

## OSCE (Observed Structural Clinical Examination) in Recording Case History Performa in Dentistry: A Narrative Review

Research Article

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### Abstract

The conventional system of dental examination assessment doesn't completely evaluate the students and prepare them for the challenges of a real-world scenario. The current review brings out the advantages of using OSCE as a key tool for the assessment methods across the subject of case history recording among dental students in their final year programs.

**Keywords:** Assessment; BDS; Students.

### Introduction

The training for a dental student thus should reflect upon these guidelines. A curriculum is deemed incomplete without appropriate assessment. OSCE's help to evaluate and grade the progress of the student. It provides substantial corroboration of the learning process. [1] This age-old evaluation method has multiple drawbacks—one of the main drawbacks is that there is a huge possibility of examiners bias along with inadequate sampling of topics covered. The students have a general fear of the examination pattern. Different students in a clinical set up receive different patients with varying difficulty levels. There is a greater chance of lack of interexaminer reliability. [2] One of the many methods to overcome these lacunae in the examination pattern is through OSCE.

Dental training involves a detailed assessment of the patient's information that directly affects the oral health. The subject of public health and preventive dentistry requires persistent efforts in formulating a comprehensive treatment plan for the patient. This needs a capacious consignment of efforts in understanding the aetiology of the complaints and making an informed deci-

sion in curative procedures. A good history taking not only scrutinizes the ability of chalking out a treatment plan.[3] It also contemplates the communication ability of a student.[4] Hence the importance of OSCE evaluation, which involves stations. This in-depth analysis helps to attain the ultimate goal of becoming a lifelong learner.[5] It is less magniloquent towards the care of patients. This pattern is less ostentatious and appreciates the ability of critical thinking.[6] It also proffers a safe learning environment. OSCE helps to provide a pronto feedback as well as an essential serving tool for an ameliorate feedback to the student.

### Purpose of using OSCE as an Assessment Tool

Though dental schools test clinical efficiency, finding the appropriate patient is difficult. Patient communication is a hindrance and inconsistencies arise between examiners. One may be strict while the other may be lenient. Difficult levels of questions asked also vary.[7] Example, a student who gets a simple case of stained teeth faces lesser questions than another who gets a case of oral cancer. The former will get questions that are more likely easier to answer, thus making the assessment unequal between the two students. Therefore to provide a fair assessment method OSCE

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**Received:** February 05, 2021

**Accepted:** October 01, 2021

**Published:** October 21, 2021

**Citation:** Shrikanth Muralidharan, Arunkumar Acharya, Pramila M, Shanthi Margabandhu, Seema Kamble, Deepak M Vikhe. OSCE (Observed Structural Clinical Examination) in Recording Case History Performa in Dentistry: A Narrative Review. *Int J Dentistry Oral Sci.* 2021;8(10):4779-4783. doi: <http://dx.doi.org/10.19070/2377-8075-21000969>

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is a better route.

The main goal of OSCE is to build a competency level among dental students. This helps to avoid missing out key points relevant to the patient's health (both general and oral). Its major implication is to assist in a good case history and treatment plan that will resolve the complaints.[8] The major advantages of OSCE in such cases are-

1. Decreases the risk of litigations
2. Surplus sampling of questions and topics.

Even the teaching mechanism audit is permitted through the procedure.

OSCE needs constant efforts to build tailor-made stations. It also needs organizational skills and is not an easy task in terms of resources. Chisnall's study reported that a positive correlation does exist between the OSCE and student-centred learning process.[9] So it can be used in a formative stage of assessment. But OSCE involves a lot of logistics and which is time-consuming. The general format overall for OSCE is the same. Differences occur in types of questions administered, examiner calibrations, subject and the area of evaluation.

There is a positive correlation between OSCE and student performance in the dental set up.1 Certain questions loom large even then such as-

- a) Time,
- b) Faculty and student participation,
- c) Support from the concerned authorities

Inadequate knowledge among students can lead to a total failure of the entire cause. It may induce a negative attitude towards such mechanisms. Hence a lot more time has to be spent on the basic training of the students to be familiar to this newer format. A dental undergrad student is more concerned about the marks, the performance and futuristic perspective. Expecting a dental student to undergo this procedure is an additional burden. OSCE should be induced right from the beginning of the clinical postings of the students. At times, whatever is very essential for practice is only retained by the students and the rest learning goes waste. These initial clinical exposures are more theory rather than practical oriented bedside clinical teaching.[9] Since they are not evaluated from time to time systematically, they fail to produce any good result.

Case history taking is followed as different schools of thought play across different subjects. While oral medicine and diagnostics record the initial data similarly, their focus is more on the investigative aspects. In public health, we focus more on the levels of prevention. A subject like conservative endodontics may not take a pit and fissure sealant aspect more zealously as preventive dentistry would. Hence this it-self serves as a point of diversion while planning a station for the students. One should aim at OSCE being a stepping stone to achieve higher cognitive skills.

## Design Choice

In the current system, staffs contribute items but have no control or knowledge of when and how these items turn up in the

examination. Today the powerful medical education department tells the teachers what to teach, how to teach it and score the tests. The teachers have opinions, biases, and controversies that their students know and can deal with easily. They know what topic a teacher taught and what will be asked by a particular staff member. The centralized test does not take into consideration these dynamics of class teaching.

In a clinical case history recording, the conventional method may wear out the examiner. A student at the beginning of the exam may be asked a lot of questions. But the student reporting the last is spared with only a few questions. In both the scenarios, if the student is unable to answer a particular question, it may decide the pass or fail grade of the student. He/she may not be asked on the areas that he/she is well aware of.

At times, the viva- voce during case presentation may skip essential areas too. For example, a teacher may skip clinical findings and directly ask the student to read out the treatment plan or defend the diagnosis. Such cases do not have a scope for evaluation of the student in entirety. They also do not weigh each area for constructive criticism and progressive feedback. The strengths of a student have not appreciated with any assistance in regards to improve the weaker areas. Conventional methods thus involve the will and wish of the examiner. They may focus on his/her ideas and areas of expertise only. While the traditional examination may always touch upon psychomotor skills, OSCE may help to move beyond the psychomotor and higher cognitive skills. It helps assess the attitudes of the students towards the patient. Table 01 summarises the drawbacks of the conventional examination system.

A simulated challenging patient (like used in OSCE) is an effective way to test the patience of a student and his/her communication abilities particularly as it can be a stressful scenario. It highlights areas of problem-solving by the means of critical thinking and helps in developing good professional behaviour. This can be achieved through early exposure and formative assessment through means of OSCE. In a health professions education, it is primarily intended to measure the student's acquisition of varied skill sets, along with factual knowledge. These skills include communication, coherent presentation of history and specific physical examination skills.[10]

While it has an excellent positive predictive value; it has poor negative predictive values. This makes it statistically weak for reliability purposes. Hence deciding a pass or fail even during the formative stage is a big challenge. Therefore formulating the appropriate stations and instructions is a vital aspect. Given the fact that this can act as a double-edged sword; the assessment in this regard should be robust and error-free. OSCE can be constructed as an excellent tool to help students perform better with long term team efforts.

Usually, we see students cramming the syllabus. They try to learn repeatedly the same questions and only important topics at the last moment. This does not ensure any form of potential evaluation of the student. OSCE provides no scope for such a cramming. At the stations, what can be asked is not predictable always. Hence, they have to learn everything right from the start. This makes the level of application even higher. Table 02 provides a summary of the advantages of OSCE in general.

**Table 1. Drawbacks of the conventional assessment methods.**

Parameter	Explanation
Difficulty level of examinations	Some students may get an easy question, a few may be asked a difficult one
Bias in marking	Not all examiners provide the same marks. Some may give only passing marks even for answering all questions or for performing the entire procedure correctly
Syllabus	Not covered in entity. Some may ask questions only from the topics they know or prefer.
Time allocated per student	It is not always the same. A few students may be rushed through due to the time constraint. This may arise when at the beginning of the exam; examiners spend more time with candidate.
Subjective	Purely based on the examiners will and wish. No objective assessment is involved
Student feedback	It is missing. Unless some take extra efforts to sit with each, students are not aware where they went wrong.
Communication skills	Not always assessed. Cognitive skills are not always a part of the assessment system.

**Table 2. Advantages of OSCE.**

Parameter	Explanation
Difficulty level of examinations	All students face the same level of difficulty. This is ensured by a proper blue printing and giving weightage to each topic in the syllabus
Bias in marking/scoring	Is eliminated, since the scoring system is objective. Also it is pre tested and validated before a practical application.
Syllabus	Each section of the portions can have a separate OSCE. Hence chances are rare to miss any essential aspect.
Time allocated per student	It is equal for all students. Each student is allocated the same given time and observations on similar grounds.
Nature of exam	It is highly robust and objective in nature.
Feedback	Is immediate. It is an inbuilt pattern in OSCE. Hence each student knows what is expected in which station of OSCE. So a student has time to correct him/herself for the final assessment.
Communication skills	Can be easily assessed. OSCEs can be tailor made for communication skills like patient counselling and breaking any bad news to the patient or the family members.

OSCE involves a lot of statistical analysis and pilot testing for station forming. It has to be tailor-made for both the institutional setup, speciality as well as the student level.[11] It may have to be changed time and again. Also the formation should be flexible enough to encompass any last-minute changes. OSCE necessities that students have to think on their toes to interact with their patients. They also have to critically analyse the clinical decisions regarding the case.[12] A standardized patient requirement in terms of clinical case history recording needs training. He/she has to undergo re-assessment of stipulated answers to be given as in the real-world scenario and this is the biggest advantage. This is one of the major challenges a student faces in dental practise. It thus provides opportunities to assess the interpersonal communication skills; right from the history taking to providing a list of the comprehensive treatment plan options to the patient.[12] A part of this may be missed out in the conventional method. The age-old method in many terms gives rise to the paternalistic behaviour of the dentist. Hence justification of each step is not warranted. This can be avoided with these stations. It helps to advocate informed decision-making during treatment planning which makes the practise more ethical as well as professional.

OSCE has not always been a reliable method in pointing out errors in students work, especially in terms of clinical application.

It is not an appreciated hall mark for judging and predicting the clinical competency of the student. It needs student's acceptance also. It requires a lot of preparation and is time consuming. Moreover it demands additional manpower, stimulated patients, a camera recording, building of stations, training of staff with the students and developing a feedback mechanism. This may be an impossible feat if a large set of students are taking the exam over a set of multiple stations. OSCE has never been a cost effective or a cost beneficial approach for summative type of examinations. The set up needs to be changed with each task. Such specific stations can be built for each section of the syllabus in the practical examinations. One may have more than 5 stations also, each especially designed for a particular portion. Table 03 enlists a few sample stations that are usually used for OSCE.

This makes OSCE conducive for a-long term utilization. Verbal, immediate feedback during OSCE is practical and can improve competency in clinical skills. There is a good scope to develop a good feedback mechanism also for each section, so that all the essential points are touched upon. Nevertheless, negative feedback like in conventional pattern could trigger long lasting emotional responses. It also leads the examinees to think that it is too risky and useless.

There is some criticism also that OSCE faces. Brand reported

**Table 3. Examples of OSCE stations that can be used in case history recording assessment.**

Stations
Demographic data recording
Chief complaint and history of present illness
Diet history recording
Eliciting signs and symptoms of the complaint and other associated risk factors
Drawing a comprehensive treatment plan
Health education to the patient on oral hygiene practices
Making informed decisions based on the levels of prevention for a specific condition or multiple conditions

**Table 4. Practical difficulties in OSCE as an assessment tool.**

Parameter	Explanation
Cost involved	Is higher due to different set up requirement. Some have to be tailor made for each section and cannot be applied generally
Examiner training	Validating the scoring criteria can be cumbersome. It may need pilot testing of the questions and criteria.
Student training	Each student needs to be aware of how to face an OSCE. So a dedicated time and staff is needed for it.
Pass or fail decision	It is always a challenge to decide what the cut-off for passing or failing is. A student may perform 9 of the 10 procedural steps. But the last may be the deciding one. So brainstorming is needed among the staff.
Time	A lot of time is taken up for an OSCE. Even a single station OSCE needs ground work and preparation to some extent.
Participation	It is the main component to decide the success of the OSCE. Some students may find it too intimidating while a person constantly watches them perform a particular procedure. A few staffs may also find it cumbersome.
Resources	It needs a lot of not only manpower from the teaching staff, but it needs simulated patients, cameras, armamentarium and cubicles/ rooms for OSCE stations. It may not be possible always in a teaching set up.

that this type of assessment was the most anxiety provoking assessment method.[13] Students prepared more for the OSCE compared to other examinations. The expectation to succeed was higher for the OSCE. Higher anxiety level during OSCE was due to the expectation level from the student rather than the scores obtained or the apprehension of failing to succeed. But the authors also stated that the satisfaction of teachers and students with OSCE was much higher. Table 04 provides a few practical difficulties in OSCE as an assessment tool.

To summarize overall, OSCE is not error free but it is better in many terms when compared to the conventional methods. It provides for greater insight into the student's ability to perform. It also highlights the scope for improvement and at the same time gives teachers an opportunity to provide an unbiased and objective feedback. This technique needs to be a part of the system in the entry level itself. It is dedicated to enable the student to know what is being expected of him/her. OSCE can serve to help focus on areas like patient handling, better communicating skills and a thorough professional behaviour. It can be costly affair. Administrative support and encouragement is required for making OSCE application a success. The training of teachers and students can also be a big challenge. A sudden drastic change in the system is not always welcomed by one and all. But in today's scenario, a curriculum is more than mere teaching. A proper and honest assessment is a challenge for all. Not only is assessment a task for the student, but it is also demanding efforts from the staff too. Like a make-or-break situation, it may affirm the student to be worthy enough for a practise or it can render him/her a failure. Most

of the time, the attitude of the examiner plays an essential part. OSCE as a formative pattern of exposure at an early stage can help to reduce exam related fear and apprehension throughout the curriculum. It reflects on the area to learn and perform by the student. At the same time it can also assist the teacher to understand the student better and help him/her to the best of abilities. OSCE can also qualitatively help to evaluate performance-based assessment for better interexaminer reliability. It is not a one-day work; it involves a continuous effort on part of the staff and the students to learn and improve. As a two-way process; it needs to have an outcome of better service to the patients at the end. It should help raise the standards of treatment to the highest possible level of patient satisfaction.

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