



Students' perceptions and attitudes towards Objective Structured Clinical Examination (OSCE) in the College of Medicine, KSAU-HS, King Fahad Medical City, Riyadh, Saudi Arabia

Authors

Abdalla A Saeed*, Waleed M Al Suwayh**, Amal S. Alomri**

*Associate Professor, Consultant, Dept. Of Community Medicine, OSCE Coordinator, Faculty of Medicine, King Fahad Medical City, POBox 366325 Riyadh 11393, Saudi Arabia

Email: Saeed.abdalla@gmail.com, aasaed@kfmc.med.sa 00966502469819

**Medical Students, College of Medicine, King Saud Bin Abdulaziz University for Health Science, Riyadh , Saudi Arabia

Email: wal_112@hotmail.com, amalsa990@gmail.com

Corresponding Author

Abdalla A Saeed*

Email: Saeed.abdalla@gmail.com, aasaed@kfmc.med.sa, 00966502469819

ABSTRACT

Background: *The Objective Structured Clinical Examination (OSCE) requires that examinees rotate through a series of seven OSCE stations and perform a variety of clinical tasks during a seven minutes period for all blocks.*

Aim: *This study was conducted to explore the perceptions of the students regarding OSCE Faculty of Medicine, King Saud Bin Abdulaziz University for Health Sciences (KSAU-HS) King Fahad Medical City.*

Methods: *In this cross-sectional study, a validated and pretested questionnaire was distributed to all 78 medical students. Questions included students' perceptions and attitudes concerning pre-exam orientation regarding OSCE, exam content, the incorporation of knowledge, skills, stress encountered, duration suitability and validity of OSCE stations*

Results: *The majority of all 78 students were males, enrolled in hematology block and living with their parents. More than 94% rated the OSCE as stressful but 56% rated it as less stressful than other forms of examinations. In general the majority of the students rated favorably the OSCE as they agree that OSCE is fair, well administered, structured and sequenced, allowing students to compensate in some areas and minimized failing, that they were fully aware of the nature of the exam, that the tasks reflected those taught and they were fair and that requirements for each station were provided and that instructions and OSCE scores are standardized. Females were significantly more agreeing than males with the structure, conduction of the exam which minimized their chance of failing and provided opportunities for learning and is a true measure of the essential clinical skills*

Conclusion: *Students view OSCE as a fair and standardized way to assess clinical competencies and females were more satisfied than males.*

Keywords: *Medical students, perceptions, OSCE, Riyadh.*

Introduction

The assessment of clinical competence of medical students is fundamental to ensure that graduates are able to exercise their duties in patient care properly and safely. With the increasing trend of placing more emphasis on competency-based and problem-based instruction and assessment in medical curricula the Objective Structured Clinical Examination (OSCE) introduced by Harden et al ¹ is by almost all medical colleges including our college. The OSCE is objective because examiners use a standardized checklist of expected clinical behaviors for evaluating students. It is structured, or planned, so that every student sees the same problems and is asked to perform the same tasks. The OSCE is said to be clinical because the tasks are. Each OSCE station usually tests a different component of clinical competence, such as taking a history, conducting a physical examination, ordering diagnostic tests, making a diagnosis, planning treatment, or communicating with patients. Traditional methods of assessing clinical competence have proven to be inadequate because they lack direct observation of students. On the other hand OSCE has been proven and rated as the most reliable and valid tool for assessing clinical competency and has been increasingly used to provide formative and summative assessment in various medical disciplines worldwide, including non-clinical disciplines ^{2,3}. Despite a long tradition of research relating to OSCE, there have been relatively fewer studies about the perceptions of the students about OSCE as an assessment tool and its educational impact. No similar study was performed among medical students in King Fahad Medical City. This study is conceived to explore students' perception about the acceptability of OSCE process and to provide feedback to be used to improve the assessment technique. The aim of the study is to obtain the opinion of medical students about various aspects of OSCE as students' feedback is regarded as a key indicator for successful implementation of the OSCE and also provides feedback for improvement.

Objectives

To assess students' overall perception, acceptance and satisfaction with the objective structured clinical examination (OSCE), and to explore its strengths and weaknesses through feedback among Medical students in Faculty of Medicine, KSAU-HS, King Fahad Medical City.

Subjects and Methods

Study Setting

The Faculty of Medicine, KSAU-HS, King Fahad Medical City is adopting a hybrid curriculum offering Problem Based Learning as one of the main educational strategies along with lectures, clinical sessions and other teaching and learning strategies. The clinical Diagnostic Skills part of the curriculum is assessed by OSCE in ALL Blocks. The OSCE for all blocks consists of seven OSCE stations and each station is for duration of seven minutes. In All OSCE stations the candidates are assessed by Examiners. Almost all stations have Standardized patients. The OSCE station consists of a Title page, Candidates instructions including a brief scenario and a Specific Task to be performed by the student, Examiners instruction and Examiners Marking schedule, and SP instructions. Each station usually tests a different component of clinical competence, such as taking a history, conducting a physical examination, ordering diagnostic tests, making a diagnosis, planning treatment, or communicating with patients. The student has to attempt all stations. The OSCE carries 15% and 30% weight of the Final Block grade in Basic and Clinical phases respectively.

Study Design

A quantitative, cross-sectional, analytical research design was used.

Study population

The population consisted of all those student of batches 9, 10 and 11 enrolling in the Second Semester of the Academic Year 2014/2015. So no sampling was done as the total population was included in the study. Only males were enrolled in Batches 9 and 10 while both males and females were enrolled in batch 11. All students have a Bachelor Degree in an Applied Health, Dental, Pharmacy or Science.

Data collection tool

OSCE evaluation questionnaire was used as an instrument for collecting the study data. It is a modified version of the tool which was used for data collection Pierre et al⁴. The modified tool consists of 25 items divided into 3 sections. First section includes 13 statements concerning different attributes of OSCE in general, rated in a four points likert scale: fully agree, agree, neutral, disagree. This section included items such as the fairness of the exam, area of knowledge covered, time of each station and the organization and administration of OSCE. The second section with 8 items addressing the nature of the OSCE exam, time allocated, instructions, tasks to be formed and sequence of OSCE stations rated in 3 points likert scale concerning level of agreement with statement: Fully agree, neutral, fully disagree. The last section contains 4 items dealing with validity and reliability of OSCE in general rated in 3 points likert scale concerning level of agreement with statements: Fully agree, neutral, fully disagree

Data management and statistical analysis

Data was coded, cleaned, fed and analyzed using SPSS version 17...Descriptive analyses were conducted to determine the frequency distributions of the study variables. Association between groups was tested using the χ^2 . P value of less than 0.05 was selected level significance Participation was on a voluntary basis and students were assured that those who declined involvement in the survey would not be penalised. Results will be used only for the stated research objectives. Ethical approval was received from Institutional Review Board (IRB) King Fahad Medical city. Data collection was supervised by one male and one female student who are part of the research team.

Results

All 78 students completed questionnaires about the previous OSCE they attempted. Table 1 profiles the background characteristics of the subjects. The majority are males, enrolled in hematology block and living with their parents. Table 2 shows the results of the subject's agreement with different statements in evaluation of the OSCE. The gender differences presented are only for batch 11 because both males and females are enrolled. In the other batches only males are enrolled. About 85% rated the OSCE as stressful, 66% as intimidating while but about 57% rated it as less stressful than other forms of examinations. In general the majority of the students rated favorably the OSCE as 70-84% agree that OSCE is fair, well administered, structured and sequenced, allowing students to compensate in some areas and minimized failing. About 5-20% rated all items poorly as they disagreed with all statements and 8-25% were neutral with no comments on the items studied. Females were significantly more agreeing than males with the structure, conduction of the exam which minimized their chance of failing. Table 3 depicts the subject's perceptions on the quality of OSCE. About 10-27% of the students agree to a great extent that they were fully aware of the nature of the exam, that the tasks reflected those taught, that requirements for each station were provided and that instructions were clear and unambiguous. About a quarter of the students were not at all agreeing but over half were agreeing to some extents with all attributes studied. Females were significantly more agreeing than males that the exam instructions were clear and the exam provided opportunities for learning. Table 4 profiles perceptions of the students concerning validity and reliability of

the OSCE. More than 10 to 35% % agree to a great extent that OSCE scores are standardized, provide a true measure of the essential clinical skills. OSCEs are not affected by personality, gender and ethnicity with females acknowledging that significantly more than males. About 18 – 36% of the students were not in agreement at all with items related to the validity of the OSCE while about half or more of them were agreeing to some extent.

Table 1 Characteristics of the study subjects

Characteristics	Number	Percentage
Gender		
Males	56	71.8
Females	22	28.2
Age (years)		
20 – 25	29	37.2
26	21	29.9
27+	28	35.9
Batch		
9	13	16.7
10	30	38.5
11	35	44.9
Block		
Surgery	13	16.7
Hematology	36	46.2
Gastrointestinal	29	37.2
Home town		
Riyadh	40	51.3
Others	38	48.7
Living with		
Parents	31	39.7
Other family members	17	21.8
Friends	11	14.1
Alone	13	16.7
Others	6	7.7

Table 2 Subjects perceptions of the quality of OSCE performance in general n (%)

Item	Fully Agree	Agree	No comment	Disagree	P value Gender difference
Exam was fair	21(26.9)	35(44.9)	13(16.7)	9(11.5)	NS*
Wide knowledge area covered	17(21.8)	47(60.3)	9(11.5)	5(6.4)	NS
Needed more time at stations	30(38.5)	27(34.6)	5(6.4)	16(20.5)	NS
Exams well administered	19(24.4)	37(47.4)	14(17.9)	8(10.3)	0.032
Exams very stressful	31(39.7)	35(44.9)	6(7.7)	6(7.7)	0.011
Exams well structured & sequenced	21(26.9)	34(43.6)	15(19.2)	8(10.3)	0.021
Exam minimized chance of failing	22(28.2)	33(42.3)	17(21.8)	6(7.7)	NS
OSCE less stressful than other exams	16(20.5)	27(34.6)	15(19.2)	20(25.7)	NS
Allowed student to compensate in some areas	24(30.8)	32(41.0)	18(23.1)	4(5.1)	NS
Highlighted areas of weakness	18(23.1)	33(42.3)	19(24.3)	8(10.3)	NS
Exam intimidating	17(21.8)	34(43.6)	19(24.4)	8(10.3)	NS
Student aware of level of information needed	11(14.1)	32(41.5)	19(24.4)	16(20.5)	0.047
Wide range of clinical skills covered	16(20.5)	40(51.3)	12(15.4)	10(12.8)	NS

NS* = Not significant

Table 3 Subjects evaluation of last OSCE attempted n (%)

Item	Not at all	To some extent	To great extent	P value	Gender difference
Fully aware of nature of exam	15(19.2)	55(70.5)	8(10.3)	NS*	
Tasks reflected those taught	16(20.5)	52(66.7)	10(12.8)	NS	
Time at each station was adequate	19(24.7)	40(50.6)	19(24.7)	NS	
Requirements for each station are provided	18(23.1)	39(50.0)	21(26.9)	NS	
Instructions were clear and unambiguous	22(28.2)	37(47.4)	19(24.4)	0.005	
Tasks asked to perform were fair	14(17.9)	51(65.4)	13(16.7)	NS	
Sequence of stations appropriate	13(16.7)	46(58.9)	19(24.4)	NS	
Exam provided opportunities to learn	16(20.5)	44(56.4)	18(23.1)	0.036	

NS* = Not significant

Table 4 Students perception of Validity of OSCE

Item	Not at all	To some extent	To great extent	P value	Gender difference
OSCE exam scores provide true measure of essential clinical skills	22(28.2)	40(51.3)	16(20.5)	NS*	
OSCE scores are standardized	20(35.6)	50(64.1)	8(10.3)	NS	
OSCE is a useful experience	14(17.9)	37(47.4)	27(34.6)	NS	
Personality, ethnicity and gender will not affect OSCE scores	22(28.2)	44(56.4)	12(15.4)	0.030	

NS* = Not significant

Discussion

OSCE has become the gold standard tool for evaluating the clinical competency of medical and other health professionals in many institutions worldwide. Overall this study found that students generally perceive OSCE as a positive experience in agreement with many national and international studies⁵⁻¹². This was demonstrated by the positive responses regarding standardization, fairness, practicality and usefulness of the exam. In this study although more than 90% of the students found OSCE stressful and 66% found it intimidating but more than half of the students think it is less stressful than other forms of examinations. This is in agreement with local and international studies reporting levels of stress ranging from half to 95%⁵⁻¹³. Studies found that although stressful, OSCE was highly acceptable to students, was better received than many other examination types, tested clinical skills, and allowed students to identify weaknesses^{11,12}. Inadequate prior guidelines, inadequate time for stations, newness of the assessment format and vague instructions were the main causes for stress in some studies⁶. Adequate preparation of OSCE by students was found to be a method to overcome anxiety and fear of examination¹³. Students in this study tend to think that OSCE evaluates a wide variety of clinical skills and they perceived exam scores to be truly reflective of competence in clinical skills in agreements with comparative studies in other communities.^{9,10,11} Only a quarter of students in this study think that time allotted for stations is not at all adequate which is a favorable finding compared to studies reporting that 46 -80% of students felt that the allocated time per station was inadequate in other studies^{11,12,14}. Other studies, however, found that 70 -100% of students felt that the time allocated to each station was adequate^{5,15}. Differences may be due to the differences in type of OSCE, block, students levels and the differences to the times allocated for the OSCE stations. More than half of the students in this study were neutral concerning the effect personality, ethnicity, and gender on OSCE scores while only about 15% think that they affect OSCE scoring to a great extent. In a study in Malaysia about half of the students raised concerns that personality, ethnicity, and/or gender were potential

sources of bias that could affect their scores¹³. Females showed more favorable rating of the OSCE compared to males in this study. Females tend to be more accommodative in the conservative community of KSA. The participants' demographics such as sex, age and marital status had no effect on their level of satisfaction with OSCE in agreement with findings in other countries⁸. As can be seen from in this study the perceptions and satisfaction of medical students with OSCE have been generally positive in agreement with most national and international studies⁵⁻¹⁵. This is also true for other health professions such as dental, pharmacy and nursing students^{16, 17, 18}.

Conclusion

In spite of being stressful, OSCE is considered as fair and better method of examination by students as it covers wide range of skills and improves the clinical knowledge. This wide acceptance of OSCE by students could increase the satisfaction of all stakeholders involved in medical students' assessment.

Recommendations

OSCE is an effective and valid assessment method for assessing students' clinical competencies and it should be used.

Effective preparation and proper orientation of students with OSCE to reduce stress, anxiety and improve their experience.

Competing interests

The authors declare that they have no competing interests.

Conflicts of interest:

The authors declare that there are no conflicts of interest.

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Authors' contributions

AS conceptualized the study; developed the proposal, Co-ordinated the conduct of the project, supervised and completed initial Data entry and analysis, and wrote the report.

WA participated in the design of the study, coordinated the conduct of the project, supervised data collection, and assisted in writing the report.

AA participated in the design of the study, coordinated the conduct of the project, supervised data collection, and assisted in writing the report.

All authors read and approved the final manuscript.

References

1. Harden RM, Stevenson M, Downy WW, and Wilson GM. Assessment of clinical competence using objective structured examination. *Br. Med. J.* 1975; 1(5955): 447-51.
2. Carracci C, Englander R: The objective structured clinical examination, a step in the direction of competency-based evaluation. *Arch PodiatryAdolescent Med* 2000, 154:736-741. PubMed Abstract | Publisher Full Text Russell B Pierre^{1**†}, Andrea Wierenga^{2†}, Michelle Barton¹, J Michael Branday² and Celia DC Christie¹ *BMC Medical Education* 2004, 4:22 doi:10.1186/1472-6920-4-22
3. Patricio MF, Julia M, Fareleira F, Carneiro AV. Is the OSCE a feasible tool to assess competencies in undergraduate
4. Pierre RB, Wierenga A, Barton M, Branday JM, Christie CD. Student evaluation of an OSCE in paediatrics at the University of the West Indies, Jamaica. *BMC Medical Education.* 2004; 4:22. doi: 10.1186/1472-6920-4-22.

5. Nasir AA¹, Yusuf AS², Abdur-Rahman LO², Babalola OM², Adeyeye AA², Popoola AA², Adeniran JO Medical students' perception of objective structured clinical examination: a feedback for process improvement J Surg Educ. 2014 Sep-Oct;71(5):701-6. doi: 10.1016/j.jsurg.2014.02.010.
6. Siddiqui FG . Final year MBBS students' perception for observed structured clinical examination. J Coll Physicians Surg Pak. 2013 Jan; 23(1):20-4. doi: 01.2013/JCPSP.2024.
7. Pierre RB¹, Wierenga A, Barton M, Branday JM, Christie CD Student evaluation of an OSCE in paediatrics at the University of the West Indies, Jamaica. BMC Med Educ. 2004 Oct 16; 4:22.
8. Khorashad A, Salari S, Baharvahdat H, Hejazi S, Lari S, Salari M, Mazloom M, Lari S.. The Assessment of Undergraduate Medical Students' Satisfaction Levels with the Objective Structured Clinical Examination. Iran Red Crescent Med J. 2014 August; 16(8): e13088
9. Raheel H¹, Naeem N². Experience with the objective structured examination as a tool for students' assessment in the Department of Community Medicine and Primary Health Care in a university[corrected] in Western Saudi Arabia. Saudi Med J. 2002 Feb;23(2):151-5 use of objective structured
10. Shawkly S. Experience with the objective structured examination as a tool for students' assessment in the Department of Community Medicine and Primary Care in a university in Western Saudi Arabia. Saudi Med J 2002; 23(2): 151-155.
11. Jabeen N, Ehsan H , Mahmood M. Students' Perception Regarding Objective Structured Clinical Examination (OSCE) Journal of Islamabad Medical & Dental College (JIMDC); 2015;4(2):85-87
12. Elfaki O , Al-Humayed S.Medical Students' Perception of OSCE at the Department of Internal Medicine, College of Medicine, King Khalid University, Abha, KSA.Journal of the College of Physicians and Surgeons Pakistan 2016, Vol. 26 (2): 158-159
13. Fidment S. The objective structured clinical exam (OSCE): A qualitative study exploring the healthcare students' experience. Students Engagement and Experience J 2012; 1(1) available online <http://dx.doi.org/10.7190/seej.v1i1.37>
14. Beckett N, Hellenberg D, Namane M. A qualitative evaluation of University of Cape Town medical students' feedback of the Objective Structured Clinical Examination Mefanet J 2014; 2(1): 20–25
15. Khairy GA. Feasibility and acceptability of Objective Structured Clinical Examination (OSCE) for a large number of candidates: experience at a university hospital. J Family Community Med. 2004; 11(2):75–78.[PMC free article] [PubMed]
16. Awaisu A, Mohamed MH, Al-Efan QA. Perception of pharmacy students in Malaysia on the use of objective structured clinical examinations to evaluate competence. Am J Pharm Educ. 2007 Dec 15;71(6):118
17. Hammad M¹, Oweis Y, Taha S, Hattar S, Madarati A, Kadim F Students' opinions and attitudes after performing a dental OSCE for the first time: a Jordanian experience. J Dent Educ. 2013 Jan; 77(1):99-104.
18. Abeer Eswi, Amany S. Badawy, Halalia Shaliabe. OSCE in Maternity and Community Health Nursing: Saudi Nursing Student's Perspective. American Journal of Research Communication, 2013, 1(3): 143-162} www.usa-journals.com, ISSN: 2325-4076