

# Evaluation of the Post-graduated Students' Perception About Objective Structured Clinical Examinations (OSCE) in Dentistry Faculty of Tabriz University of Medical Sciences in 2013-14

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## ABSTRACT

Evaluation has always been an important component of the education and is a reliable tool to assess the students' learning. Best known method for testing clinical skills is Objective Structured Clinical Examination (OSCE), which can assess the level of achievement of educational goals. The aim of this study was to evaluate of the Post-graduated Students' Perception about Objective Structured Clinical Examinations (OSCE) in Dentistry Faculty of Tabriz University of Medical Sciences in 2013-14. In this cross-sectional study, all residents of the prosthodontics, pediatric dentistry, orthodontics, pathology, restorative dentistry, endodontics and periodontics were evaluated. Data were analyzed in SPSS21 software. In this study, P value less than 0.05 was considered statistically significant. 64.1 percent were aware of OSCE evaluation purposes. Also 64.1 percent know OSCE as an appropriate method for the assessment of practical skills. And 56.4 percent agreed that clinical diagnosis skills will be assessed by the OSCE as well. 64.2 percent before the test and 74.2 percent after the test, know it stressful method, But this difference was not significant ( $P>0.05$ ). However, testing students using OSCE can increase students' stress, but overallly it is a good way to evaluate the scientific and practical knowledge.

**Key words:** OSCE, attitudes, residents

## INTRODUCTION

Evaluation has always been an important component of training and is a reliable tool to review the level of students' learning<sup>1</sup>. Information and theoretical knowledge of student and how they can express ideas are evaluated by written tests, assignments and projects. The performance and suitability of performing the action must be evaluated by tests simulating the real environment which evaluates not only cognitive domain but also emotional and psychomotor domains<sup>2</sup>.

The best known method for testing clinical skills is Objective Structured Clinical Evaluation (OSCE) which evaluates the achievement of educational goals in the areas of cognitive, emotional and psychomotor in medical students<sup>2</sup>. This method was performed and introduced for the first time in 1975 in Scotland by Harden to evaluate medical students and was unlike other tests, such as oral questions, essay or multiple choice but is an organized framework consisting of several stations in which student spins to evaluate and demonstrate various skills<sup>3-5</sup>.

Given that OSCE test has expanded in recent years in evaluating various clinical disciplines and there is no valid evidence to confirm or refute the current structure and given that the students' views about the assessment of practical knowledge are sometimes different and sometimes opposite and considering the viewpoints of students to assess the efficacy of OSCE method will be useful in their clinical evaluation in planning further education. Thus the aim of this study is to investigate the attitudes of specialist students toward practical examination by OSCE and analysis of these causes and results announcement to the heads of departments and faculty authorities while taking students' scores into account and reducing related problems in order to help promote better teaching methods and contribute to human flaws.

## MATERIALS AND METHODS

In this descriptive cross-sectional study, two questionnaires were designed one before and another after the holding of OSCE test were made available for professional assistants of departments of prosthodontics, pediatric, orthodontic, pathology, restorative, endodontics and periodontics.

Because this test is not held in the surgical, radiology and diagnosis wards, the target population are professional assistants of prosthetics, pediatric, orthodontic, pathology, restorative, endodontics and periodontics of Tabriz Faculty of Dentistry. Sampling was conducted by census.

In this study two questionnaires were designed ;one before and another after holding the OSCE test were made available for assistants. The questions before the exam consisted of eight five-choice questions and the questions after the exam consisted of seven five-choice questions which bordered on the general attitude of professional assistants of these sections towards OSCE method compared with Likert scale. Questions were designed based on frequently asked questions raised in previous similar studies and the necessary reforms were carried out by two experts in the field of specialist dental training. Thus validity of the questionnaire in form of content validity was calculated using credible sources and the opinion

of experts and its reliability was calculated with a Cronbach's alpha coefficient (0.83). It should be noted that relevant questionnaires by a trained person mentioning necessary explanations about the objectives of this study and at the appropriate time that students have the necessary intellectual leisure, were distributed among them. It should be noted that this test was held at the end of the second semester of the 2014-15 academic year. Having obtained consent to participate, studying the professional assistant's course at the Faculty of Dentistry of Tabriz Medical Science University are among the inclusion criteria of subjects to the research. Exclusion criteria consisted of not wanting to participate in the study.

The data obtained from the study was evaluated with descriptive statistics (frequency-percent) using the Software 21 SPSS. In this study,  $P < 0.05$  was considered statistically significant.

## Findings

As can be seen in Tables 1 to 4, 64.1% of students are aware of the goals of OSCE method in evaluating clinical knowledge and in contrast, 12.8% of them were unaware of this issue. Also 64.1% (totally agree and agree) of assistants know OSCE as an appropriate method for evaluating practical skills while 20.5% (totally disagree and disagree) are against this assumption. 56.4% agree that dental clinical diagnostic skills are well evaluated by OSCE, however, 12.8% are against it. 61.5% of assistants stated that OSCE can cover a range of practical skills and methods. In contrast, 18% had opposite view. 71% of residents agreed that OSCE reveals weaknesses in practical work but 15.4% had an opposite view. About the usefulness of written questions in the OSCE, 61.5% were in favor and 15.4% were opposed. 74.4% of assistants agreed that informing students of their strengths and weaknesses in evaluation by OSCE advances their scientific knowledge. In contrast, 10.3% percent were opposed to it. Ultimately 69.2% of the assistants believed OSCE to be a factor to increase stress of assistants while 10.3% differed in opinion.

64.6 % of assistants agreed on the time allocated to each test (agree and totally agree) contrary to 16.2% who were against it (disagree

**Table 1: Relative frequency distribution (percent) of students' answers to questions evaluating scientific knowledge by OSCE method before the test**

Questions	Totally agree	agree	Abstained	disagree	Totally disagree
I know the goals and methods of OSCE.	15/4	48/7	23/1	7/7	5/1
OSCE is a good way to assess the skills of Dentistry.	17/9	46/2	15/4	17/9	2/6
Clinical diagnostic skills in dentistry is evaluated well by OSCE.	7/7	48/7	30/8	7/7	5/1
Evaluation through OSCE can cover the whole range of practical skills	5/1	56/4	20/5	15/4	2/6
OSCE highlights my weaknesses in scientific work	15/4	56/4	12/8	10/3	5/1
The existence of written questions is useful in the evaluation through OSCE.	12/8	48/7	23/1	15/4	0
Knowing the strengths and weaknesses through OSCE results in advanced scientific knowledge	23/1	51/3	15/4	7/7	2/6
Evaluation through OSCE increases students' stress	41/0	28/2	20/5	7/7	2/6

**Table 2: Relative frequency distribution (percent) of students' answers to questions evaluating scientific knowledge by OSCE method after the test**

Questions	Totally agree	agree	Abstained	disagree	Totally disagree
Time allotted for each test was appropriate	19/4	45/2	19/4	9/7	6/5
Instructions for each station were clear	16/1	48/4	22/6	12/9	0
Instructions for each station was within the logical process	9/7	54/8	22/6	12/9	0
More stations provides the possibility of further evaluation of student	6/5	58/1	22/6	12/9	0
Fewer OSCE stations would have greater and more effective response	19/4	48/4	12/9	19/4	0
Evaluation by OSCE improves my practical skills and knowledge	16/1	51/6	19/4	12/9	0
I agree with doing practical work in the part of OSCE test	48/4	19/4	25/8	6/5	0
Evaluation through OSCE increases students' stress	32/3	41/9	22/6	3/2	0

and totally disagree). 64.5% of assistants clearly knew instructions for each station while 12.9% considered instructions to be improper. Also from the viewpoint of 64.5% of assistants, instructions for each station was within the logical process and 12.9% opined that the instructions process is unreasonable. 64% of assistants believed that a greater number of stations may provide better student assessment but 12.9% percent gave the opposite view. On the other hand, 67.8% of assistants agreed with reducing the number of stations to enhance effective response and only 19.4% differed. 67.7% of assistants declared that OSCE test improves their skills and practical knowledge and 12.9% believed this test to be ineffective in relation to promoting practical skills and 6.5% were against it and ultimately 74.2% of them believed OSCE test to be a stressor method and only 3.2% had a different view (Tables 2 to 4). Although professional assistants agreed more after the test compared with the earlier which stated that OSCE test increases their stress which Wilcoxon test showed that this difference was not statistically significant ( $P > 0.05$ ). Also, despite the fact that professional assistants after the test had more agreement than before that this test will improve their practical abilities however, this was not also statistically significant ( $P > 0.05$ ).

## DISCUSSION

Evaluation has always been an important component of training and is a reliable tool to review the level of students' learning<sup>1</sup>. The best known method for testing clinical skills is Objective Structured Clinical Evaluation (OSCE) which can evaluate the achievement of educational goals in the cognitive, emotional and psychomotor areas in medical students. This study was conducted to investigate the attitudes of residents toward practical examination using OSCE method and analyses of these causes and announcement of results to the heads of departments and Faculty authorities while taking students' scores into account and reducing related problems, helps to promote teaching methods and reduce human flaws.

The questions before the test showed that the professional assistants had a positive attitude toward OSCE. Many clinical students believe this

method of evaluation to be effective in their clinical skills [6-8]. Although it seems that dental students are less familiar with the OSCE evaluation methods in comparison with medical students<sup>9</sup>. However, the majority of assistants (64.1%) showed that they are informed of the goals and objectives of the OSCE test thus making the method a good way to advance their practical knowledge. This is consistent with the findings of Imani and Awais studies on medicine and pharmacy students, respectively [10, 11]. However, it did not match the results of Faryabi's study which examined dental students' perspective<sup>3</sup>. In Faryabi's study majority of students preferred writing method against OSCE and only 34.8% of them believe this method to be useful<sup>9</sup>. Regarding the question of whether the OSCE test increases students' stress, 69.2% in pre-test and 74.2% post-test agreed with this; this difference was not statistically significant ( $P > 0.05$ ). However, in a study by Jalili in Kerman, 63.3% of medical students announced that OSCE method did not increase their stress<sup>12</sup>. Brand and colleagues compared the stress of OSCE test in 2009 with other evaluation methods and concluded that since dental students spend more time preparing for the OSCE test, they probably will have more stress<sup>13</sup>. Also in a study by Zartman and colleagues in 2002 which was conducted in the children's department to evaluate OSCE, there were numerous reports of anxiety symptoms including trembling hands and changes in the tone of voice<sup>14</sup>. In various studies, students have mentioned many different causes for this stress to include lack of familiarity with the type of test, the invigilators and teachers and the lack of meaning in questions<sup>15</sup>. Also in this study, although assistants had more agreement after the test than before that this test will improve their practical skills, this was also not statistically significant ( $P > 0.05$ ). In a study by Schoonheid-Klein and colleagues which was done in 2006 to assess the impact of the OSCE on educational strategy and management of periodontal diseases in patients using 72 students in the third year of dentistry, comparison was done with writing method in the Department of Periodontology of Amsterdam in the Netherlands. It was concluded that comparing testing by OSCE method and written examination, different impact on students' educational results will be achieved. This kind of exam stimulates students to study in the clinic and

grants them a higher level of realistic self-assessment and the result of their study supports this accepted sentence that "Assessment, guides training"<sup>16</sup>. About the impact of the number of stations on the quality of the test, most assistants believed that more stations to be effective in improving the quality of test (46.6%). This finding was similar to Faryabi's study [3]. 64.5% percent of students believed the instructions of Stations are clear and stations have logical process which

proves the proper structure of test in different departments.

## CONCLUSION

Although OSCE test method can increase the stress of Students and assistants, overall, it is a good way to evaluate scientific and practical knowledge of students.

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