The Objective Structured Clinical Examination: A review

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ABSTRACT
Teaching and assessment of communication skills have become essential in medical and dental education. The Objective Structured Clinical Examination (OSCE) has been found to be an appropriate means to assess communication skills within medical education. Studies have demonstrated the importance of a valid assessment of medical students’ communication skills. Thus, this review article aimed at providing an overview of the entire procedure behind an OSCE, describing its underlying aim, and determining the methodological quality of psychometric studies and the quality of psychometric properties of the identified rating scales, its advantages and disadvantages, and the steps and procedures in modeling and OSCE.

KEY WORDS: Objective Structured Clinical Examination, Patient, Physician, Students, Team

INTRODUCTION
The Objective Structured Clinical Examination (OSCE) was introduced by Harden and Gleeson in 1975 as a procedure to assess clinical competence at the bedside utilizing timed stations. Since its prelude as a mode of student’s assessment, the OSCE has become a standard method of assessment in both undergraduate and postgraduate students. The OSCE is a multifarious multipurpose evaluative implement that can be utilized to evaluate health-care professionals in a clinical setting. It is an assessment technique in which students demonstrate their competence under a variety of stimulated conditions. Pristinely described as a timed examination, the OSCE examination has been broadened in its scope and has undergone an abundance of modification to suit peculiar circumstances. Harden and Gleeson described two types of stations: Procedure stations and question stations.[1,2]

In an objective structured clinical assessment, a series of stations in an examination room is set up to examine students. At each station, students may be asked to carry a procedure, which may involve taking history, performing present clinical tasks, and diagnosing patient’s quandaries. The OSCE has been used to evaluate those areas most critical to the performance of health-care professionals, such as faculty to obtain/interpret data, quandary-solving, edify, communicate, and handle capricious patient deportment.[3,14]

In the 21st century, teaching and assessment of communication skills in dental schools are well recognized. Despite the increasing importance of communication skill training in a dental setting, there is a well-noted generalized lack of adequate physician–patient communication.[16] Based on five widely recognized physician–patient communication models, the Kalamazoo I Consensus Statement extracted a list of the following seven key elements that characterize adequate physician–patient communication: (a) Building good relationships, (b) opening discussion, (c) gathering adequate information, (d) understanding the patient’s perspective, (e) sharing information, (f) reaching agreement, and (g) providing a closure.[4] In addition, they represent an outline for the development of dental curricula comprising communication skills training and the assessment and evaluation of students’ performance.[2,4] Multiple studies have demonstrated the importance of a valid assessment of a dental students’ communication skills’ performance for several reasons.[13] Through performance assessment, students become aware of the relevance of physician–patient communication and receive valuable feedback on their merits and demerits. It also enables educators to
identify those students with significant deficits in the dental program and can enable them to provide special importance to help in their growth.

To assess communication skills, most medical and dental schools established the OSCE using interactions with standardized patients (SP). An OSCE consists of various stations with different tasks and goals to simulate the closest real clinical encounters between physician and patient. At that point, it is important to emphasize that different kinds of OSCEs exist which differ in their purpose. While some OSCEs address the assessment of communication skills in an integrated way as part of other clinical tasks such as history taking and physical examination, there are also OSCEs which completely focus on the assessment of communication skills. For the purpose of rating a student’s communication skill performance during an OSCE, different kinds of rating scales have been developed. Yet, the validity of the performance scores of a student is completely dependent on the quality of the rating scales in use. However, a clear study of the existing rating scales and their methodological and psychometric quality has not been conducted so far. Hence, a systematic review is required to (a) evaluate the existing rating scales based on well-defined quality criteria, (b) facilitate the selection of an appropriate instrument depending on their purpose, and (c) illustrate the deficits and needs in research.

Advantages of OSCE

Indited examinations test cognitive erudition, which is only one aspect of the competency. Traditional clinical examination rudimentally tests a narrow range of clinical skills under the observation of customarily two examiners. The scope of traditional examination is fundamentally patient histories, demonstration of physical examinations, and assessment of a narrow range of technical skills. The OSCE, however, covers a broader range such as quandary solving, communication skills, decision-making, and patient management techniques. Apart from providing a uniform marking scheme for examiners and consistent examination scenarios for students, OSCE withal provides an authentic way to assess dental students including pressure from patients. OSCE engenders formative feedback for both the learners and the edification program. Immediate feedback amassed may ameliorate student’s competency at subsequent stations and even enhance the quality of learning experience. One of the main advantages of OSCE is that it minimizes cueing: When students peregrinate to a station, they will require to diagnose patient’s quandaries or carry out some clinical procedure. When they peregrinate to a subsequent station, they have to answer some questions pertinent to their diagnosis or clinical tasks. More students can be examined at 1 time. When a student is carrying out a procedure, another student who has already consummated that stage is answering the question at another station. In OSCE, the setting is more controlled, and a more objective assessment of the student’s clinical competence can be made. Hence, it provides more insights about student’s clinical and interactive competencies. It can additionally assess other consequential aspects of clinical expertise, such as physical skills, interpersonal skills, technical skills, quandary solving facilities, decision-making faculties, and patient treatment skills. 

Disadvantages of OSCE

Since OSCE consists of a number of stations and different tasks, it requires an extensive amount of organizing. It is sumptuous in terms of manpower, resources, and time. OSCE may daunt students from optically canvassing the patient as a whole because the student’s cognizance and skills are being put into compartments. Students only examine a number of different patients in isolation at each station in lieu of comprehensively examining a single patient.

Steps in Modeling an OSCE

1. Resoluteness of OSCE team
2. Skills to be assessed at OSCE stations
3. Objective marking
4. Recruitment and training of SP
5. Logistics of examination process.

OSCE Team

Students, examiners, marshals, and timekeepers are required. Examiners must be experienced and a standard should be maintained. Examiners must be yare to dispense with personal predilections in the fascinates of objectivity and must assess students predicated on the marking scheme. Timekeepers and marshals are required for correct kineticism of candidates and precise time keeping. OSCE is extravagant in terms of manpower requisite.

Skills Assessed in OSCE

The tasks to be assessed should be of variants and varying arduousness levels to provide a commixed assessment. The tasks in OSCE depend on the caliber of students’ training. Early in undergraduate training, correct technique of history taking and demonstration of physical signs to arrive at a conclusion may be all that is required. Other skills which can be tested include formulation of a working diagnosis, data and image interpretation, interpreting investigations, as well as communication skills. There are no hard or expeditious rules to the skills tested but are rather determined by the aim of assessment. Intricate stations for postgraduate students could test varying skills including management quandaries, administrative
skills, handling capricious patient department, and data interpretation. These skills cannot be assessed in traditional clinical examination.\textsuperscript{[4,7,14]}

**Objective Marking Scheme**

Marking in OSCEs is done by the examiner. In frequently indited stations, for example, inditing a prescription chart, are utilized and these are marked like indited examinations, again customarily utilizing a standardized mark sheet. One of the ways that an OSCE is made objective is by having a detailed mark scheme and standard set of questions. The examiner can often vary the marks depending on how well the candidate performed the step. At the terminus of the mark sheet, the examiner often has a minute number of marks that they can utilize to weight the station depending on performance, and if a simulated patient is utilized, then they are often asked to integrate marks depending on the candidates approach. At the cessation, the examiner is often asked to give a “ecumenical score.” This is customarily utilized as a subjective score predicated on the candidates’ overall performance, not taking into account how many marks the candidate scored. The examiner is customarily asked to rate the candidate as pass/borderline/fail or sometimes as excellent/good/pass/borderline/fail. This is then used to determine the individual pass mark for the station.\textsuperscript{[9]}

Many centers allocate each station an individual pass mark. The sum of the pass marks of all the stations determines the overall pass mark for the OSCE. Many centers additionally impose a minimum number of stations required to pass which ascertains that, consistently, poor performance is not compensated by a good performance on a minuscule number of stations.

OSCEs have traditionally been marked on optical mark reader sheets. With the advent of tablet computers and Wi-Fi, a number of systems have been developed to mark examinations electronically, eliminating the desideratum for printing and scanning thousands of mark sheets utilized in each OSCE circuit. Research comparing traditional paper-predicated OSCEs with an online marking implement (OMIS) found paramount ameliorations in terms of precision, financial feasibility, and time costs. Electronic scoring with OMIS increases fairness of result calculations.\textsuperscript{[7,9]}

**Recruitment and Training of SP or Stimulated Patient**

SP may be professionally trained actors, volunteer stimulators, or even housewives. Their utilization encompasses undergraduate and postgraduate learning, the monitoring of doctor’s performance, and standardization of clinical examinations. Candidates disposed to act as patients must be perspicacious, flexible, expeditious cerebrating, and reliable. SP understanding of the concept of OSCE and the role given to them is critical to the overall process. An advantage of stimulated patients over authentic patients is that of sanctioning different candidates to be presented with a homogeneous challenge, thereby reducing a paramount source of variability. They can simulate scenarios that may be distressing for an authentic patient such as terminal illness.\textsuperscript{[6,10]}

Stimulated patients are, however, extravagant in terms of the time that it takes to train and coach them in performing and understanding concepts. The cost of paying professionals integrates to the expense. However, the time efficiency and multifariousness of OSCE make the cost worthwhile.\textsuperscript{[11,13]}

**Logistics of the Examination Process**

Enough space is required for circuit running examination and to accommodate sundry stations, materials, and equipment for the examination. The stations should accommodate an examiner, a student, and the SP. It should additionally sanction for enough privacy of discussion so that the students performing other tasks are not diverted or perturbed. A sizably voluminous clinic room thoroughly cleared could be ideal. The stations should be pellucidly marked and the direction of flow should additionally be unequivocal.\textsuperscript{[6,13,14,19]}

**CONCLUSION**

The OSCE style of clinical assessment, given its conspicuous advantages, especially in terms of uniformity, objectivity, and multifariousness of clinical scenarios that can be assessed, shows preponderance over the traditional clinical setting. It sanctions a comprehensive evaluation of the student testing a number of skills and issues over a relatively short period. OSCE abstracts prejudice in examining students and sanctions all to go through the same scope and criteria for assessment.

**REFERENCES**


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