C. (2017). Evaluation Of Objective Structured Clinical Examination (Osce) Versus Conventional Methods in Postgraduate Anaesthesiology Training: A Comparative Study. *ActaBiomedica Scientia*, 4(3), 276-280.