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Original Article

Perception of Students and Faculties for OSCE as A Tool for Assessment of Clinical Competence in Summative Examination of General Medicine

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ABSTRACT

Purpose: The objective structured clinical examination (OSCE) has become a standard assessment tool in undergraduate medical school training. The aim of this study was to assess the Perception of Students and Faculties for OSCE as a tool for assessment of clinical competence in Summative Examination of General Medicine.

Methods: In this Study a total of 150 Final Professional Medical Students appeared for final MBBS part II clinical exam of Sri Aurobindo Institute Of Medical Science & PG Institute, Indore, and 10 faculties of Medicine Department were included. 150 students underwent exam by OSCE method in the presence of 10 Medicine faculty members. The 12-item questionnaire included questions based on to assess the faculties and students awareness and to evaluate their overall satisfaction for OSCE based on the level of agreement.

Results: We collected the feedback structured questionnaire from faculties and students and were analysed. A total of 73% study subjects strongly agreed, 51% agreed and 14% disagreed respectively as per their perception for conduct, utility acceptability and feasibility of OSCE as an assessment tool in subject of medicine.

Conclusions: An overall positive perception of OSCE by students and examiners was seen. The OSCE was rated strongly in favor as clinical assessment tool in present study and yields dependable information about the performance capabilities of competencies of Final Professional MBBS students.

Key Words: *Objective structured clinical examination; Faculty; Feedback analysis; General Medicine*

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INTRODUCTION

Over last two decades lot of new learning, teaching and assessment methodology has emerged and tested for their feasibility, reliability and reproducibility. Competency based medical education includes designing and implementing medical education curriculum and assessment, that focuses on the desired and observable ability in the real-life Situations. Assessment of the student's clinical or practical competencies is the backbone of the learning in the medical education curriculum. The agenda of the practical or clinical examination is to assess the cognitive, psychomotor and affective domain of the students [1]. The traditional method which is being presently carried out in most of the colleges is highly subjective and raises concern on its validity and reliability. Learning is assessment based since time memorial, as students learn for what they are assessed. Thus, we need to have a method of assessment more objective than subjective. Objective Structured Clinical Examination (OSCE) in medical science summative clinical exam to overcome the challenges faced by the traditional methods [2-4]. There are also other methods such as essay questions, student projects, constructed response questions, tutor reports, portfolios and log book assessment, to mention a few [5, 6]. Many of these assessment methods have the risk of being prejudiced and lack objectivity and structure, which is essential during examinations [5, 7]. With the intention of minimizing these limitations, *Harden et al* in 1975, introduced the OSCE, which has now become a standard assessment tool in undergraduate and postgraduate medical school training [8, 9]. The OSCE was developed to reduce the bias in the assessment of clinical competence. OSCE check the student's comprehension, consistency, and for the close attention to the objectivity of the process [10]. OSCE consists of multiple stations around which students rotate and at each station they perform and are being assessed. OSCE gives uniform marking scheme for all the students, which in turn reduces the examiner's bias [11]. This is an assessment format in which the candidates rotate around a circuit of stations, where they asked for specific tasks to be performed involving a clinical skill, history taking and or examination and decision making of a patient management [11, 12]. Objectivity and structure are two major underlying principles of the OSCE. Objectivity focuses on the same trained examiner observing

the same task for every student and predominantly depends on the standardized marking scheme whereas structure of OSCE made up of the specific clinical task that is blue printed before the exam within the curriculum [4]. This study was conducted to analyze perception of students and examiners by feedback analysis of OSCE as an assessment tool. Designed to develop OSCE which is an entirely performance-based assessment tool for testing the minimum accepted performance standard of the students as exit examinations during the undergraduate clinical years in most of the medical colleges. In this study we evaluated the perception of faculty and undergraduate students for OSCE as an assessment tool by feedback analysis over traditional methods of assessment in Summative Examination of General Medicine. To evaluate the perception of final year undergraduate medical students towards use of OSCE method for assessment of their clinical competencies in place of one short clinical case in the summative clinical examination. To evaluate the perception of medicine faculties towards use of OSCE as an effective and reliable learning assessment tool.

MATERIALS & METHODS

Study Design:

A cross-sectional study was conducted on students and faculties undertaking OSCE from June 2021 to February, 2022.In this study a total 150 students and 10 faculties were enrolled. The 150 final professional medical students who appeared for final MBBS part II clinical exam of Sri Aurobindo Institute Of Medical Science & PG Institute, Indore, were included. Prior approval from Institutional Ethics Committee of the college was granted on 26/06/2021 (IEC No.: SAIMS/IEC/2021/20). Consent from of the 150 students of current final year MBBS batch and 10 medicine faculties were taken. Enrollment of study participant's written consent was taken.

Method:

For examination and observer ship at OSCE point, 10 medical faculties were appointed and all these appointed faculties were part of this study. The views and perceptions of faculties and students were noted with the help of separate feedback questionnaire which included close ended questions. The questionnaire integrated the questions and evaluated on the basis of the structure, content, administration, reliability, objectivity and fairness of the OSCE in assessing the clinical competency of students.

Validity of the questionnaire was established using face validity wherein experts or people who understand this topic were made to go through these questionnaires and were also asked to pretend as if they are filling the questionnaire forms and then the changes were made accordingly before subjecting them to study subjects.

Secondly, a pilot test was also done on subsets of students and was done time and time again in the last 3 years. After collecting the pilot data, reverse code was done for negatively phrased questions that helped us in checking whether the participants filled the survey after reading the questions carefully. It was checked that the responses to negatively phrased questions were consistent with the responses to similar positively phrased questions and accordingly the questionnaire was validated.

Pilot study was conducted on previous batch where 15 students were selected based on their roll numbers. The results of the questionnaire were checked for reliability and Guttman Split-Half coefficient came out to be 0.782.

Data collection method:

All the students who appeared for the exam on the day of exam were explained about the nature and the method of assessment and also made aware about the utility of the exam, before the commencement of the exam. Faculty members of the medicine department along with postgraduate students were also told to assist the students during the exam.

All the 10 stations were marked and labeled with one faculty member sitting at each station. Students were given 5 minutes at each station after which a bell was rung and the students were made to switch their station. Assessment was done for 3 consecutive days with 50 students/day in batches of 10 students each, and on each day the questions on the stations were also interchanged.

Data collection was done using a self-administered, structured questionnaire after written informed consent was obtained. It included questions on comparison of different methods of assessment. Each station was structured in to three subsets of observation carrying five marks each with additional five marks were given for global assessment (total 20 marks were allotted for each station).

The 12-item questionnaire included questions based on to assess the faculties and 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, undecided, disagree and strongly disagree with numerical values assigned to each. Present OSCE was setup to observe clinical competence of the enrolled students and faculties so as to cover all the domains (cognitive, psychomotor and affective) and topics of medicine subject. Feedback of students and faculty members was analyzed.

Inclusion criteria:

All students appearing for MBBS Final year examination from the main batch and the repeater batch during the day of examination

Exclusion criteria:

- Students not appearing for the exam on the day of examination
- Faculty members not willing to take part in the study

Statistical analysis:

All data obtained was entered in Microsoft office excels. Quantitative data was presented in form of mean and Standard deviation and qualitative data was presented in form of frequency and percentage. Quantitative data was analyzed using t-test after assessing normality of data. P value less than 0.05 was considered statistically significant.

RESULTS

A total of, all 150 study subjects of general medicine department were assigned for summative assessment by OSCE in present study along with 10 observers who were provided with checklist for awarding marks in structured manner for individual station. Each station had objective and structured questions/tasks to be completed by students and faculties. Each station was allotted 20 marks with subtotal marks of 200 for ten stations.

The mean score of total 10 OSCE stations for 150 students was 126±22.68 (maximum 180; minimum 82). The highest 2080 subtotal score was achieved in 3rd station and mean was 13±2.90 (maximum: 19; minimum: 7). the lowest 1923 subtotal score was achieved in 8th station and mean was 12.02±2.84 (maximum 19; minimum 8). The details of scores of all station are showed in table 1.

Table 1: Mean and standard deviation of total OSCE station score

Station	mean	SD	Total
St-1	12.73	2.78	2036
St-2	12.38	2.84	1980
St-3	13.00	2.90	2080
St-4	12.89	2.85	2062
St-5	13.22	2.85	2115
St-6	12.63	2.74	2020
St-7	12.87	2.84	2059
St-8	12.02	2.84	1923
St-9	12.43	2.62	1988
St-10	12.21	2.76	1953
SD: Standard Deviation			

Skill to be observed by feedback analysis of OSCE mark sheet, the history communication skill was 4.6±0.51 (maximum 5; minimum 4), Clinical Examination /lab report/imaging was 3.8±0.91 (maximum 5; minimum 3), Diagnosis and treatment 4.2±0.78 (maximum 5; minimum 3) and Global assessment 4.4±0.51 (maximum 5; minimum 4) respectively showed in figure 1.Also collected the feedback structured questionnaire from examiners and students and were analysedshowed in table 2.

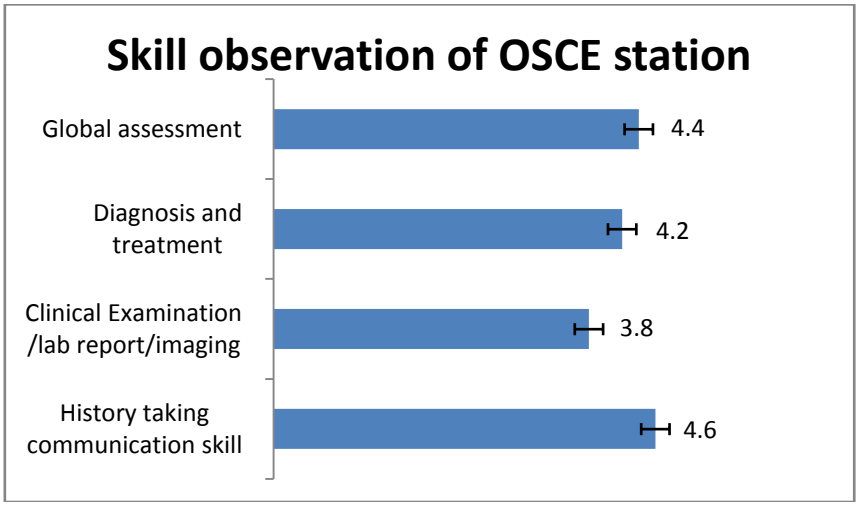

Figure 1: Perception by feedback analysis of objective structured clinical examination Mark sheet template for OSCE station

Table 2: Feedback questionnaire for students and Faculties

S. No.	Questioners	SA	A	Ud	DsA	SdsA
1	Orientation of OSCE session was adequate	64%	34%	1.3%	0.6%	0%
2	OSCE stations were well organized, fair and unbiased	42.6%	50%	6.0%	1.4%	0%
3	OSCE stations covered topic taught/syllabus	50%	40%	8.6%	1.3%	0%
4	Sufficient time was given for each station	34%	50%	11.1%	4.0%	0.6%
5	Questions given in the stations were comprehensible	42%	50%	6.6%	1.3%	1%
6	Stations were observed objective type	64%	34%	1.31%	6%	1.01%
7	OSCE is unbiased, educative and interesting	26%	54%	14%	4%	2%
8	OSCE stations were objective and better for assessing cognitive, psychomotor and affective domain	32%	52%	14%	2.2%	0%
9	OSCE session conduct environment was comfortable	30%	32%	26%	12%	0%
10	OSCE helps in scoring better than traditional assessment methods	46%	42%	9.4%	2.0%	0.6%
11	OSCE helps in learning as well as assessment in CBME	32%	52%	14%	2.0%	0%
12	OSCE is feasible and should be introduced in medicine as an assessment tool	42%	48%	8.0%	2.0%	0%
(Abbreviations: SA: Strongly agree, A: agree, UD: Undecided, DsA: Disagree, SdsA: Strongly disagree)						

Out of this 73% study subjects strongly agreed and 51% agreed, 14.4% were Undecided, 5% Disagreed and 0% students and faculties strongly disagreed respectively showed in figure 2. The significant number were favoring the OSCE as a good assessment tool in subject of medicine in undergraduate curriculum [‘p’ <0.0001]. The feedback results and ground level observations were quite impressive and positive to for implementation of OSCE as a tool of addition examination to measure competence in undergraduate graduate medical education.

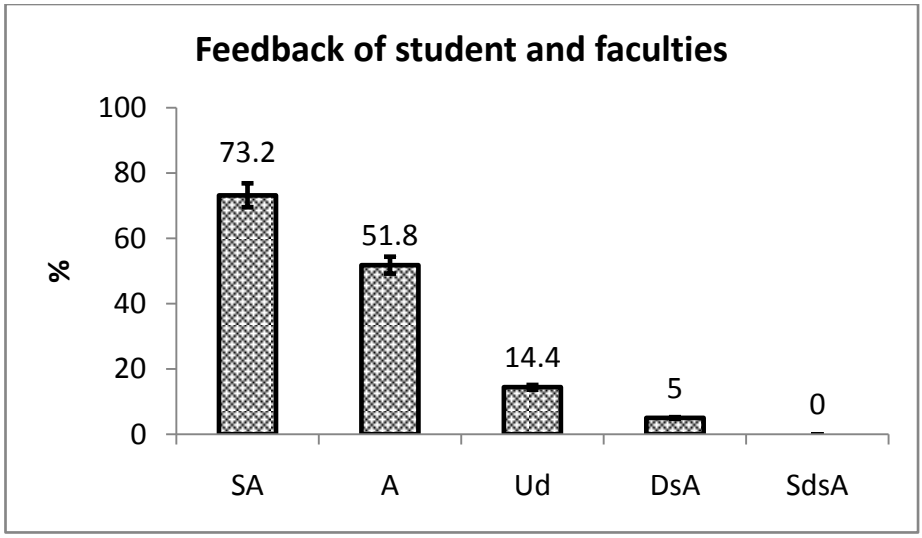

Figure 2: Feedback response of student and faculties [SA: Strongly agree, A: agree, UD: Undecided, DsA: Disagree, SdsA: Strongly disagree]

DISCUSSION

The traditional clinical examinations and the written examinations test a limited range of cognitive and clinical skill. Conceptualizing the acquisition of knowledge, skills, and attitudes as competencies is important because it implies a developmental progression of a medical student from a novice to, ultimately, a proficient and expert clinician. Objective structured clinical examinations (OSCEs) have become popular and now are part of the US Medical Licensing Examination for all US medical graduates. Despite general acceptance of this method, there is debate over the value of OSCE testing compared to more traditional methods [13]. A study was published in the Saudi Medical Journal, which assessed 64 students undergoing their final year surgical clerkship. This study found that the OSCE is a reliable and a valid format for testing clinical skills [14]. Our study showed that OSCE is perceived as a fair assessment tool by both students and faculty members. Mani Mirfeizi, Zahra et al in their descriptive-analytic study conducted on 39 midwifery students’ on 10 different OSCE stations and favored OSCE as a reliable and valid means of evaluating knowledge and clinical practice of midwifery students [15]. Similarly in our study of OSCE assessment, 2080 marks was the highest and 1923 was the lowest score. The overall mean of score of assessment was 126.3 (22.68). Hafsa Raheel et al, Sadia S et al and P AMossey et al concluded that, the OSCE was perceived very positively and welcomed. OSCE was interesting and educative. OSCE was useful in the examination of diagnostic, interpretation and treatment planning skills [16-18]. Similarly majority of faculty and students were favoring OSCE by 5 point Likert scale, as they were exposed to the stations with different clinical real life situation and testing all domains with critical thinking aspect. Siddiqui F Get al

quoted that 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. The students perceived OSCE as a better assessment tool as compared to viva voce. Similarly, in our study students were positive towards attitude of the contents and structure of stations and organization of OSCE session. Therefore, OSCE needs to be supported and the challenges identified should be mitigated by concerned bodies. In this way, the quality of OSCE and satisfaction of students and examiners can be enhanced. The majority of students perceived it to be a meaningful examination and a fair method due to uniformity of tasks and time allocation; they found the scoring to be transparent and objective. The specific and immediate feedback received was appreciated by both students and faculty members [19, 20]. These observations are comparable with our results in which 73% study subjects strongly agreed and 51% agreed respectively in favor of OSCE. Similar to our study Chandra PS et al studied the performance based on the 14-item checklist assessing common elements of any patient-related interaction in 34 different OSCE tasks. They concluded that, OSCE is a convenient, cost-effective training method in psychiatry, with limited demands on resources [21]. The last three studies support the reliability, reproducibility of OSCEs as an assessment tool in medical education. To summarize, our results and comparison with other studies we were fine, we favore conducting OSCE as an additional assessment tool in general medicine studies.

CONCLUSION

This study provided a thorough assessment of students' and faculties' perception on OSCE. There was an overall positive perception towards OSCE by both faculties and students. The result of this study revealed that the students assessed by the OSCE generality satisfied, as indicated by their positive feedback which can be utilized to improve our performance in setting a standardized OSCE. OSCE was perceived to be fairer, uniform, structured and unbiased assessment method by students and examiners and can be used as an additional tool for assessment in both formative and summative assessment. We favor to introduce this method of examination (OSCE) in our setup. Presently, the Indian experience with OSCE is limited and there is need to sensitize the faculties and students.

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