

REVIEW ARTICLE

OBJECTIVE STRUCTURED CLINICAL EXAMINATION (OSCE) - A BETTER DIMENSION TO MEASURE CLINICAL COMPETENCIES

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ABSTRACT

The teaching and learning of medical students has always been a demanding perspective. The best teachers at times may strive in conveying medical knowledge and assessing yield of the effort. The traditional written and practical instruments of assessment have many limitations in their practicality and fair judgment. Since its introduction in the 70s, objective structured clinical examination (OSCE) has gained worldwide recognition and appreciation as a fair and standardized format to assess the clinical competencies of medical students and residents. It is an approach in which all the three aspects of clinical competence namely knowledge, skills, and attitude are evaluated in a comprehensive, consistent, and structured manner with close attention to the objectivity of the procedure. OSCE demands excellent communication, time management, and organizational skills. Not only the examiners but also the examinees have widely appreciated OSCE. Therefore, it should be recommended as a standard procedure for a student's evaluation. The aim of this paper was to review and recommend OSCE as a learning tool.

Keywords: Clinical competence, Measurement, Psychometrics.

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INTRODUCTION

Judgement of clinical aptitude is a vital component of medical education and its appraisal methods persistently bother all stake holders in medical education. Appropriate judgment methods improve students' performance whereas flawed methods can lead to incorrect decisions that adversely influence the performance of students¹. Many methods are currently in practice to check clinical competencies of students e.g. written examinations, viva voce, visual evaluation of examination skills, online evaluation, simulated tests, records of daily performance, and objective structured clinical examination (OSCE)^{2,3}. The conventional methods of clinical and practical examinations have many limitations. These methods concentrate on the final conclusion or overall performance of the examinees instead of

reflecting upon the competencies required. In the conventional methods of clinical examination, marking system is also not structured and same candidate gets different marks when examined for the same competency by different examiners⁴⁻⁶. These deficiencies of examinations have been recognized long ago and researchers are continuously focusing on devising a convincing method to gauge student's actual performance³.

As a potential solution, OSCE has secured growing importance and assessment analysts are now labelling it as one of the most rational, effective, and dependable method to assess clinical performances^{1,5,7-9}. It is also the most desirable test to evaluate not only the medical knowledge and professionalism but also other core proficiencies like practice-based learning and communication skills, which all are related to the patient care⁴⁻⁶. The salient characteristic of this assessment tool is that it can be used to assess "knows, knows how, shows how" and to some extent "does how" that are of utmost bearing for

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giving an understanding of actual clinical competency in the Miller's pyramid¹⁰.

How is OSCE Done?

The model of OSCE's is based on a loop of assessment stations, where examiners assess a series of clinical skills on an objectively designed marking sheet using previously determined criteria¹¹. Such stations may comprise of numerous ways of assessment, including multiple choice questions, identification of specific signs of a condition, elucidation of laboratory data, clinical proficiencies, and counselling stations^{12,13}. Most OSCEs use "standardized patients" for assessment of history taking, physical examination, and counselling sessions^{13,14}. The stages involved in devising an OSCE exam involve choosing an OSCE team, selection and description of the skill's that would be assessed at the assessment stations, marking schemes, enrolment and coaching of the standardized patients, and making arrangement for logistics of the whole exam activity.

Psychometric Properties of OSCE

Validity

The term validity, refers to the level to which a measure can actually measure what it is intended to. There are two aspects of validity that the OSCEs are comprised of, the content validity, and the face validity. The face validity inquiries about the quality of marking criteria in evaluation of what they are actually intended to evaluate. The content validity is appraised by a panel of experts who evaluate the content of examination for internal coherence and the extent to which the contents serve their purpose¹⁵. It is also very important for OSCE to see "for whom and in what context is a particular OSCE valid?" This means that the OSCE not only caters for the bounds of learning and practice i.e. settings of a particular specialty and atmosphere of a medical school but also the cultural, religious, historical, financial, and political characteristics that are potent drivers of behaviour and revolve around the scenarios and the examinees.

Reliability

The test score obtained is reliable if it gives a judicious clue of a student's performance in that particular test. The OSCE is a reliable method of assessment though several factors influence its reliability e.g. the demeanour of students and examiners and their subsequent interactions; subjective elucidations by the examiners; and environmental factors, such as the examination room, noise levels, light, and temperature.

The subjectivity of the examiner's decisions can be reduced by contracting an independent observer to monitor the conduct of the examiner at each station to scrutinise impartiality and uniformity of the examiners' decisions. Increasing the number of items being assessed can also reduce the chance factors influencing the score and gives a more appropriate estimate of the true score a student is likely to achieve¹⁶.

Objectivity

Objectivity in OSCE is reassured by increasing the number of examiners, use of stereotyped stations with consented checklists or rating scores, ample training of the examiners, and agreed criteria for passing. All the candidates are tested on the same or comparable stuff. The examination is designed in a way taking into consideration level of experience of the examinees and goals of the course¹⁷.

Immediate Feedback

The feedback following assessment of performance of students is a vital element in their learning process¹⁸. The purpose of feedback is to explain to the students with justified reasons how their marking or grading was carried out. It is most effective if given immediately after examination while it is still fresh in the student's mind. In actual fact, when immediate and delayed feedback after the examination were compared, it was found that the students desired immediate feedback over the delayed one¹⁹. The other intents are to identify, appreciate, and reward the qualities in their performance, spot the areas needing improvement, and guide the students about the steps to be taken to cater for

these deficiencies. Immediate feedback can exert a pacifying impact on the stress of examination and makes the process more gratifying both for the students and the examiners. Immediate feedback is the characteristic quality of OSCE. Hodder et al, in a quasi-experimental survey observed that the test group comprising of 50 medical students showed a much larger increase in the scores obtained following two minutes of immediate feedback compared to pre-feedback performance ($p < 0.0001$) in a standard 4-minute OSCE²⁰.

Improvement of Individual Student Performance

The OSCE can be a dependable cumulative assessment tool for individual students achieving the program standards. It also provides meaningful constructive data to students for comparing themselves to their peers. It also helps the faculty in amending content of syllabus to attain student's needs²¹.

Identification of Deficiencies in Program and Curriculum

OSCE can also help to diagnose the gaps in the current training programs, especially for skill-based tasks as highlighted by Pandya et al²². He noted that the participants showed a significant improvement in their performance, especially in tasks related to psychomotor and cognitive domain ($p = 0.0001$ and $p = 0.04$) when assessed before and after revision in the training program directed by OSCEs.

OSCE as a Teaching Tool

By using prevailing resources, the OSCE has proven itself an effectual teaching tool while increasing the educational impact²³. Students have reported that they get benefitted by constructive identification of their short-comings in clinical examinations, and observation of a diversity of interpersonal communication styles²³. In two Pakistani studies on final year MBBS and BDS students, 88%²⁴ and 67.6%²⁵ students respectively, stated that the exam was fair and comprehensive. Ninety-six percent considered OSCE as valid and reliable²⁴ and 87% were happy

with its use in clinical competence²⁴. Considering post graduate residents, Sadia and colleagues observed that the perceived educational value of the OSCE was high (9.2), and the feedback during OSCE enhanced future competencies²⁶. The faculty members also liked the easy marking and grading of pre-set assessment forms used in OSCE²³.

CONCLUSION

OSCE tests both the product and the process while giving due importance to individual competencies and can be used for both formative and summative purposes⁴. OSCE if adopted as assessment tool, ensures integration of teaching and evaluation and interaction of faculty and the students⁴.

CONFLICT OF INTEREST

This study has no conflict of interest to declare by author.

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