



PERCEPTION OF DENTAL STUDENTS TOWARDS OSCE, A STANDARDIZED CLINICAL ASSESSMENT METHOD.

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Abstract: OSCE (objective structured clinical examination), one of the standardized clinical assessment techniques, is widely implemented in medical and dental education in European countries. In Saudi Arabia, OSCE alertness is expanding, and a few tentative attempts have been made in its execution. This article describes the experience by using an experimental study of OSCE for formative assessment of dental diagnostic and surgical skills. Apart from our experience in OSCEs, the other purpose was to study their validity, objectivity, feasibility, acceptability to students and faculty, and impact on student performance. The result showed that the OSCE was able to test clinical judgment and skills and is a better method for evaluation. Although the students reported that it was well organized and that the time allocated for each station was appropriate. The dental students perceived that the OSCE was a suitable method to test surgical clinical judgment and skills.

Keywords: Assessment, Education, Formative, OSCE, Validity

Introduction: With the continuous improvement in the educational society especially in the field of health sciences, examinations for the assessment of students learning outcomes, has become one of the major tool. Passing or failing, learning or achieving, knowledge or assessment all these have a strong consequences on students careers. Dentistry and

medicine is considered to be one of the toughest subjects which necessitated assessment of clinical competence as fundamental to ensure proper patient care once the students qualify as healthcare providers.

The objective structured clinical examination (OSCE) was first described by Harden in 1975 with an aim to appraise clinical/experimental competence and skills of students in a comprehensive and reliable manner with a special focus on the objectivity of the process. [1, 2] There has been an enormous agreement of curiosity in the assessment method in dental education worldwide, with many universities adopting it due to the number of inherent

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deficiencies in reliability, objectivity, variability, and the limited competencies examined in other assessment methods.

After the introduction of OSCE format in medical education, it began to be introduced in dental education. [3, 4] It became an important assessment tool in the education of nursing, medical, dental predoctoral and postdoctoral students, where it can be used for basic clinical skills evaluation. [5] The OSCE requires that examinees rotate through a series of stations in which they are asked to perform a variety of clinical tasks which tests their knowledge, cognitive, psychomotor and communication skills, during a pre-specified period of time. All students undergoing OSCE, face the same predefined clinical tasks in the same time limit and are directly observed and scored by examiners so as to minimize subjective bias. [6, 7, 8]

OSCE in the dental school of Saudi Arabia is typically a new experience for both staff and students with a establishment of change in assessment methods. Hence, a trial study of standardized clinical assessment technique (OSCE) was planned with the aim to investigate and evaluate certain aspects such as validity, objectivity, feasibility, acceptability to students and faculty, and students' attitudes and opinions regarding the implementation of an OSCE.

Material & Method: The study sample included the final year dental students (n=30) of Buraydah Private Dental College, Saudi Arabia. The Department of Oral & Maxillofacial surgery formed an OSCE committee to investigate and formulate this method to implement the exam. The committee had conducted a one-day workshop to sensitize the staff regarding the basics of OSCEs and also a day workshop for students to orient them towards OSCE. This included specifying domain-specific objectives, identifying

appropriate tasks and resources required, and developing checklists and standard setting, instructions to candidates, and overall logistics regarding the nature of the exam and its various aspects.

Thirty five stations (30 test stations and 5 rest stations) were selected for the final exam with few stations including props such as dental models, simulated patients, photos, or radiographs. The stations included to assess 1) communication skills 2) patient examination 3) Case Scenario 4) Interpretation skills &5) psychomotor skills. Five minute were allotted for each student in each station. All the stations were numbered, and arrows were provided to direct the easy flow of students through the exam. Staff members were allocated to each station to monitor and prevent tampering with exam items and to answer any questions that may arise during the exam.

Follow-up questionnaires were distributed to the students at the end of the OSCE, and they were asked to complete the questionnaire and return it to the staff member. The questionnaires were designed to assess the students' attitudes and opinions regarding the implementation of an OSCE. The collected data were statistically analyzed using descriptive analysis through SPSS software (SPSS Inc. 18, Chicago, IL, USA). Statistical analysis with 0.05 level of significance was considered as statistically significant.

Result: 30 students appeared for the OSCE as well as responded to the questionnaire. There were 17 females (56.7%) and 13 males (43.3%). 3.3 % students reported OSCE to be very difficult exam, 36.7 % difficult, 56.7 % easy and 3.3 % very easy for the response regarding the design of the OSCE. Overall 40% reported difficult exam and 60% reported it to be easy exam, with no statistically significant result.(Table 1)

Table 1 – Scores regarding examination difficulty

S.No	Examination difficulty	Number of students and percentage (%)
1	Extremely difficult	1 – 3.3 %
2	Difficult	11 - 36.7 %
3	Easy	17 - 56.7 %
4	Very Easy	1 – 3.3 %

Table 2- Objectivity of exam and clinical skills assessment percentage

S.No	Exam Objectivity	Psychomotor skills
1	Good - 83.3% (n=25)	Positive – 76.7 % (n = 23)
2	Not good - 16.7%(n = 5)	Negative – 23.3 % (n = 7)

83.3% students found the exam with good objective whereas 16.7% did not found it objective. The psychomotor skills were judged in which 76.7 % stated positive response whereas 23.3 % suggested negative response that it did not test their clinical skills. The difference among both the results were statistically significant ($p < 0.001$).

The overall mean score of OSCE was 74% on passing standard whereas 26% showed poor performances at few of the stations. The students score ranged between 16 to 27 with a mean of 21.5, out of 30. The mean scores of female was 21.5 with the least being 16 and the highest being 27, whereas that for males was 16 the least and the highest being 25. No statistically significant difference was observed between the genders.

Discussion: Learning programs with a clinical component may require a test for clinical skills by means of various clinical evaluation techniques. This could be in the form of inspection, checklists, rating scales, case studies, and self-assessment, along with some of the standardized clinical assessment techniques including simulations, triple-jump exams, senior-exit exams, mock board exams, role play and objective structured clinical examinations (OSCEs). Many studies have initiated and confirmed that standardized exams are an effective, objective, and consistent means of assessment and are becoming more prevalent among health care professionals.[9 – 13]

In the present study the overall score of the students towards OSCE was satisfactory except for 23.3% of students. This could be due to poor performances of few of the students at certain stations, lack of sufficient knowledge and experience in identification and interpretation of clinical or radiographic data provided. This may also be due to deficiencies and variations in the demonstration of these procedures by the faculty members.[14]

Validity must need facts including substance, response, internal structure, relationship to other variables, and consequences. [15] The skills require the student to achieve objectives under affective, cognitive, and psychomotor/communication domains. The checklists were prepared to assess objectives under all three domains and were judged by the faculty member at appropriate stations. The faculty members as well as the students of our college were agreed that both the objectives chosen to be assessed and the task to be performed at each station were appropriate. The time allotted at each station was five minutes which was adequate for the faculty members but 48% of the students reported it to be insufficient at few of the station. 62% of the students felt that the meeting held by the committee members to explain the nature and format of the exam through power point presentations, sample questions and stations, made them well-known with the new format and was reflected in smooth conduct of the examination.

The OSCE was successfully carried out with significant contribution and effort by the faculty members in organizing, assembling and arranging the materials required for and during the OSCE exam. The feasibility of the exam was improved due to the workshop conducted for faculty members as well as an orientation programme for the students regarding OSCE. The introduction of this new form of the exam was well accepted by the students as well as the staffs. The scores obtained were transparent, objective, well structured, uniform and standardized time allocation and without inter-examiner variability.

The feedback received from the students was strongly in favour of OSCE, but few of the students reported it to be stressful and scary. The impression that students preferred is that the oral surgery subject is difficult to study, understand and remember, hence, OSCE should be exposed during the posting in the department

rather than at the end. However, the scores obtained by the students indicated more critical assessment that occurs with the checklist which might punishes the low performers whereas rewarding the high performers. The use of checklist made the assessment much easier, but calculation of marks needs to be done very strictly.

In conclusion, we could say that more conceptualization and preparation is required for an OSCE than for other assessment methods, hence to achieve this great deal of support is needed from the staff, student and management of the respective college/universities. Because of the interdisciplinary unit and the students' more pragmatic self-assessment in the test, the OSCE is considered as a suitable alternative tool to test the surgical clinical skills and judgement of dental students so as to promote reflective thinking in the students.

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