Original article

Perceptions of faculty and residents to change in the assessment system by using Objective Structured Clinical Examination in psychiatry

Neena S Sawant

Department of Psychiatry, Seth GSMC & KEM Hospital,Parel, Mumbai-400012 Corresponding author : Neena S Sawant

Abstract

Introduction: Today there is a need for consistency and equity in the examination pattern so as to have an objective assessment. However in India still the traditional evaluation exam in all disciplines is followed. A new evaluation tool like objective structured clinical examination (OSCE) allows examinees to be observed while performing in different clinical situations using standardized patients and make it an improvement over traditional examinations.

Objective: To do a pilot project on developing OSCE formats in one of the psychiatric disorders ie schizophrenia and to understand perceptions of the students and faculty about the assessment method.

Methods: An orientation to OSCE was given to faculty and students. 5 faculty members from the department of psychiatry reviewed the curriculum for schizophrenia and designed the 10 OSCE stations with the checklists. Training was given to the paramedical faculty members for acting as simulated patients and medical faculty as observers. All the 10 residents were enrolled in the mock exam by the traditional (long case) as well as the OSCE method. Pre-validated questionnaires were used to assess the perceptions of the faculty and residents on the current assessment method and post traditional and OSCE examinations.

Results: All faculty and students wanted a change in the current evaluation method as it was more subjective and unstructured. Traditional long case could adequately assess knowledge domain but not skills and attitudes. OSCE could assess all domains and was considered better than the traditional method.

Conclusions: This study tries to understand the perceptions of the faculty and students to the existing assessment methods in assessing clinical skills of psychiatry post graduate students and the need to make them more objective and structured so as to improve the knowledge, attitudes and skills of the resident doctors.

Key words: Long case examination, OSCE, Evaluation methods, Psychiatry

Introduction

Traditionally the qualifying university examinations in psychiatry in Maharashtra state have included a long case where the candidate interviews the patient for one hour and then presents to 4 examiners after which he is then asked to demonstrate aspects of mental status & questioned on various aspects of clinical diagnosis and management of the patient over the next 20 minutes. There are also 2 short cases where the examination is done in front of the examiners for 10 minutes and a 20 minutes viva voce. The patients are real and there often are variations in the complexity of the case with some students getting a straight forward case while others get complicated histories and hence the exams never seem fair. Also the process of the examination is quite unstructured with the examiners asking questions only on a particular aspect especially if the student is stuck. Hence sometimes the time limit is not strictly followed and the examination process becomes tiring for the examiners and examinees alike.

Psychiatry examinations also have a scope for disagreement-on every aspect including diagnosis, etiology, treatment and the very nature of psychiatric disorders which therefore a skill in formulating the diagnosis and is therefore given great importance in the qualifying examinations in psychiatry in many countries. Leichner et al demonstrated statistically that the "luck of the draw" in selection of the examiner and the patient played a significant role in the outcome of an oral examination particularly for borderline candidates. ¹⁻² Today objective structured clinical examination (OSCE) is considered as a gold standard in exams replacing the traditional long case examinations. ³ A new evaluation tool that allows examinees to be observed while performing in different clinical situations using standardized patients makes OSCE a major improvement over traditional examinations. ^{4, 5} This combination of multiple observations and standardization of content and difficulty make the OSCE a very popular evaluation tool. Further research has demonstrated that OSCEs have excellent psychometric properties. OSCEs have become indispensable for the assessment of medical students, clinical clerks, interns, and residents and of candidates for licensure and certification. It has also been used widely in psychiatry qualifying examinations ^{6, 7} and for psychiatry clinical clerkship. ⁸

However, in India, OSCE has still to make its mark in psychiatry and the assessment methods have to be standardized in the present scenario. With these issues in mind, it was decided to do a pilot project on developing OSCE formats for focused history taking, communication skills and mental status examination in one of the psychiatric disorders viz. schizophrenia, to compare the performance of post graduate students across OSCE stations with that of traditional long case examination and to understand perceptions of the students and faculty about both the assessment methods.

Method

This pilot study was conducted in 10 psychiatry residents doing their residency program in the department of psychiatry of a general municipal hospital as a part of the Foundation for Advancement of International Medical Education and Research [FAIMER] educational project. The residents and faculty were recruited only after institutional ethics committee approval and valid written informed consent. This hospital is also one of the regional FAIMER institutes for training teachers all over India. The faculty in the department of psychiatry included 1 Professor, 2 Associate Professors and 2 Assistant Professors who have been teaching postgraduates for minimum of 8 years. All the faculty and residents of the department of psychiatry were given an introduction and overview of OSCE by the first investigator which included the format of the examination, OSCE stations, standardized patients, observers, checklists for assessment and their queries were addressed. Questionnaires with closed ended questions rated on a 3 point likert scale and some open ended questions were prepared to gauge opinions and recommendations about the the traditional and OSCE assessment methods. All the questionnaires were validated by the FAIMER faculty of the institute.

The expert committee comprising of 5 faculty members from the department of psychiatry initially reviewed the post graduate curriculum for schizophrenia as per the "must know", "nice to know" and "desirable to know" areas as given in the Maharashtra University of Health Sciences (MUHS) & Medical Council of India (MCI) guidelines.

Indian Journal of Basic and Applied Medical Research; September 2018: Vol.-7, Issue- 4, P. 65 - 76

Designing OSCE stations

10 OSCE stations to evaluate the various skills (attitudinal, psychomotor and communication) and knowledge areas in the illness "Schizophrenia" as per the curriculum were designed by the expert committee. The various stations designed to assess the various skills with the time limit were as follows: Delusions and thought disorder (10min), Diagnosis & Management of the illness Schizophrenia: Communication with the patient & relative (15 min), Discussing ECT as a treatment option (10 min), Extra pyramidal Side-effects : physical examination (10 min), First Rank Symptoms (10 min), Hallucinations(10min), Insight and attitude to treatment (10 min), Management of Acute Dystonia (15 min), Memory & Orientation(15min) and Prognosis in Schizophrenia (10min).

Each station had instructions written to the teacher, actor, candidate and the time limit (10 to 15 min).Each station had a checklist specific for that station with the scoring in grades and checklist items specified which was validated by the faculty in the department. Training of faculty for being an observer was carried out. Simulated patients were used for the OSCE examination and they included psychologists, social workers, nurse and ward boys in the department of psychiatry who were trained over 2 weeks to play the role as per the script provided and a rehearsal of the same was taken before the mock exams. As there were no funds available or any other resources for carrying out the project, no actors could be hired. The OSCE examination checklist made for the stations included station specific points and general performance points which would be assessed by the examiner by allotting points while observing the student.

A mock exam was then conducted for the residents (n=10) on the conventional examination style and OSCE formats on the same psychiatric diagnosis by the trained faculty of the department over 2 days each. All the residents were given a long case of schizophrenia and were assessed in the traditional examination style by 3 examiners. Each candidate was given 1 hour for history taking and 20 minutes for presentation as per the university rules. All the residents were then assessed by OSCE over the next 2 days. After both the exams the faculty and residents filled the pre-validated feedback questionnaire which gauged their comfort level, preparedness for the exam, and their perceptions on which evaluation method would they prefer. The results of the residents on their performance at the various stations by OSCE method and their marks as per the traditional method were then put up on the notice board for feedback. Data was analyzed with the help of frequency distribution.

Results:

Perceptions of faculty and resident doctors on current evaluation system

When the faculty and residents were questioned about the efficacy of the current university practical examination in testing the various domains then 50-60% of them felt that it tested the knowledge domain adequately but not the skills domain and 80% of them felt that it did not test attitude domain. Nearly all of them felt the assessment to be more subjective and 50% of them were divided in their opinions of the assessment being structured and /or unstructured. But all wanted the current evaluation method to change to being more objective and structured.60-70% of both faculty and residents felt that an assessment method like OSCE would definitely help to improve the knowledge in the students and all of them felt that improvement would be seen in all the domains of learning. All except one student definitely wanted a change in the current evaluation system though none had ever given OSCE. Table 1

Perceptions of faculty and resident doctors after traditional examination

Information about the traditional long case examination was given to all. Only 3 faculty members were MUHS examiners and hence trained as compared to others who were teaching residents on a daily basis. 80% of the residents did not receive any formal training on long case presentation but learnt it as a part of their daily clinical work. More than 60% of faculty and residents were happy with the exam set up and were comfortable during the evaluation process. 60% faculty felt that the traditional long case examination tested the knowledge domain but 80% felt that attitudes and skills were not tested at all as compared to 50% residents who were divided in their opinion. All found the evaluation method to be subjective and unstructured but 40% faculty and 50% residents felt that it could benefit residents in their learning.80% of faculty and 50% of residents felt that it could improve the knowledge domain more effectively as compared to the skills and attitudes domain. None of the faculty had given a feedback on the long case to the students and no resident had ever received it. Only the practical marks were displayed and there was no other information on the resident's performance provided. 60% faculty and 50% residents felt that there would be no change in attitudes and skills domains. Surprisingly only 1 faculty member and 80% residents felt that the long case should be removed from evaluation and most felt that OSCE was better than the traditional long case. All the students got marks out of 100 and had passed the traditional long case exam. Table 2

Perceptions of faculty and resident doctors after OSCE

Both the faculty and residents expressed that they had been informed about OSCE, were trained with their queries answered. All the residents and 80% faculty were happy with the exam set up. Though all residents were comfortable at the stations, only 60 % faculty expressed comfort. 30% residents experienced difficulty with the simulated patients though none of the faculty did so. All agreed the method to be objective and structured and felt that it would help the students. 60% of faculty and residents felt that OSCE assessed knowledge domain. Though all faculty members and residents agreed that OSCE assessed skill domains, only 70% residents agreed that it tested the attitude domain as compared to all faculty members. All had received the feedback on OSCE which was given by the observer ratings at each station and the various aspects on which it was graded. Receiving the feedback gave information not only about the knowledge domain but also the skills and attitude domains. Despite this only 40% faculty wanted a change to OSCE as compared to 80% residents and though most expressed OSCE to be better than traditional examination, 30-40% of them were still not sure. The residents had performed very well on the various stations and some of them had scored more than 75% marks at some stations. The performance on OSCE was found to be much better than the traditional exam and also gave a better understanding of the grades/marks as compared to the long case. Table 3

Indian Journal of Basic and Applied Medical Research; September 2018: Vol.-7, Issue- 4, P. 65 - 76

Perceptions on current	Faculty (n=5)		Residents (n=10)			
evaluation system	ystem					
	Yes	No	Not	Yes	No	Not
			sure			sure
Current evaluation system in psyc	hiatry is ad	lequate in t	testing:			
Knowledge	3(60%)	2 (40%)	0	5 (50%)	4(40%)	1(10%)
Attitudes	1 (20%)	4 (80%)	0	1(10%)	8(80%)	1(10%)
Skill (Communication, physical	2(40%)	3 (60%)	0	3(30%)	5(50%)	2(20%)
examination etc)						
Current evaluation system in psyc	hiatry is					
Subjective	5(100%)	0	0	9 (90%)	1(10%)	0
Objective	0	5(100%)	0	0	10(100%)	0
Unstructured	3(60%)	1(20%)	1(20%)	6 (60%)	3 (30%)	1(10%)
Structured	1(20%)	3(60%)	1(20%)	4 (40%)	5 (50%)	1(10%)
Current evaluation system in psychiatry is should change from:						
Subjective to Objective	5(100%)	0	0	10(100%)	0	0
Unstructured to structured	5(100%)	0	0	10(100%)	0	0
Would OSCE benefit students?	3(60%)	0	2 (40%)	7(70%)	0	3(30%)
OSCE would help to improve :		I				
Knowledge	5(100%)	0	0	7(70%)	0	3(30%)
Attitudes	5(100%)	0	0	10(100%)	0	0
Skill (Communication, physical	5 100%)	0	0	10(100%)	0	0
examination etc)						
Have you undertaken an OSCE	0	5(100%)	0	0	10(100%)	0
before?						
Is change in the current	5(100%)	0	0	9 (90%)	0	1(10%)
evaluation system needed?						

Table 1: Perceptions of Faculty and resident doctors on current evaluation system

Perceptions after traditional examination	Faculty (n=5)		Residents (n=10)			
	Yes	No	Not	Yes	No	Not
			sure			sure
Information about traditional	5(100%)	0	0	10(100%)	0	0
long case exam given						
Training about traditional long	2(40%)	2(40%)	1(20%)	8(80%)	2(20%)	0
case exam given						
Satisfaction with the exam setup	3(60%)	1(20%)	1(20%)	5(50%)	5(50%)	0
Comfort when giving/taking	3(60%)	1(20%)	1(20%)	5(50%)	5(50%)	0
exam						
Traditional long case exam is	0	5(100%)	0	0	10(100%)	0
adequate in testing						
Knowledge	3(60%)	2(40%)	0	5(50%)	5(50%)	0
Attitudes	1(20%)	4(80%)	0	3 (30%)	5 (50%)	2(20%)
Skill (Communication, physical	1(20%)	4(80%)	0	3 (30%)	5 (50%)	2(20%)
examination etc)						
Traditional long case exam is:						
Subjective	5(100%)	0	0	9 (90%)	0	1(10%)
Objective	0	5(100%)	0	0	10(100%)	0
Unstructured	5(100%)	0	0	10(100%)	0	0
Structured	0	5(100%)	0	0	10(100%)	0
Would traditional long case	2(40%)	2(40%)	1(20%)	5(50%)	5(50%)	0
exam benefit students?			. ,			
Traditional long case helps to imp	rove:	•			·	
Knowledge	4(80%)	1(20%)	0	5(50%)	4(40%)	1(10%)
Attitudes	2(40%)	3(60%)	0	3(30%)	7(70%)	0
Skill (Communication, physical	1(20%)	4(80%)	0	3(30%)	7(70%)	0
examination etc)						
Feedback on traditional long	0	5(100%)	0	0	10(100%)	0
case given						
Getting feedback would improve student performance in areas of :						
Knowledge	3(60%)	2(40%)	0	5(50%)	5(50%)	0
Attitudes	1(20%)	3(60%)	1(20%)	2(20%)	8(80%)	0
Skill (Communication, physical	1(20%)	3(60%)	1(20%)	2(20%)	8(80%)	0
examination etc)						
Should long case be removed	1(20%)	3(60%)	1(20%)	8(80%)	1(10%)	1(10%)
from examination?						
Is traditional long case better than OSCE?	2(40%)	3(60%)	0	2(20%)	8(80%)	0

Table 2: Perceptions of Faculty and resident doctors after traditional examination

Perceptions after OSCE	Faculty (n=5)		Residents (n=10)			
	Yes	No	Not sure	Yes	No	Not sure
Information about OSCE given	5(100%)	0	0	10(100%)	0	0
Training about OSCE given	5(100%)	0	0	10(100%)	0	0
Queries about OSCE were	5(100%)	0	0	10(100%)	0	0
handled						
Satisfaction with the exam setup	4 (60%)	1(20%)	0	10(100%)	0	0
Comfort when giving/taking	3(60%)	1(20%)	1(20%)	8(80%)	2(20%)	0
exam						
OSCE is adequate in testing :						
Knowledge	3(60%)	2(40%)	0	6(60%)	4(40%)	0
Attitudes	5(100%)	0	0	7 (70%)	3 (30%)	0
Skill (Communication, physical examination etc)	5(100%)	0	0	10(100%)	0	0
Any difficulty experienced with simulated patients?	0	5(100%)	0	3(30%)	7(70%)	0
OSCE is:			1	1		
Subjective	0	5(100%)	0	0	10(100%)	0
Objective	5(100%)	0	0	10(100%)	0	0
Unstructured	0	5(100%)	0	0	10(100%)	0
Structured	5(100%)	0	0	10(100%)	0	0
Would evaluation like OSCE benefit students?	5(100%)	0	0	10(100%)	0	0
OSCE helps to improve:	1	1	r	1	1	
Knowledge	3(60%)	2(40%)	0	6(60%)	4(40%)	0
Attitudes	5(100%)	0	0	7 (70%)	3 (30%)	0
Skill (Communication, physical examination etc)	5(100%)	0	0	10(100%)	0	0
Feedback on OSCE given	5(100%)	0	0	10(100%)	0	0
Getting feedback would improve student performance in areas of :						
Knowledge	3(60%)	2(40%)	0	7 (70%)	3 (30%)	0
Attitudes	5(100%)	0	0	10(100%)	0	0
Skill (Communication, physical examination etc)	5(100%)	0	0	10(100%)	0	0
Do you want OSCE as a change?	2(40%)	1(20%)	2(40%)	8(80%)	2(20%)	0
Is OSCE better than traditional	3(60%)	1(20%)	1(20%)	7(70%)	1(10%)	2(20%)
long case						

Table 3: Perceptions of Faculty and resident doctors after OSCE

Table 4: Advantages of OSCE over Traditional Long Case Examination

Sr No	OSCE Advantages
1.	OSCE is objective and structured.
2.	OSCE is comprehensive as it covers a wide range of knowledge and clinical
	competencies.
3.	OSCE can be used as a pre-test, in-course test or post-test: used in formative and
	summative examinations.
4.	OSCE measure course objectives, enhancing teaching level, relate theory to practice,
	makes exam well developed, increased decision making ability and enhanced methods of
	evaluation, than the traditional method
5.	OSCE checklists can be used by students for peer and self-assessment.
6.	Depending on the content tested at the station, OSCE examiners may be clinicians, pre-
	clinical instructors, standardized or simulated patients, or other health care
	professionals (e.g., nurses, paramedics, social workers)
7.	Various skills can be assessed at one time with stations to test course outcomes such as
	clinical skills (eg. mental status examination); practical procedures (eg. ECT,
	psychotherapy); patient investigations (eg. interpretation of a brain scan); patient
	management (eg. completing a prescription sheet); communication skills (eg.
	psychoeducating relative); providing patient education (eg. compliance).
8.	OSCE not only assesses knowledge but also critical thinking and clinical judgment.

Discussion

The Medical Council of India (MCI) guides the objectives and standard of psychiatric education in the country by formulating the rules, curriculum of studies, infrastructure provided with the teacher-student ratio which is mandatory and to be followed in all medical colleges of India. MCI also inspects regularly if the requirements are met with and also evaluates the teaching centers for quality of teachers and examinations conducted by universities.⁹ The post-graduate training programs show wide variations not only within the country but also from country to country.^{10,11}

Most of the postgraduate training institutes in India follow a summative qualifying examination system in theory and practicals. Also residents do not get a feedback on their performance in routine clinical work on the various domains of learning to help them improve their knowledge and skills. The teachers also are too busy to give feedbacks to students and generally ask them to focus more by reading books regularly. Hence, when understanding the perceptions of both the faculty and residents about the current evaluation system followed in the Maharashtra

state, it brought about a strongly positive response in the need to change it to something more objective and structured. There has been an explosive growth in the adoption of OSCEs and standardized patient (SP)-based assessment in psychiatry in the last 20 years in several nations like Canada, US, UK, Iran and others. ¹²⁻¹⁶ Standardized patient and OSCE-type examinations have a much longer history in disciplines other than in psychiatry. This shift in examination format completely reoriented in-training assessment methods throughout the world. However in India, OSCE in psychiatry has to still take its mark. There has been good evidence of psychometric reliability and validity of psychiatry OSCEs especially in clerkships, ¹⁷⁻²¹ though there is some controversy about its validity at higher levels (senior residents /registrars). ²²⁻²⁵ It has been studied that the use of SPs and OSCEs shapes what students and teachers do and what they place value on; which can be positive, focusing on clinical skills ^{26, 27} rather than just knowledge or negative, driving development of behaviors that are artificial such as "shot gun" interviewing.²⁸ The faculty and residents endorsed this in our study where they felt a need to improve on skills and attitudes by using assessment methods to evaluate the same.

The traditional long case history is an essential component of the final examination. It focuses on format – case history, identifying data, which help to give meaning and substance to the diagnostic formulation and help to arrive at a diagnosis, and the context in which therapy would be affected, including a rehabilitation plan. It also includes physical examination – neurological, cardiovascular system, respiratory system and fundoscopy. It happens to be an essential component of the evaluation process which decides whether the student passes or fails. The present evaluation process is not very satisfactory and needs improvement. There generally should be faculty evaluation by residents so as to improve the teaching and development of the faculty. Program evaluation by residents and faculty must be used to improve educational programs in every institute. Oral and written assessment should be regularly conducted at least twice a year, to determine the level of educational progress and the quality of the curriculum and not at the end of three years as is currently practiced.²⁹

The long case usually assesses the knowledge of the resident by delving into the management and prognosis as well as the psycho-education techniques to which most of the faculty attributed. All felt that the long case could be assessed in a structured format to eliminate the examiner bias and make it more objective. The long case also helps to assess the higher cognitive domain and hence most of the faculty did not want it removed from the qualifying examination though the residents were quite happy about it. This could be due to the emphasis laid on the long case in the current evaluation process which acts as a deterrent if the student is not performing well. Hence both faculty and residents wanted an evaluation process where a single case would not be the deciding factor but the student could be assessed over several domains as in the various stations of OSCE.

OSCE was a novel concept for the faculty and residents with both being comfortable. The objective nature of assessment made it easy for the faculty to rate and reduced examiner fatigue. The training of faculty and simulated patients was a little time consuming, setting up OSCE stations required space and hence the faculty was a little apprehensive about the exam setup. Some of the faculty members were uncomfortable just being observers as they were used to playing an active role in asking questions during examinations. Hence they felt that they did not participate as examiners in the OSCE assessment method. Some of the residents experienced difficulty with the

simulated patients as they were more used to real patients and knew the actors who were playing simulated patients which was not expressed by the faculty.

All agreed that the stations were designed to assess various domains and hence gave a better assessment than just a single long case and the feedback given would help in improving the skills and attitudes as they could be individually tested in the residents.

Despite this, the entire faculty was not willing to change to OSCE for summative assessment as it did not seem very feasible and resources for carrying out OSCE were not provided by the hospital or university. Requirement of infrastructure, manpower, finances, time, motivation of faculty and training were elicited as constraints by them in response to an open ended question. However the faculty and residents who wanted the change expressed that it could be used in the formative assessments done on a yearly basis in the department to improve the teaching learning experience. But that would also require planning and an OSCE station bank to be formulated by the department which can then be used for medical students as well as the resident doctors. Taghva et al have given a standard format for establishing a practical, reliable and measurable OSCE in psychiatry in three days.³⁰ Several other studies have also reported that OSCEs and SPs are relatively expensive and consideration should be given to using them only when other forms of assessment are less valid or inappropriate.^{19,31}

The advantages of OSCE over traditional examinations has been enlisted. Table 4

Conclusions

This was a pilot project done in a very small sample to understand the perceptions of faculty staff and students to a change in the assessment system in psychiatry. Some medical institutes in Maharashtra are using OSCE for formative assessment in the disciplines of surgery and ophthalmology. However, it has not been approved by MUHS for the summative examinations. There is a strong need among the medical educationists especially in our country to bring about these changes and they are working with the state government health authorities and universities to achieve the goal of producing competent and knowledgeable specialists, competent medical teachers and trained doctors to carry out research in the respective disciplines.

Acknowledgements:

I would like to thank Dr Avinash Supe, Director (ME & MH), Seth GSMC & KEM Hospital, Director FAIMER Regional Institute, Dr SR Parkar Prof & Head Psychiatry and the FAIMER faculty for their support and guidance to carry out this educational research.

References:

1.Leichner P, Sisler GC, Harper D. A study of the reliability of the clinical oral examination in psychiatry. Can J Psychiatry 1984; 29:394-397.

2.Leichner P, Sisler GC, Harper D. The clinical oral examination in psychiatry: the patient variable. Annals RCPSC 1986; 19:283-284.

3.Harden RM, Gleeson FA. Assessment of clinical competence using an observed structured clinical examination. Med Educ. 1979; 13:41-47.

4. Barrows HS, Abrahamson S. The programmed patient: a technique for appraising student performance in clinical neurology. Journal of Medical Education. 1964; 39:802-805.[Medline]

5. Von der Vleuten CPM, Swanson D. Assessment of clinical skills with standardized patients: state of the art. Teaching and Learning in Medicine 1990; 2:58-76.

6. Loschen EL. Using the objective structured clinical examination in a psychiatry residency. Acad Psychiatry 1993; 17: 95–104.

7. Famuyiwa O O, Zachariah MP, Ilechukwu STC. The objective structured clinical exam in psychiatry. Med Educ. 1991; 25:45–50.

8. Hodges B, Lofchy J. Evaluating psychiatry clinical clerks with a mini-objective structured clinical examination. Acad Psychiatry 1997;21 :219–25.

9. MCI. Medical Council of India Salient Features of Postgraduate Medical Education Regulations, 2000. Amended up to May 2013. [Last accessed on 2015 Feb 18]. Available from:

http://www.mciindia.org/RulesandRegulations/PGMedicalEducationRegulations2000.aspx

10. Murthy R S, Khandelwal S. Undergraduate training in Psychiatry: World perspective. Indian J Psychiatry 2007;49:169-74.

11. Patel RR. Postgraduate training in psychiatry in India with focus on Mumbai. Mens Sana Monogr. 2015; 13: 52-58.

12. Hodges BD, Hollenberg E, McNaughton N, Hanson MD, Regehr G. The psychiatry OSCE: A 20-year retrospective Acad Psychiatry 2014; 38:26-34 DOI 10.1007/s40596-013-0012-8

13. Robinson DJ. A training and examination program to prepare psychiatric residents for OSCE-style exams. Acad Psychiatry 2009; 33: 331–4.

14. Thompson CM. Will the CASC stand the test? A review and critical evaluation of the new MRC Psych clinical examination. Psychiatrist 2009; 33:145–8.

Taghva A, Mir-Sepassi GR, Zarghami M. A brief report on the implementation of an objective structured clinical examination (OSCE) in the 2006 Iranian Board of Psychiatry Examination. Iran J Psychiatry Behav Sci. 2007; 1: 39–40.
Al Sinawi H, Al SharbatiM, Obaid Y, Viernes N. Preparing and conducting objective structured clinical examination for

Oman medical specialty board R1-R4 residents. Oman Med J. 2012; 27: 246-8.

17.Park RS, Chibnall JT, Blaskiewicz RJ, Furman GE, Powell JK, Mohr CJ. Construct validity of an objective structured clinical examination (OSCE) in psychiatry: associations with the clinical skills examination and other indicators. Acad Psychiatry 2004; 28: 122–8.

18. Walters K, Osborn D, Raven P. The development, validity and reliability of a multimodality objective structured clinical examination in psychiatry. Med Educ. 2005; 39: 292–8.

Vaidya NA. Psychiatry clerkship objective structured clinical examination is here to stay. Acad Psychiatry 2008; 32: 177–9.
Amr M, Amin T. Assessment methods of an undergraduate psychiatry course at a Saudi university. Sultan Qaboos Univ Med J. 2012; 12: 214–20.

21. Ismail WSW, ZamZam R, Jaafar NRN, Midin M, Baharudin A, Zakaria H, Sidi H. Objective structured clinical examination (OSCE) in psychiatry new curriculum undergraduate posting and its standard setting procedure: an experience in Universiti Kebangsaan Malaysia (UKM). ASEAN J Psychiatry 2010; 11:118–27.

22. Benning T, Broadhurst M. The long case is dead-long live the long case loss of the MRC Psych long case and holism in psychiatry. Psychiatrist 2007; 31: 441–2.

23. Rasoulian M, Taghva A, Panaghi L, Salehi M, Zahiraldin A, Ghalebandi M. A qualitative study of psychiatrists' view about a pilot objective structured clinical examination (OSCE) in Iran. Iran J Psychiatry Behav Sci. 2007; 1: 27–9.

24. Marwaha S. Objective structured clinical examinations (OSCEs), psychiatry and the clinical assessment of skills and competencies (CASC) same evidence, different judgment. BMC Psychiatry.2011; 11:85.

25. Taghva A, Panaghi L, Rasoulian M, Bolhari J, Zarghami M, Esfahani MN. Evaluation of reliability and validity of the psychiatry OSCE in Iran. Acad Psychiatry 2010; 34: 154–7.

26. Melding P, Coverdale J, Robinson E. A 'fair play'? Comparison of an objective structured clinical examination of final year medical students training in psychiatry and their supervisors' appraisals. Australas Psychiatry 2002; 10: 344–7.

27. McMullen I, Checinski K, Halliwell S, Maier M, Raji O, Rands G et al. Peer observation in simulated CASC events and its effects on learning. Psychiatrist2013; 37: 111–5.

28. Wallace J, Rao R, Haslam R. Simulated patients and objective structured clinical examinations: review of their use in medical education. Adv Psychiatr Treat.2002; 8 : 342–8.

29. Sharma S Postgraduate training in psychiatry in India. Indian J Psychiatry 2010; 52(Suppl1): S89–S94.doi: 10.4103/0019-5545.69219

30. Taghva A, Bolhari J, Bahador H, Attari A, Fadai F, Khademi M et al. How to run psychiatry OSCE in three days. Iran J Psychiatry Behav Sci. 2008; 2: 5–9.

31. Yudkowsky R. Should we use standardized patients instead of real patients for high-stakes exams in psychiatry? Acad Psychiatry 2002; 26:187–92.