

Original article

## Attitudes of Interns and Graduates of the Faculty of Dentistry at Libyan International Medical University Towards the OSCE Exam

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### Abstract

An OSCE can be defined as an assessment tool that is standardized and based on simulation to comprehensively measure candidates' cognitive, psychomotor, and practical clinical skills. It is, in fact, a structured station examination unit where several students can display their clinical performances using the same material. This is a standard assessment tool for dental universities. Objective Structural Clinical Examinations (OSCEs) are widely used to evaluate clinical competence in dental education. The study assesses the perceptions of dental interns and graduates about the OSCE format at the Faculty of Dentistry-Libyan International Medical University (LIMU). The study used cross-sectional descriptive methodology to assess interns' and dental graduates' attitudes and perceptions toward the Objective Structured Clinical Examination (OSCE). The total sample size was 180, but it was reduced to 130 after evaluation. The dental interns and graduates completed the structured online questionnaire outlining a mixed survey program on attitudes toward the goal, the number of stations, and the time allocation for the overall OSCE program. A total of 77 dental interns and graduates gave an approving nod to the objectivity of an OSCE in assessing clinical knowledge. Similarly, 74 believed that increasing the number of stations is beneficial for a holistic evaluation. However, it reported the most significant concerns regarding the OSCE's ability for students to point out strengths and weaknesses in practical skills and the relevance of the written questions. Only 11 interns and graduates of dentistry expressed discontent with the time allocated per station. This study has demonstrated both the merits and challenges of OSCE in dental education. Although the OSCE is acknowledged to be an objective evaluation, there were concerns regarding stress, time-boundedness, and the inability of this evaluation to mimic everyday clinical situations fully.

**Keywords.** Clinical Competence, Education, Evaluation, Attitude, Dental Interns.

### Introduction

Dental interns and graduates undergo numerous test tools to measure and assess their clinical competence and knowledge; one of the ways is to use the objective structured clinical examination [1]. The outcome of those tools is crucial to reflect the performance of the dental interns and graduates and their accuracy to reflect their education [2].

The OSCE examination style was developed in the 70s, and it is widely accepted in all universities. 3 The exam structure represents standardized scenarios that mimic or represent the live clinical situations dental interns and graduates face in their future jobs [4]. In addition, OSCE encourages dental interns and graduates during outcome and allows them to practice their theoretical knowledge effectively along with their skills while offering a more subjective way of evaluation [5,6]. Compared to alternative assessments of practice systems, it provides unique advantages regarding assessor objectivity and assessment process parity for all dental interns and graduates [7].

OSCE is considered one of the most effective methods for evaluating and assisting dental interns and graduates. Still, on the other hand, it has its negative sides, such as stress-related. Anxiety students usually have high levels of stress in the OSCE exams because it's considered to be a controlled environment, and time is one of the main causes of stress [8,9]. Studies have shown that students perform better in the usual clinical environment while training and are relaxed. However, in OSCE exams, they feel stressed and out of control, performing less effectively. Moreover, studies claim that OSCE does not represent the clinical environment that dental interns and graduates face, especially in complex situations [8]. Different Studies have evaluated the attitude of dental interns and graduates towards OSCE exams to understand their weak points and strong points [10,11]. Some studies revealed that dental interns and graduates are happy with the OSCE. Because of the seriously high stress and time limitations and contrast, other dental interns and graduates gave positive feedback about the OSCE [12,13].

Sabouri et al. [14] studied the attitudes of specialized dentistry dental interns and Shahid Beheshti University of Medical Sciences graduates about OSCE. Their attitude towards OSCE was positive, although most students describe it as a stressful assessment method. In the meantime, OSCE is one of the methods used for assessment and dental exams. Whether a sports exam diploma or a graduate University exam, each student must undergo the experience of OSCE exams regardless of their importance. More investigations and assessments are needed to analyze this method's areas of improvement, change, and further

development. This study will assess the attitudes of dental interns and recent graduates at LIMU's Faculty of Dentistry regarding OSCE and generate suggestions for enhancing its competency.

## Methods

A cross-sectional descriptive study design was applied to evaluate intern and dental graduates' attitudes and perspectives regarding the OSCE under the total sample size of 180, and after evaluation, reduced to 130. The participants were conducted in a single academic institution and comprised of intern dentists graduating from clinical courses. The study aimed to investigate their various views regarding the OSCE, the nature of the OSCE, and the examination process associated with the OSCE to gather constructive feedback toward improving OSCE implementation in medical education.

The study was conducted using questionnaires, and participants were invited to complete two questionnaires separately. The inclusion criteria required dental interns and graduates to have some experience with OSCE as examinees or in OSCE-associated training events.

Two distinct instrumentations- the general nature of the OSCE and the specifics concerning the OSCE examination- were used as data collection instruments. Both were derived from an in-depth literature review and modified from a previously validated questionnaire by Hafezeqoran et al. (2015) [15]. The original questionnaire was designed to compare experiences and opinions concerning various aspects of OSCE among dental interns and graduates. The adaptation contextualized the questions for the present research. The first questionnaire consisted of 10 items on general attitudes toward the OSCE. The items were formatted as five-point Likert-type questions ranging from "strongly agree" to "strongly disagree." The items aimed to gauge general impressions of the OSCE from dental interns and graduates, including areas identified as advantages and disadvantages, while considering their confidence in the examination format. Sample items read, "I believe the OSCE provides a fair assessment of clinical skills" and "I feel prepared for the OSCE."

The second questionnaire, focusing on the nature of the OSCE examination, contained 12 items. These items also used a five-point Likert scale to evaluate dental interns and graduates' perceptions of the examination structure, including its perceived fairness, the stations' adequacy, and the instructions' clarity. Sample items included statements like "Clinical scenarios in practice have been well-represented in OSCE stations" and "Sufficient time has been allocated for each station." Also, open-ended questions were made available to dental interns and graduates, who were expected to provide qualitative comments about their self-experiences regarding the OSCE.

Using surveys on different online platforms, such as Google Forms, was an initiative to help provide easier access and maximize response rates. Participants were then given an entire week to complete the questionnaires, and reminders were sent halfway to encourage participation. Once filled out, the surveys submitted the responses to an automatically generated secure database for further analysis. The interns and graduates in dentistry were informed that the participation would be voluntary and their data would remain confidential.

Data collected were then analyzed using Google Sheets, in which statistical tools were used to quantify responses. Likert scale responses were converted into numerals, with the expression of "strongly agree" valued at 5 and "strongly disagree" given 1. Descriptive statistics, including frequencies, percentages, and mean scores, were calculated for each item to provide a general overview of dental interns' and graduates' attitudes and perceptions regarding the OSCE. The data was recorded, stored, and prepared for analysis. All the statistical analyses relevant to the data were performed by using SPSS version 28 for analysis purposes. Then, results are generated into frequency tables and bar charts built in Excel. A chi-square test was done to infer differences between the two categorical variables at predetermined significance levels. The results are summarized in the tables, where all tests regarded a p-value of < 0.05 as statistically significant.

## Results

The total number of participants in this study was 130, consisting of 73 females (56.2%) and 57 males (43.8%) (Table 1). Participants were divided into four age groups, with the majority (77 participants, 59.2%) aged between 25 and 26 years (Table 2).

**Table 1: The distribution of gender in this study.**

Gender	Frequency	Percent
Female	73	56.2%
Male	57	43.8%
Total	130	100%

**Table 2: The distribution of age in this study**

Age	Frequency	Percent
21-23	42	32.3%
24-26	77	59.2%
27-29	7	5.4%
30-32	4	3.1%
Total	130	100%

According to the survey results, most dental interns and graduates agreed on the objectivity of clinical knowledge assessment using OSCE, with 77 participants supporting this view. Regarding the number of stations, 74 dental interns and graduates agreed that more stations provide better opportunities for comprehensive evaluation. However, the highest level of disagreement was observed in how the OSCE highlights dental interns' and graduates' strengths and weaknesses in practical skills and the appropriateness of written questions used in the exam. Additionally, only 11 dental interns and graduates expressed dissatisfaction with the time allocated for each station (Table 3).

**Table 3: The answers to the survey in this study**

Variables	Completely disagree		Disagree		Abstention		Agree		Completely agree	
	N	%	N	%	N	%	N	%	N	%
I know about the objectives of clinical knowledge using the OSCE method	0	0.0%	1	0.8%	15	11.5%	77	59.2%	37	28.5%
OSCE is an appropriate way to evaluate the practical skills of dentistry	1	0.8%	2	1.5%	11	8.5%	69	53.1%	47	36.2%
OSCE is an appropriate way to enhance theoretical knowledge		0.0%	6	4.6%	14	10.8%	66	50.8%	44	33.8%
OSCE well evaluates the clinical diagnostic skills of dentistry	1	0.8%	7	5.4%	11	8.5%	61	46.9%	50	38.5%
OSCE may cover a wide range of skills and practical techniques of dentistry	1	0.8%	4	3.1%	20	15.4%	63	48.5%	42	32.3%
OSCE specifies my weak and strong points in practical skills		0.0%	10	7.7%	18	13.8%	61	46.9%	41	31.5%
Written questions in the OSCE are useful	3	2.3%	11	8.5%	15	11.5%	58	44.6%	43	33.1%
Providing feedback about students' weak and strong points at the end of the OSCE results in the improvement of their practical knowledge	1	0.8%	1	0.8%	15	11.5%	75	57.7%	38	29.2%
The examination differentiates skilled and unskilled students.		0.0%	5	3.8%	17	13.1%	68	52.3%	40	30.8%
Before OSCE, required descriptions were provided about the holding method of the exam and the stations	1	0.8%	5	3.8%	16	12.3%	59	45.4%	49	37.7%
There was the right time allocated to each station	1	0.8%	11	8.5%	17	13.1%	64	49.2%	37	28.5%
There were clear instructions for every station	1	0.8%	6	4.6%	14	10.8%	76	58.5%	33	25.4%
The stations were arranged logically.		0.0%	7	5.4%	21	16.2%	67	51.5%	35	26.9%
The more the number of stations. The more the evaluation opportunity of the students	2	1.5%	4	3.1%	10	7.7%	74	56.9%	40	30.8%
The fewer the number of stations. the more the allocated time, and the more effective the answers of the Student	3	2.3%	7	5.4%	20	15.4%	56	43.1%	44	33.8%
OSCE results in the improvement of my practical knowledge and skills		0.0%	4	3.1%	18	13.8%	70	53.8%	38	29.2%
OSCE increases students' stress	1	0.8%	9	6.9%	15	11.5%	58	44.6%	47	36.2%
Do you agree with the practical test as part of the OSCE?	1	0.8%	8	6.2%	16	12.3%	69	53.1%	36	27.7%
Post-exam feedback results in more knowledge		0.0%	5	3.8%	11	8.5%	75	57.7%	39	30.0%
I am interested in the OSCE examination as part of residency training	2	1.5%	5	3.8%	11	8.5%	76	58.5%	36	27.7%

## Discussion

Healthcare professionals globally are being aided by university OSEC exams for undergraduate and postgraduate dental interns and graduates. This exam is crucial in assessing their clinical competence and various health-related categories [15,16]. Clinical assessment is essential to aiding dental interns and graduate clinical competence in dentistry. Furthermore, OSEC can be incredibly beneficial in assisting dental interns and graduates with communication and problem-solving abilities [13]. Students' attitudes towards OSCE examinations were examined in this study; however, students' views about OSCE might have been influenced by anxiety and stress related to different aspects of OSCE examinations, such as the presence of examiners and the complexity of clinical cases.

In this research, many interns and dental graduates concurred that Objective Structured Clinical Examinations (OSCE) are stressful ( $n = 58$ ), and 44.6% agreed. Contrariwise, in research conducted by Shitu and Girma (2018), contrary findings were reported, where 64% of students had previously found OSCEs less stressful than other examinations [17]. In Chongloi et al.'s study, dental graduates and interns would prefer OSCE to be used as the only means to support their clinical performance since they believe that it has high marks, and, in this study, dental interns and graduates agreed that OSCE can be utilized to evaluate clinical diagnostic skills in dentistry [18].

In this study, a total number of ( $n=76$ ) 58.5% of dental interns and graduates confirmed that OSCE should have instruction for every station, unlike a survey done by Al Hashmi [19]. revealed that half of the dental interns and graduates in the study indicated they had not received adequate orientation to OSCE, and that has held a negative result in their performance in the exam; moreover, dental interns and graduates were asked in this study if the OSCE stations time was adequate; about ( $n=100$ ) 76% of them agreed that the time was enough, in contrast to other studies, where 60% of the dental interns and graduates revealed that the time allocated was insufficient. Many studies have also described this, indicating that dental graduates and interns' express dissatisfaction with the time given to finish each station [15,16].

There have been various studies conducted to determine how much stress dental graduates and interns experience regarding OSEC exams; in this study, most of the dental interns and graduates, 105, indicated high-stress levels; these were similar to a study conducted by Furlong et al. [20]. Yet, two other studies that measured the level of stress are those conducted by Sabouri et al. [14] and Jalili et al. [22]; the levels of stress among dental interns and graduates were 64.1% and 63.3%, respectively. Elevated stress factor levels induce stress-elevated levels in dental interns and graduates in OSCE exams, such as vague questions, long essay questions with short theme limits, complex clinical scenarios, and dental interns and graduates unfamiliar with the exam structure [23].

Most dental graduates and interns believed OSCE could examine various dental procedures and skills. A study by Sood also presents the benefits and shortcomings of the treatment technique. In the survey, OSCE is stated as an ideal method of testing clinical skills, and feedback from the exam enhances the theory and practice of dental science [24]. By observing task performance and enhancing interpretation validity, OSCE can be used to evaluate some clinical skills. Feedback can be provided immediately, with enhanced learning capacity, which can be for instructors and allow them to rectify their teaching-learning errors [25].

Conventional methods cannot assess clinical skills and competencies; appropriate tests, such as OSCEs, must assess cognitive (knowledge), attitude, and psychomotor (skill) domains [26,27]. This test can be a stepping stone for a more complete, efficient, and objective assessment of dental graduates and interns.

## Conclusion

Most dental graduates and interns support using OSCEs to objectively assess clinical skills and knowledge. However, stress, anxiety, and the artificial nature of timed, scripted stations may impact performance. This study's findings align with previous research on OSCE strengths and weaknesses. Limitations such as a small, diverse sample and variation in training, station design, and scoring reduce generalizability. While OSCEs are standardized, they may not fully reflect real-life clinical complexity, and both student anxiety and examiner subjectivity can affect results. Additionally, OSCEs are resource-intensive, requiring significant institutional investment.

## Conflicts of Interest

The authors declare no conflicts of interest.

## References

1. Elbilgahy AA, Eltaib FA, Mohamed RK. Implementation of objective structured clinical examination (OSCE): Perceiving nursing dental interns and graduate and teachers' attitude & satisfaction. *Am J Nurs*. 2020; 8:220–6. doi:10.12691/ajnr-8-2-11.
2. Smrekar M, Ledinski Fičko S, Hošnjak AM, Ilić B. Use of the objective structured clinical examination in undergraduate nursing education. *Croatian Nur's J*. 2017; 1:91–102. doi:10.24141/2/1/1/8.
3. Miller GE. The assessment of clinical skill competence performance. *Acad Med*. 1990;65: S63–7. doi:10.1097/00001888-199009000-00045.

4. Aronowitz T, Aronowitz S, Mardin-Small J, Kim B. Using objective structured clinical examination (OSCE) as education in advanced practice registered nursing education. *J Prof Nur's*. 2017; 33:119–25. doi: 10.1016/j.profnurs.2016.06.003.
5. Frantz JM, Rowe M, Hess A, Rhoda AJ, Sauls BL, Wegner I. Student and staff perceptions and experiences of the introduction of objective structured practica examinations: A pilot study. *Afr J Health Prof Educ*. 2013; 5:72–4. doi:10.7196/AJHPE.218.
6. Kowlowitz V, Hoole AJ, Sloane PD. Implementing the objective structured clinical examination in a traditional medical school: Academic medicine. *J Assoc Am Med Coll*. 1991/ ; 66:345–7. doi:10.1097/00001888-199106000-00008.
7. ; 66:345–7. doi:10.1097/00001888-199106000-00008.
8. Rushforth HE. Objective structured clinical examination (OSCE): Review literature and implications for nursing education. *Nurse Educ Today*. 2007;27(5):481–90. doi: 10.1016/j.nedt.2006.08.009.
9. Al-Ghareeb A, McKenna L, Cooper S. The influence of anxiety on student nurse performance in a simulated clinical setting: A mixed methods design. *Int J Nurs Stud*. 2019; 98:57–66. doi: 10.1016/j.ijnurstu.2019.06.006.
10. Nasir AA, Yusuf AS, Abdur-Rahman LO, Babalola OM, Adeyeye AA, Popoola AA, et al. Medical, dental interns and graduate' perception of objective structured clinical examination: Feedback for process improvement. *J Surg Educ*. 2014; 71:701–6. doi: 10.1016/j.jsurg.2014.02.010.
11. Qutishat MG, Leocadio M, Cayaban A. Extent of test anxiety among nursing dental interns and graduates in Oma and impact on academic performance. *J Health Sci Nurs*. 2018; 3:11–25.
12. Jahan F, Shaikh N, Norrish M, Siddqi N, Qasim R. Comparison of student's self-assessment to examiner's assessment in a formative observed structured clinical examination: A pilot study. *J Pak Med Inst*. 2012; 27:94–9.
13. Al Nazzawi AA. Dental inter s and graduates' perception of the objective structured clinical examination (OSCE): The Taibah University experience, Almadinah Almunawwarah, KSA. *J Taibah Univ Med Sci*. 2018; 13:64 9. Doi: 10.1016/j.jtumed.2017.09.002.
14. Sabouri A, Vahid Dastjerdi E, Mahdian M, Kharazifard MJ. Dental residents' perceptions of Objective Structured Clinical Examination (OSCE) as a clinical evaluation method. *J Dent Sch*. 2010;28(2):88–94.
15. Hafezeqoran A, Moslehifard E, Koodaryan R. Attitude of dental prostheses residents of Faculty of Dentistry of Tabriz University of Medical Sciences to objective structured clinical examination (OSCE). *Res Dev Med Educ*. 2015;4(2):141-146. doi:10.15171/rdme.2015.025.
16. Association of Colleges of Nursing. The Essentials of Baccalaureate Education for Professional Nursing Practice [Internet] Available from: [http://www.aacnursing.org/Nursing-Education-Programs/Baccalaurea e-Education](http://www.aacnursing.org/Nursing-Education-Programs/Baccalaurea-e-Education). Accessed: Apr 2021.
17. Al-Zeftawy AM, Khaton SE. Student evaluation of an OSCE in community health nursing clinical course at faculty of nursing. Tanta University. *IOSR J Nurs Health Sci*. 2016; 5:68–76. doi:10.9790/1959-0504036876.
18. Al Nazzawi AA. Dental inter s and graduates' perception of the objective structured clinical examination (OSCE): Th Taibah University experience, Almadinah Almunawwarah, KSA. *J Taibah Univ Med Sci*. 2018; 13:64 9. Doi: 10.1016/j.jtumed.2017.09.002.
19. Shitu B, Girma T. Objective structured clinical examination (OSCE): Examinee's perception at Department of Pediatrics and Child Health, Jimma University. *Ethiop J Health Sci*. 2008; 18:47–52.
20. Al Hashmi I. Nursing den al interns and graduate's perception and attitude toward objective structured clinical examination (OSCE) in Oman. *Sultan Qaboos Univ Med J*. 2021.
21. Furlong E, Fox P, Lavin M, Collins R. Oncology nursing dental interns and graduate' views of a modified OSCE. *Eur J Oncol Nurs*. 2005;9(4):351–9. doi: 10.1016/j.ejon.2005.03.001.
22. Chongloi N, Thomas P, Ara M, Deepak KK. Attitudes of undergraduate nursing dental interns and graduate toward objective structure practical examination: An exploratory study. *Int J Nurs Sci*. 2017; 4:68–72. doi: 10.1016/j.ijnss.2016.12.003.
23. Jalili Z, Noohi E, Ahmad Pour B. Investigation of medical staggers' and interns' satisfaction about OSCE as a clinical skill evaluation method in Kerman University of Medical Sciences. *J Strides De Med Educ*. 2005;1(2):18–20. [In Persian].
24. Brosnan M, Evans W, Brosnan E, Brown G. Implementing objective structured clinical skills evaluation (OSCE in nurse registration programs in a center in Ireland: A utilization-focused evaluation. *Nurse Educ Today*. 2006;26(2):115–22. doi: 10.1016/j.nedt.2005.08.003.
25. Sood R, Si gh T. Assessment in Medical Education: Evolving perspectives and contemporary trends. *Natl Med J India*. 2012;25(6):357–64.
26. Garoushi S. Dental interns and graduates' perception and attitude towards their first exit objective structured clinical examination. *Dent J*. 2014; 4:1–5. doi: 10.4172/2161-1122.1000243.
27. Aung KT, Zakaria AN. Nursing dental interns and graduates' Perceptions on objective structured clinical Examination (OSCE). *Pererception*. 2016; 4:220–3. doi:10.4103/2321-7006.306243.