ORIGINAL ARTICLE

Final Year MBBS Students' Perception for Observed Structured Clinical Examination

Faisal Ghani Siddiqui

ABSTRACT

Objective: To determine perceptions of final year students about observed structured clinical examination (OSCE) and to determine its acceptance among these students.

Study Design: Sequential mixed method design using survey questionnair and in-depth interviews.

Place and Duration of Study: The study constituted a one-time survey and in-depth interviews conducted over a period of three consecutive days during final year MBBS annual examination at OSCE centre, from April 04, 2010 to April 06, 2010.

Methodology: Three hundred and fifty final year MBBS students, selected through non-probability convenience sampling, were asked to fill the 12-item questionnaire. Three hundred and thirty one students returned the forms. In-depth, structured interviews with 22 students, selected by non-probability purposive sampling, were conducted. The interviews were tape recorded for subsequent transcription. The statistical analysis was done using SPSS 17. The qualitative data was analyzed through content analysis techniques.

Results: Three hundred and thirty one final year MBBS students (50.6% females) filled the questionnaire (response rate 94.6%). Fifty three percent respondents agreed that the OSCE tasks were taught during clinical rotations. The experience was stressful for 67.9% respondents. Inadequate prior guidelines, inadequate time for stations, newness of the assessment format and vague instructions were the main causes for stress. Over 70% of the students felt that OSCE helped them identify areas of weakness in their practical and clinical skills; 56.5% felt that the stations dealt with practical skills. Seventy nine percent students were happy with the attitude of the examiners while 19% students felt that the facilitators were uncooperative; failure of the examiners to observe the students during performance of the tasks was the major cause for dissatisfaction. Nearly thirty percent (29.9%) respondent felt that the stations were difficult to understand. Over forty nine percent (49.7%) complained that adequate guidelines were not given prior to the examination. Overall, 67% students were satisfied with this new method of assessment.

Conclusion: The overall acceptance of the students for OSCE was low. Reforms such as redesigning of curriculum and learning objectives, training the faculty in conduct of OSCE, involving more external examiners and establishment of a skill's lab would help improve this assessment tool.

Key words: *OSCE. Clinical skills. Evaluation. Awareness. Acceptance.*

INTRODUCTION

Assessment of medical students' clinical competence is important. Several methods and tools exist for this purpose.[1,2] Patient-centered practice has necessitated assessment of clinical competence as fundamental to ensure proper patient care once the medical students qualify as healthcare providers.[3] Harden first described the objective structured clinical examination (OSCE) in 1975 with the aim to evaluate clinical competence and skills of medical students in a comprehensive and consistent manner with a special focus on the objectivity of the process.[4,5] The major strength of OSCE is its ability to measure core competencies desired from a medical graduate. These core competencies are broken down into individual tasks or behaviours, which are then evaluated through a scoring checklist. The checklist includes the main components of the skill being assessed. If deemed necessary, checklist items can be weighed to reflect the importance of one item over the other. Some institutions use global rating scales as well. OSCE has a very high validity and reliability index. Though OSCE has a wide range of reliabilities, from 0.19 to 0.89, the benchmark reliability standard reported is 0.80.[6,7] Other perceived advantages include standardization of questions between students and the ability to test a broader range of clinical skills. OSCE, therefore, is now considered a gold standard tool for the formative and summative assessment in various medical disciplines worldwide.[8-10]

The undergraduate teaching in Pakistan, until recently, was based on didactic lectures and small group ward rotations. The assessment of students was based on viva voce and long and short cases, which mainly required simple recall of knowledge. The College of Physicians and Surgeons Pakistan (CPSP) introduced

Department of Surgery, Liaquat University of Medical and Health Sciences, Jamshoro.

Correspondence: Dr. Faisal Ghani Siddiqui, 42/142, Defence Officers Housing Society, Hyderabad, Sindh. E-mail: faisalgsiddiqui@gmail.com

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Task Oriented Assessment of Clinical Skills (TOACS), a derivative of OSCE in early 1990s in its various postgraduate course examinations. Responding to Pakistan Medical and Dental Council (PM&DC) requirements, in 2007, the Liaquat University of Medical and Health Sciences, Jamshoro, started observed structured practical examination (OSPE) for basic clinical sciences in a phasic manner. The first batch of final professional MBBS students were examined through OSCE in 2010. The students and the clinical faculty were, therefore, exposed for the first time to this assessment tool.

This study was designed to determine the perceptions of final year students regarding OSCE and to determine its acceptance among students. It also sought feedback from the students to have an insight of plausible lapses in development, organization and actual conduction of OSCE, which in turn would provide guidelines for faculty development initiatives and a curricular reform.

METHODOLOGY

A sequential mixed method design using survey questionnaire and in-depth interviews were used to assess the perceptions of the final year MBBS students for OSCE in General Surgery conducted at Liaquat University of Medical and Health Sciences, Jamshoro, from June 07, 2010 to June 09, 2010. The study was given an approval by the institutional Ethics Review Committee.

The OSCE consisted of fifteen, five-minute stations; 7 static and 4 interactive stations with 4 rest stations. One station comprised of a simulated trained volunteer to act according to a predesigned scenario. The stations were designed to test cognitive and psychomotor skills. One station checked the communication skills. The performance of tasks was marked with specifically designed checklists, each with an assigned score for different skills. Students moved between stations on ringing of a bell.

At the completion of OSCE, 350 students were asked to fill-in a questionnaire. A written informed consent, assuring confidentiality and anonymity, was taken from all participants. The 12-item questionnaire included questions based on a 5-point Likert scale to assess the students' awareness and to evaluate their overall satisfaction for OSCE based on the level of agreement. The agreement scale included five categories ranging from strongly agree, agree, don't know, disagree and strongly disagree with numerical values assigned to each. Three hundred and fifty students were asked to fill a predesigned questionnaire; 331 filled and returned the questionnaire.

Twenty-two students, selected by non-probability purposive sampling, were also interviewed through four predetermined questions. The questions were used to explore in detail, potential areas that required further explanation identified during the survey. In-depth discussion was tape recorded for subsequent transcription. Content analysis of the qualitative data obtained through interviewing was done to identify themes and patterns. Likert responses to the 13 items were analyzed by calculating frequencies of each response. The statistical analysis was done through Statistical Package for Social Sciences (SPSS) version 17.

RESULTS

Of the 350 students, 331 filled and returned the questionnaire (response rate 94.6%). There were 177 females (50.6%) and 154 males (49.4%). The mean age was 24.2 ± 2.84 years. The responses are depicted in Table I.

Twenty-two students, selected by non-probability purposive sampling, were also interviewed through four predetermined questions (Table II).

Content analysis of transcribed interviews resulted in emergence of following four main themes with supportive evidence of results obtained through survey questionnaire for triangulation 67.9% students thought

Table I: Responses to survey questions.

Feedback items	Strongly disagree n (%)	Disagree n (%)	Don't know n (%)	Agree n (%)	Strongly agree n (%)
Stations were easy to understand	46 (13.9)	48 (14.5)	82 (24.7)	89 (26.9)	66 (20)
Stations dealt with practical skills	39 (11.8)	41 (12.4)	65 (19.6)	84 (25.4)	102 (30.8)
Tasks given in OSCE were demonstrated during ward postings	63 (19)	38 (11.5)	49 (14.8)	81 (24.5)	100 (30.2)
Contents of the OSCE stations were relevant to the curriculum	106 (32)	65 (19.7)	57 (17.2)	44 (13.3)	59 (17.8)
Time for each station was adequate	49 (14.8)	46 (13.9)	47 (14.2)	78 (23.6)	111 (33.5)
Proper guidelines were given before OSCE	78 (23.6)	41 (12.4)	39 (11.8)	77 (23.2)	96 (29)
OSCE is better than vivavoce	45 (13.6)	20 (6)	32 (9.7)	57 (17.2)	177 (53.5)
Examiners were courteous and cooperative	40 (12.1)	24 (7.3)	66 (19.9)	88 (26.6)	113 (34.1)
OSCE is a practical examination tool	35 (10.6)	20 (6)	31 (9.4)	70 (21.1)	175 (52.9)
OSCE helped me identify my deficiencies in clinical skills	44 (13.3)	30 (9.1)	32 (9.7)	65 (19.6)	160 (48.3)
The OSCE was stressful	29 (8.8)	56 (16.9)	16 (4.8)	28 (8.5)	202 (61)
I found OSCE satisfactory	31 (9.4)	61 (18.4)	20 (6.04)	45 (13.6)	174 (52.56)

Table II: Pre-determined questions for in depth interview (n = 22).

Questions
What were the major causes of stress?
What behaviour of the facilitators disturbed you the most?
What is the major reason for your dissatisfaction with OSCE?
What improvements, in your opinion, would help make OSPE better?

OSCE was stressful. Some of the common reasons for stress identified by the respondents included:

i. Inadequate prior guidelines: Thirteen students (59.1%) said that they received little or no guidelines for the new format of examination resulting in stress both before the start and during the examination.

ii. Inadequate time allocated for stations: One out of every three students (36.4%) identified insufficient time at each station as the major cause of stress.

iii. Newness of the assessment format: Over thirty one percent students (7 interviewees) found OSCE totally different from what they had experienced in the previous four years. Although a majority (70.6%) of those asked to fill the survey forms felt that OSCE was instrumental in identifying areas of weaknesses in their clinical skills, 19 students (86.4%) protested that the skills tested were not adequately demonstrated during ward postings and, therefore, made the experience stressful.

A small number of the students (19%) regarded the examiners less courteous and uncooperative. Reasons quoted for the dislike of the examiners included:

i. Lack of attention: Failure of the examiners to observe them while they performed various tasks was the major reason for the dislike of the examiners. Fifteen students (68.1%) complained that the examiners did not pay attention to them while they completed various tasks.

ii. Examiner's fatigue: Weariness of the examiners was felt by a small number of students. Five students (22.7%) thought that the examiners were tired and hence, demonstrated lack of interest in the proceedings.

iii. Failure to act as interpreter for foreign students: One foreign student found the examination stressful due to her failure to communicate with the simulator.

Overall, 61.5 percent students in our series were satisfied with the process and preferred it to the traditional viva voce type of examination. The students put various suggestions forward to improve OSCE. Nineteen out of 22 students interviewed said that skills tested in OSCE were not sufficiently demonstrated during ward postings; they suggested that it should be ensured that all skills required of them to be performed at least once be tought during their ward postings. Provision of list of core competencies to students (23.5%), training of faculty (34%) and adequate time allocation (45%) were some of the other suggestions put forward by the students.

DISCUSSION

Objective structured clinical examination (OSCE) measures performance-based outcomes, not otherwise measured by traditional evaluation tools such as viva voce.[11] Such evaluation is necessary because high level of competency for patient care is expected of our medical students after they qualify as medical practitioners. Though there is some evidence of examiner bias,[12] OSCE has proven to be both a reliable and a valid mode of evaluation of clinical skills. It is also generally well accepted by both the students and the faculty worldover.[13] OSCE has only recently been introduced in undergraduate medical education in Pakistan, a delay attributed in part to limitation of resources and in part because departments of Medical Education are either in their infancy or outright non-existent in most, if not all medical institutions in this country.

Introduction of OSCE at Liaquat University of Medical and Health Sciences received mixed reaction from the students which was apparent from their responses to questionnaire regarding their perception for this tool of assessment. Only 43% students in this series believed that the tasks given in OSCE were taught to them during ward postings, 9.3 percent strongly disagreed and 20 percent disagreed that rotations in surgical wards helped them in any way in performing tasks during OSCE. This finding corresponds well with the study by Newble, who reported some respondents complaining that OSCE did not examine a wide range of knowledge, skills and clinical competence and the tasks that they learnt during their clinical rotations.[14] A valid clinical examination tests all components of clinical competence;[15] poor face validity of OSCE can be attributed to the failure of our surgical wards in changing their teaching strategies in view of the changed assessment modality; this reason is further corroborated by the fact that 29.3% students felt that some of the tasks presented in OSCE were never taught to them during ward postings. This makes a strong case for the department of surgery in the institution to revise its syllabus, incorporating more skills that test core competencies so that instruction matches with assessment. In addition, establishment and commissioning of a skill's lab would help in teaching students skills not otherwise possible in real life. Diversifying and enhancing the number of skills expected from the students in OSCE would have a positive effect on students' approaches to learning.[16,17] The Pakistan Medical and Dental Council's curriculum lists all the basic skills expected from a competent doctor and can be used as a guide in identifying the competencies that a student should be taught during his posting in the department of surgery.

In these series, 67.9 percent students felt that OSCE was very stressful to them. This finding is consistent with the findings reported by Dadgar *et al*. who documented 62.9% of the students being stressful before OSCE.[18] Some of the common reasons for stress identified by the respondents included inadequate prior guidelines (59.1%), inadequate time allocated for stations (36.4%), newness of the assessment format (31.8%) and vague and difficult to understand instructions (13.7%). In a

similar study, Iqbal *et al*. report only 28 percent of students finding OSCE stressful in their series, attributing this low percentage to familiarity of the students with the faculty and to less interactive nature of tasks.[19] Anxiety and stress adversely affect self-efficacy and confidence of students. In a previously conducted study, second year medical students who had a high degree of anxiety at the time of OSCE were less confident about their ability to take the examination compared to their less anxious counterparts.[20] Higher anxiety level associated with OSCE contributes to less efficacy and a low confidence level of the students taking this examination compared to those appearing in traditional examinations like multiple choice questions and *viva voce,*[21] which otherwise have lower reliability and validity than OSCE.[22]

In the current study, the opinion of the students varied widely regarding the sufficiency of time allocated at each OSCE station. While 76 percent respondents strongly felt that the time given for each station was adequate, 11.3 percent students (5% strongly disagreed and 6.3% disagreed) felt that the time was not sufficient. Approximately, half of the 110 students, in a similar study by Khursheed *et al*. felt that the 5-minute time allocated for each station was inadequate.[23] Short time periods at each OSCE station, requiring hurried responses greatly affect reliability of OSCE. During interviews, students suggested increasing the time limit for each station. Some students also thought that different tasks require different time limits. Five minutes were allocated to each station in the institution. Depending on the complexity of the skills being assessed, the length of OSCE stations varies from 5 to 30 minutes. However, it is practically difficult to allocate different time limits at different OSCE stations.

There is a general agreement that assessment should be aligned with curricular objectives. Such assessment program not only enables the learners to focus their learning on what is envisaged in the curriculum but also precludes feelings of unfairness and stress. Majority of students perceived the tasks given in OSCE stations to be irrelevant to the curriculum and the course taught to them. Twenty eight point five percent students believed that the content of the OSCE was pertinent to the curriculum and ward tutorials. A review of the syllabus booklet, handed over to this batch of students at the start of academic session, supported students' concern; none of the core competencies that the students were asked to perform in OSCE was mentioned in the syllabus. These findings are in stark contrast to those reported by in a similar study where 84.5% of third year medical students from a private Medical University in Karachi acknowledged that the OSCE covered the objectives of the clinical rotations and that the contents of various stations were linked to the curriculum.[23] Majority of our students appreciated that skills tested in OSCE were of practical nature and that OSCE helped them in identifying their areas of weaknesses. A small number of the students, though opined that skills asked in OSCE were either never taught to them or were taught superficially in the ward rotations. This was further corroborated during the in-depth interviews where 19 out of the 22 students who were interviewed said that skills tested in OSCE were not sufficiently demonstrated during ward postings.

An overwhelming proportion of our students were satisfied with the attitude of the examiners and observers though a small number of the students (19%) regarded the examiners less courteous and unco-operative; failure of the examiners to observe the students as they performed the tasks, disinterest, examiner's fatigue and their failure to act as interpreter for foreign students were some of the reasons identified by the students for facilitator's poor behaviour during OSCE. Comments from the students indicated that they felt that the faculty should be trained in the conduct of OSCE. The fact that well trained faculty is essential for future conduct of OSCE is also supported by the literature. It is recommended that the faculty members should attend workshops on designing and conducting OSCE. Incorporating interpreters for the foreign students would also help eliminate the language barrier in their interaction with the simulator. Though difficult to eradicate the 'halo' effect, inviting more external facilitators may help overcome bias arising from prior teacher-student relationship.[12]

Overall, 67% students in these series were satisfied with the process. The satisfaction rate is very low compared to other such series, which report students' acceptability for OSCE as high as 90 percent;[24,25] these studies report that the students found the experience during the OSCE to be realistic, challenging and of value to their program of study. Low student acceptability for OSCE in the institution could be attributed to stress due to lack of proper guidelines, untrained faculty, inadequate time for stations, newness of the assessment technique, tasks irrelevant to the curriculum, and tasks not demonstrated during ward rotations.

The overall perceptions and acceptance of the final year medical students for OSCE in our series were low but encouraging. There was, however, need to make OSCE a reliable, valid and feasible test, which is acceptable to both the students and faculty. In the light of observations accrued from this study, it is recommended that the University should ensure curricular reforms in line with PM&DC guidelines with redesigning of learning objectives and inclusion of core competencies expected from the students to learn during the course of study. The students should also be provided with a list of core competencies and procedural skills that they are expected to learn during the respective semester. In this

regard, the PM&DC curriculum can be used as a guide. Training the faculty in conduct of OSCE through workshops, involving more external examiners and establishing of a clinical skill's lab are some other steps in the positive direction, which the author feels would help in proper utilization of OSCE.

This study helped in identifying the strengths and weaknesses of OSCE at Liaquat University of Medical & Health Sciences. The limitations of this study included a small sample size, focus on students from one program, its confinement to one medical institution and a small number of parameters related to OSCE taken into consideration. However, the author believes that the impact of this study is huge and will help in modifying and adaptation of OSCE in the local context in the light of the weaknesses identified.

CONCLUSION

The students perceived OSCE as a better assessment tool as compared to viva voce. However, in-depth discussions and interviews with them indicated an overall low acceptance for this method. We conclude that OSCE is a useful method of assessment of competencies provided pitfalls in its development and execution are removed.

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