ORIGINAL ARTICLE

PERCEPTIONS OF FINAL PROFESSIONAL MBBS STUDENTS AND THEIR EXAMINERS ABOUT OBJECTIVE STRUCTURED CLINICAL EXAMINATION (OSCE): A COMBINED EXAMINER AND EXAMINEE SURVEY

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ABSTRACT

Objective: To explore the perceptions of MBBS students and their examiners regarding OSCE who appeared in the final professional MBBS examination in 2015.

Material and Methods: In this cross-sectional study, a validated and pretested questionnaire already used by Khan M et al, in a similar study was distributed among 250 final year MBBS students and 14 examiners soon after the completion of their OSCE in the Department of Medicine of Khyber Teaching Hospital (KTH) Peshawar. Questions were asked about any pre-exam orientation regarding OSCE, exam content, quality of performance, validity and reliability, learning opportunities, stress factor and its comparison with previous exam systems. The data was analyzed using SPSS version 16.

Results: A total of 250 students participated in this survey, 150 (60%) of which were males and 100 (40%) females. Two hundred students (80%) stated that exam was fair and comprehensive, 88% believed OSCE was more stressful and mentally tougher than traditional exams like multiple choice questions (MCQs), short answer questions (SAQs) and viva. However, 90.8% of the examinees reported that OSCE provided an ample opportunity to learn and compensate for areas of clinical weakness despite a huge stress factor. Two-hundred and ten (84%) students considered OSCE as a valid and reliable format of clinical assessment and 90% pledged that they would recommend OSCE for use in future as a tool of assessment in medical education. The total number of examiners conducting the exam was 14, 10 (71.4%) of which were males and 4 (28.6%) were females. Majority of their statements correlated with those of the candidates examined. However, there was a sharp contrast in what they felt about stress levels and effect of gender, ethnicity and personality on the outcome of OSCE. Only 8% of the examiners (vs 88% of the candidates) thought that OSCE was very stressful and 14.3% of them (vs 64% of the candidates) were of the view that factors like gender, ethnicity and personality can affect the results of OSCE.

Conclusion: Majority of students and examiners thought of OSCE as a fair, standardized and transparent way to assess clinical competencies though students found it tougher mentally in contrast to what the examiners perceived. Moreover, the element of pass by chance and bias was less in OSCE compared to other practical exams like SAQs, long questions and viva.

Key Words: OSCE, MBBS, medical students, clinical assessment.

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INTRODUCTION

After being introduced by Harden and colleagues in 1975, the technique of Objective Structured Clinical Examination (OSCE), has been accepted as a fair and standardized tool to assess the clinical competences of medical students, residents and fellows the world over[1]. Objective Structured Clinical Examination (OSCE) was introduced in the annual clinical assessment of the final year MBBS students of Khyber

Medical College (KMC) Peshawar by Khyber Medical University (KMU) in 2010.

Educational experts have long reckoned the need for a valid and reliable assessment in skill based subjects like Medicine, Surgery and Dentistry. In order for this to happen, it is vital to understand how students undergoing exam, feel and think about it. Medical educationists have always been in search of the best methods for formative and summative evaluation of trainees. The Objective Structured Clinical Examination (OSCE) is an approach for student assessment in which different aspects of clinical competence are evaluated in a comprehensive, consistent, and structured manner with close attention to the objectivity of the process[2-4].

Till the introduction of OSCE in Pakistan for the first time by the College of Physicians and Surgeons of Pakistan (CPSP) in postgraduate education, assessment methods such as long cases, short cases, instruments and specimen based oral interviews were the most popular forms of competence assessment with a questionable validity and reliability. This was later adopted by the Pakistan Medical and Dental Council (PMDC), at the undergraduate level as well. Khyber Medical University took another step forward by substituting traditional viva examination with OSCE in 2010 in the province of Khyber Pakhtunkhwa (KP). As per this initiative, all medical and dental schools in KP embraced OSCE as a part of final exam for assessing clinical competencies of students[5-6].

The positive criticism and reflective thinking recorded in the form of a questionnaire may help improve the quality of OSCE evaluation. The students perceptions regarding OSCE help identify areas of strength and weakness and their feedback brings 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 to help improve this assessment tool[7-9]. We conducted this student survey to evaluate the current OSCE system of KMC, Peshawar and improve any shortcomings in the view of the perceptions recorded on a structured questionnaire by final professional MBBS students.

MATERIAL AND METHODS

This was a cross-sectional observational study conducted on 250 final year MBBS students of Khyber Medical College (KMC), who appeared in their annual clinical evaluation in the subject of General Medicine conducted by Khyber Medical University (KMU) in the Department of Medicine of the Khyber Teaching Hospital (KTH), Peshawar. A total of 14 examiners who conducted the OSCE were also included in this survey. The study was approved by the Ethics Committee of KMC/KTH and an informed written consent was obtained from every participant. Data was collected on a structured questionnaire used by Khan et al in a similar study in the past and a written permission was obtained from all the authors before conducting this survey. The questionnaire had closed ended questions related to the OSCE evaluation like syllabus, fairness, stress factor, impact of gender, ethnicity and personality on the individual and overall results, OSCE administration, quality of performance testing, validity and reliability, students rating of different assessment formats and recommendation for the future use. The questionnaire was pilot tested by a group of ten house officers who had recently passed their exam from KMC for content validity.

All the 250 students were divided in seven groups, each comprising of approximately 36 students, to be examined each day, so the exam lasted for a week. For the purpose of convenience, each group of 36 students was split into sub-groups of 18 students each and examined in two parallel OSCE circuits. Each OSCE circuit comprised of 18 stations designed as follows; 2 rest stations, 4 short cases, 2 interactive stations for counseling and communication skills, 2 data interpretation stations and two stations each for clinical scenario, CT scan, Chest X-ray and ECG interpretation. On the day of OSCE, an orientation class was arranged for each group of the candidates in the morning.

The content in each OSCE station was decided by the senior faculty members of the Department of Medicine of KMC/KTH according to the syllabus of KMU for the final year MBBS students. An answer key was formed for each station before the exam had begun and all the examiners were briefed about the nature and content of the OSCE before the exam could take place and their queries addressed.

Each station lasted for 5 minutes and two bells were rung, one at the start and one just 30 seconds before the closure of each individual station to alert students to complete their remaining task. The students were moved in a clockwise fashion in the OSCE circuit. At the completion of one circuit, the participating students were segregated to avoid cross over and leaking of the material to the unexamined students who were waiting for their turn in the demonstration room of the Department of Medicine.

The questionnaire was distributed to every student at the completion of each OSCE circuit. They filled the form in the presence of an investigator so that they could be helped in case they did not understand any term or question. As all the 250 medical students of the final year filled the questionnaire, the response rate was 100%. On the final day of this one week long

exam, 14 examiners who conducted the whole OSCE were asked to record their perceptions on the same structured questionnaire used by the students. The data was analyzed using SPSS version 16.

RESULTS

The study sample had 150 (60%) male and 100 (40%) female student participants and comprised of final year MBBS students who appeared in the annual exit examination conducted by Khyber Medical University at Khyber Medical College/Khyber Teaching Hospital, Peshawar in 2015. A total of 14 examiners were also included in the study, 10 (71.4%) males and 4 (28.6%) females. Data was obtained on a questionnaire with written permission of Khan et al, who did a similar survey in the past on dentistry students only. The results of our study were broadly divided into; overall fairness of the OSCE, curriculum involvement, time management, administration, stress factor, level of prior education regarding OSCE, legibility of instructions, validity and reliability and recommendations for future use (Table 1).

The perceptions of the 14 examiners who conducted the OSCE correlated well with what the students felt except in the areas of stress level and impact of factors like gender, ethnicity and student personality on the individual and overall results of the OSCE (Table 2).

Two hundred students (80%) argued that the examination was fair and comprehensive; however, 25 students (10%) each, either disagreed or remained neutral. When asked about the overall administration of the OSCE, 237 (94.8%) candidates declared the exam well-structured and governed, while 13(5.2%) disagreed. When questioned about the element of stress involved, 220 (88%) students found OSCE

Table 1: Perceptions of the 250 examinees who took the final year MBBS annual OSCE at KMC/KTH Peshawar in 2015

Question about OSCE	Agreed	Disagreed	Neutral
OSCE was fair & comprehensive	80%	10%	10%
OSCE was well structured	94.8%	5.2%	0%
OSCE was highly stressful	88%	7.2%	4.8%
OSCE was less biased	97.2%	1%	1.8%
Instructions were clear and legible	97%	1%	2%
OSCEs are valid and reliable	84%	10%	6%
OSCE must be preferred in future over conventional exam formats	90%	6%	4%
Factors like gender, ethnicity, personality etc affect individual and overall results	64%	30%	6%

Table 2: Perceptions of the 14 examiners who conducted the final year MBBS students annual OSCE at KMC/KTH Peshawar (*statements in italic show contrasting perceptions of the examiners versus students*)

Question about OSCE	Examiners agreeing	Examiners disagreeing
Exam was fair	13 (92%)	1 (8 %)
Exam was comprehensive	14 (100)	0 (0%)
Adequate time per station	12 (85.7%)	2 (14.3%)
Exam was well administered	11 (78.6%)	3 (21.4%)
Exam was very stressful	*1 (8%)*	*13 (92%)*
Exam was well structured	14 (100%)	0 (0%)
Exam was biased	0 (0%)	14 (100%)
Exam highlighted areas of weakness	12 (85.7%)	2 (14.3%)
Exam was intimidating (scary)	0 (0%)	14 (100%)
Instructions were clear	14 (100%)	0 (0%)
Exam provided learning opportunities	13 (92%)	1 (8%)
Exam was valid and reliable	13 (92%)	1 (8%)
Gender, ethnicity, personality effects OSCE	*2 (14.3%)*	*12 (85.7%)*
OSCE is easier than conventional formats	*9 (64.3%)*	*5 (35.7%)*

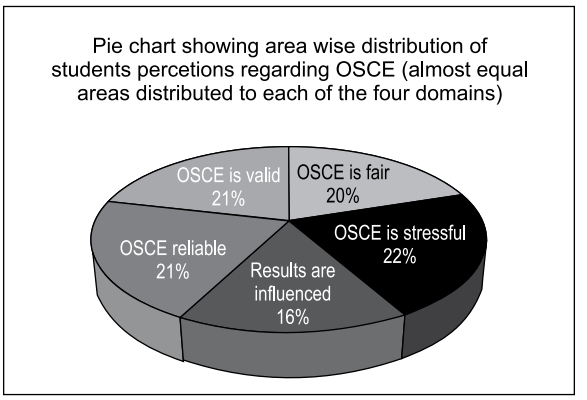

Figure 1: An overview of the overall students' responses in favour of four main domains of OSCE evaluation.

more stressful than conventional exam formats while 18 (7.2%) had a completely opposite view and the remaining 12 (4.8%) opted for neutrality. In contrast to the traditional exam formats like SAQs, long questions and viva etc; 227 (90.8%) of the students said that OSCE did give an opportunity to compensate for the areas of weakness in the exam and 243 (97.2) participants were of the opinion that the exam was less biased. Of all the candidates who appeared in the exam, 242 (97%) said the instructions were clear and legible and that they had enough prior knowledge with regards to what happens in OSCE. In terms of overall validity and reliability, 210 (84%) students felt satisfied. However, 40 (16%) had some reservations. Among all the students, 160 (64%) thought that factors like gender, ethnicity and personality affect the results of OSCE, while 90 (36%) opposed them (Figure 1). When asked whether they would recommend OSCE as more practical, fair and reliable means of examination in future, 225 (90%) said 'yes', 15 (6%) said 'no' and 10 (4%) remained neutral.

DISCUSSION

OSCE is an important part of clinical assessment the world over. A study by Shitu et al, found that OSCE was as fair as 55%[10]. Similar observations were made in other related studies where the fairness scale was even higher at 72%[11-12]. Our study showed comparable results with 80% of the candidates declaring it very fair and comprehensive.

Our study found that 84% of the students were satisfied with the validity and reliability of OSCE. These results are in accordance with those obtained by Russell et al[13]. Our survey showed that 64% of the candidates believed that gender, ethnicity and personality do affect the individual and overall assessment score in OSCE which is in sharp contrast to the studies done in the near past[14-15]. An other recent study declared OSCE as an important part of problem based learning (PBL)[16].

Vast majority of the students (>90%), said that the exam was less biased in comparison to the conventional formats of assessment including MCQs, SAQS, long questions and viva, covered a wide area of knowledge and did provide an opportunity to compensate for the areas of weakness. These results are consistent with the perceptions of the nurses regarding OSCE in a study done in 2012 by Selim et al[17]. Similar trends were observed in other studies as well[18-21].

The predominant view of our students was that they had been briefed and educated well regarding the nature and format of the OSCE beforehand. Nevertheless, most of them (88%), found the exam more stressful and mentally tougher than traditional exam formats. A study done by Yedidia MJ et al concluded that pre-exam briefing of the students regarding OSCE had positive influence on performance. However the stress factor was found to be higher in other studies as well[22].

Despite the rapid popularity, OSCE has gained the world over, there are still some issues related to its conduct and absolute standardization. The identification of valid and reliable cutoff scores for OSCEs remains an important issue and a challenge[23-25]. One of the recent surveys found OSCE as an excellent assessment technique but at the cost of resource exhaustion. An Indian study concluded that OSCEs, test the students' knowledge and skills in a compartmentalized fashion, rather than looking at the patient as a whole[26].

Allen et al reported that anxiety level escalated and remained constantly high throughout OSCE stations. It was also noted that the fear of exam and tense OSCE environment without any rest station and on top of that, the rude and apathetic approach of the examiners during the exam contributed adversely to students' performance[27]. Similar observations and their potential solutions were explored in other studies[28].

The current study showed that most of the students were satisfied with the content and sequencing of the stations and believed that the exam was fairly logical. Similar students' attitude was observed in a study by El-Nemer A[29]. Moreover, students claimed that this exam format helped them identify their areas of clinical weakness and provided them an opportunity to modify and improve their learning style and skills. In our study, 97% of the examinees stated that the OSCE instructions were clear and legible which is in sharp contrast to a Pakistani study where students felt embarrassed with regards to understanding the questions and instructions[30]. Despite the fact that traditional exam formats like MCQ, SAQs, long questions and viva have been in practice for decades, 90% of the candidates felt happy with the introduction of OSCE as a mean

of clinical assessment and were of the view that they would prefer and recommend this exam format for use in future. A similar result was reported by Russell et al in their students' survey back in 2004 in West Indies[13].

It is worth mentioning that this was our first experience with regards to recording the perceptions of medical students and their examiners about OSCE. Considering the latest medical educational literature regarding the global popularity of OSCE, we were expecting OSCE, as a reliable and acceptable format of clinical competences assessment, from both the examiner and examinees' perspective. Unsurprisingly, most of the results were as per our expectations. After correcting all the OSCE related shortcomings observed in this study in the light of perceptions of the stakeholders, we are planning to do a re-audit of this study in future OSCEs, which will be conducted at KMC/KTH Peshawar.

CONCLUSION

Both medical students and their examiners perceived OSCE as a fair, valid and reliable tool of clinical assessment. The examinees thought that, OSCE was more stressful and mentally tougher than other conventional exam formats like MCQs, SAQs and long viva. The students also perceived that factors like gender, ethnicity and personality influence the results of the OSCE. However, the examiners less thought so. Both the parties considered it as a more practical, standardized and less biased method of assessment of clinical knowledge and skills. They recommended its use in future exams on the grounds that, it provided an opportunity to learn, identify and improve areas of clinical weakness and alter learning style and skills in a positive way.

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AUTHOR'S CONTRIBUTION

Following authors have made substantial contributions to the manuscript as under:

Haider I: Concept and design, data collection, literature review, critical appraisal.
Khan A: Data analysis, manuscript writing and proof reading.
Imam M: Literature review and statistical analysis and proof reading.
Ajmal F: Compiling, reviewing and proof reading.
Khan M: Study design, drafting, reference collection, data analysis.
Ayub M: Manuscript drafting and proof reading.

Authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.