

Assessment of Iranian Dental Lecturers Attitude and Perspectives Toward Objective Structured Clinical Examination (OSCE)

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Abstract: Assessment of clinical skills has a central role in dental education. OSCE has been introduced as an effective method to provide a reliable assessment in this regard. This study aimed to describe lecturer's attitude and perceptions toward the annual OSCE implemented in an Iranian dental school. Faculty member's opinions from 10 departments of Dental School, Shahid Beheshti University of Medical Sciences in Iran were collected after the winter OSCE in 2010 using a structured questionnaire. The questionnaire consisted of 8 statements and the faculty members were asked to rate them from strongly agree to strongly disagree in Likert's scale. Data were retrieved and the frequency of responses were calculated and subjected to analysis using SPSS 16. The response rate was 67.1%. The overall attitude of the faculty members were positive toward the exam and did not show statistically significant difference between departments ($p = 0.163$). About 84.4% of the lecturers found OSCE a time consuming method nevertheless, 71.3% admitted that bias is significantly reduced in this method of evaluation. Furthermore, 94.2% of the faculty members confirmed the necessity of education and standardization of the examiner in designing a reliable OSCE. Although, OSCE is a time consuming and costly method, if designed and implemented by a group of professional and well educated staff, it is a reliable method to assess the clinical skills and capabilities of dental students.

Key words: OSCE, faculty, perception, clinical skills, assessment, Iranian dental school

INTRODUCTION

Assessment of clinical competence and communication skills with patients has always been in the center of attention among teachers and faculty members when evaluating the expected learning outcomes of medical education (Troncon, 2004; Conigliaro and Stratton, 2010). Several assessment tools have been proposed to evaluate the clinical skills of medical and dental students in the guideline released by the Association for Medical Education in Europe (AMEE) in 2003 (Shumway and Harden, 2003). Traditional formats of clinical examinations lack objectivity as the students are assessed on different patients by different examiners who mark the candidates subjectively. The Objective Structured Clinical Examination (OSCE) has been shown to be a valid and reliable assessment instrument in areas such as history taking, physical examination, treatment planning and management in a comprehensive, consistent and structured manner (Crossley *et al.*, 2002; McLaughlin *et al.*, 2006; Ruesseler *et al.*, 2010). It is a multi-station performance-based examination format for objectively assessing clinical competence in a structured,

standardised manner (Agarwal *et al.*, 2010). The number and length of stations can vary depending on the format in use. However, an average OSCE is said to consist of 15-20 stations which students rotate individually (Alinier, 2003). Each station presents part of a case or problem using simulated/standardised patients, slides, audio-tapes, photographs or laboratory reports and requires examinees to perform a specific procedure, solve a problem or record requested findings (Harden, 1988; Agarwal *et al.*, 2010).

Since its introduction, OSCE has widely been applied to different levels of training i.e., undergraduate, postgraduate and national board exams in many disciplines of healthcare education and health professionals have begun to debate many aspects of this process (Rushforth, 2007). Although, it provides an objective evaluation of a wide range of clinical competencies with reduced risk of examiner bias developing a reliable OSCE requires extensive resources such as personnel and facilities, funding, support from the faculty, the administrative authority and students (Hodges *et al.*, 2002a, b; Watson *et al.*, 2002; Schuwirth *et al.*, 2003; Shumway and Harden, 2003;

Bartfay *et al.*, 2004). Dental education has undergone drastic changes over the recent years and the authorities have been incorporating innovative concepts of education and evaluation into dental curriculum and the educational programs. Since its introduction, OSCE has been regarded as a successful method of evaluation in different academic settings however, there is uncertainty regarding the validity, reliability and efficacy of the current format implemented in Iranian dental Schools. This study aims to assess the dental faculties' attitude toward OSCE in Shahid Beheshti University of Medical Sciences in 2010.

MATERIALS AND METHODS

About 103 dental faculty members from Shahid Beheshti University of Medical Sciences, Tehran, Iran were invited to participate in this descriptive cross sectional survey. Those who were not familiar with the OSCE were excluded. So as not to influence the candidate's response, the questionnaires were anonymous.

The questionnaires were distributed and collected on the due date of winter OSCE in 2010. The OSCE took place simultaneously in 10 departments (i.e., Oral medicine, Periodontics, Oral and maxillofacial surgery, Oral radiology, Prosthodontics, Operative dentistry, Endodontics, Pedodontics, Orthodontics and Oral pathology). The format of the exam in each department was determined according to the requirements and curriculum materials of the specific program. The questionnaire was developed based on a comprehensive literature review and modified from a previously validated instrument used to evaluate a similar group of students (Noohi and Motesaddi, 2009).

To ensure content and construct validity, two senior faculty members with experience in dental education, curriculum design and evaluation, reviewed the instrument. Modifications were made to better fit the study objectives and ambiguous items were clarified. The instrument then was reviewed again and further refined for use in the study. It consisted of eight close ended questions and the faculty members were asked to rate each question in a 5-score Likert scale from strongly agree

to strongly disagree. The relative frequency of responses in each department was calculated and subjected to Kruskal Wallis test to determine statistical significance between the groups.

RESULTS AND DISCUSSION

The response rate among faculty members was 67.1% (N = 68). Table 1 shows the frequency (%) of responses to each question. About 37.9% of faculty members found the OSCE an effective tool to assess communication skills and patient management. A considerable proportion of the examiners (84.4%) believed that OSCE is a time consuming method of evaluation yet 71.3% confirmed that bias is significantly reduced in OSCE compared to other means of evaluation. The majority of faculty members (92.4%) confirmed the necessity of standardization among the faculty members for designing and conducting a reliable OSCE.

The overall attitude of the lecturers toward OSCE was positive and did not show any significant difference between different departments ($p = 0.163$). OSCEs have a central role in providing a formative evaluation of clinical competence and patient management skills plays in different clinical disciplines including dentistry (Hodges *et al.*, 2002a; Mavis and Henry, 2002). In order to develop and expand the use of OSCE, it is necessary to identify the associated limitations and weaknesses of its application (Hodges *et al.*, 2002b). Thus, researcher sought to evaluate dental faculties' perception and attitude toward this method in Shahid Beheshti University of Medical Sciences.

Troncon (2004) proposed that absence of a favorable attitude toward innovative educational programs among students and faculty members in Brazil may ascribe for the limitations of implementing OSCE for clinical evaluation. However, the findings demonstrated a positive attitude among the faculty members of Shahid Beheshti School of Dentistry in Iran which was consistent with that of Noohi's in Kerman university of Medical Sciences, Kerman, Iran (Noohi and Motesaddi, 2009). This indeed describes the positive trend toward educational development strategies among Iranian dental schools. Other studies have further

Table 1: OSCE questions and frequency of responses

Questions	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
OSCE is an effective tool to evaluate different aspects of clinical skills	19.7	51.5	16.7	12.1	0.0
OSCE is an effective tool to assess communication skills and patient management	7.6	30.3	30.3	24.2	7.6
OSCE provides an objective evaluation of the student's clinical competencies	16.7	47.0	18.2	15.2	3.0
OSCE reduces bias in clinical evaluation	16.7	57.6	22.7	1.5	1.5
OSCE is more time consuming compared to other methods	40.9	43.9	7.6	4.5	3.0
The more the stations, the higher the validity of OSCE	25.8	45.5	12.1	16.7	0.0
The less the stations, the higher the specificity and clarity of answers	7.6	16.7	33.3	33.3	9.1
OSCE requires specific training and standardization of the faculty members	54.5	37.9	6.1	1.5	0.0

confirmed the success of OSCE among other assessment methods (Fields *et al.*, 2007). Regarding the efficacy of OSCE as a reliable means of evaluating communication and patient management skills, the majority of faculty members stated that in the presence of a Standardized Patient (SP), this aspect of clinical competence would effectively be assessed by OSCE. SPs could be lay persons trained to portray a scripted patient presentation in a standardized and consistent fashion or a healthcare professional i.e., senior residents or faculty members (Wang *et al.*, 2004; Iramaneerat *et al.*, 2008). In the modified OSCE carried out in 2009 in Pakistan, inclusion of standard patient as one of the items of the exam was shown to be effective in evaluating different aspects of clinical competence including patient management (Iqbal *et al.*, 2009). Cannick *et al.* (2007) performed an OSCE to evaluate the communication skills and tobacco cessation counseling technique of dental students and reported that OSCE is a unique evaluation tool that can be used to provide a standardized assessment of student's competency in several areas of dental education including communication skills, medical history taking and treatment planning (Cannick *et al.*, 2007). Other studies have also shown the use of standardized patients to be effective in evaluating patient management skills in pediatric dentistry and geriatric practice (Fabiny *et al.*, 1998; Zartman *et al.*, 2002; Tung and Thomas, 2009). Although, training proctors (dentist or non-dentist) to act as a standardized patient may be associated with specific costs, the benefits accrued can easily repay the efforts and resource expenditure (Kay *et al.*, 1994; Wallace *et al.*, 2002; Amano *et al.*, 2004).

In the present study, most faculty members believed that OSCE is a less-prone-to-bias method of evaluating clinical competencies compared to other evaluation tools (Table 1). Developing a standard check list for the examiners/raters that includes all the tasks the student is expected to demonstrate, renders a fair scoring process which enables the faculty members to judge the student's clinical knowledge or performance (Doig *et al.*, 2000; Zartman *et al.*, 2002).

Numerous studies have documented the fact examination bias is significantly reduced in a well designed OSCE (El-Nemer and Kandeel, 2009; Iqbal *et al.*, 2009). However, some researchers believe that OSCEs are vulnerable to systematic biases due to rater fatigue. Incorporating frequent rest periods for the examiners and involving multiple raters to evaluate the examinee's performance based on a standard checklist could reduce the possibility of such errors (Humphris and Kaney, 2001; McLaughlin *et al.*, 2009). Regarding the number of stations, researcher found limited data to dispute whether

it has any effects on the quality of OSCE. Evidence suggests that the number of stations should be determined by the curricular material and the time available to perform the OSCE (Zartman *et al.*, 2002; Faryabi and Farzad, 2010). In the present study, however the majority of researchers believed that more stations increases the internal validity of the OSCE (Table 1). OSCE in dentistry may include written or practical stations. Thus, a professional team of specialists in each specific program of dentistry and experts in dental education should be responsible for designing and implementing the OSCE and training the standard patients. The majority of the faculty members in this study unanimously believed that designing a robust, reliable and standard OSCE requires more time and specific trainings and standardization of the organizing team.

This finding was consistent with other reports which documented the high costs associated with implementing a successful OSCE (Holmboe and Hawkins, 1998; Barman, 2005; Humani and Foroughi, 2008; Iqbal *et al.*, 2009). However, despite all the extensive resources and the expenditure, OSCE has been shown to be the most reliable means of evaluating practical and clinical skills in different disciplines of healthcare education and thus should be further developed to meet all the requirements of a successful assessment tool (Furlong *et al.*, 2005; Saboury and Dastjerdie, 2010).

CONCLUSION

The results indicate that although, the faculty members found OSCE an expensive and time consuming method if designed and implemented by a professional team, it can render valuable results in evaluating student's clinical knowledge and performance.

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