DOI: https://doi.org/10.53350/pjmhs211582235

ORIGINAL ARTICLE

OSCE: An Effective Tool of Assessment for Medical Students

FARRUKH SARFRAZ[1], FAHAD SARFRAZ[2], IMRAN JAWAD[3], MOHAMMAD ZIA-UL-MIRAJ[4], RIZWAN ZAFAR AHMAD[5], JAWAIRIA SALEEM[6]

[1]Assistant Professor, Department of Medical Education, Azra Naheed Medical College, The Superior University Lahore.
[2]Assistant Professor, Department of Medical Education, Islam Medical College, Sialkot.
[3]Professor of Forensic Medicine, University College of Medicine, The University of Lahore.
[4]Director Department of Medical Education, Al-Aleem Medical College Lahore.
[5]Professor of Medicine, Medical Unit-II, Akhtar Saeed Medical and Dental College
[6]Senior Clinical Psychologist, Azra Naheed Medical College, Superior University Lahore.
Correspondence to Dr. Farrukh Sarfraz, Email: drfarrukhsarfraz@gmail.com, Cell: 0322-9111000

ABSTRACT

Background: To assess the competency of a student different tools are used. Since its introduction in 1975 by Dr. Harden and his team, OSCE has gained tremendous strides to assess the clinical competencies. Since 1975 onward OSCE has been very successfully used to assess the clinical competencies of medical student globally. OSCE is an assessment tool in which student is observed for performance of different tasks at specified stations. In the current study perception of medical students about OSCE examination was done which shall give room for positive criticism and further improvement of the system where ever required.

Objective: To expedite view of final year MBBS students of Azra Naheed College about OSCE

Material and Method

Study design: Quantitative, cross sectional study.

Settings: Azra Naheed College, Lahore.

Duration: Six months i.e. 1st July2020 to 31st December 2020

Data Collection procedure: After an informed consent and appropriate briefing, the questionnaire was distributed among the final year medical students of Azra Naheed Medical College. Questionnaire developed by Russell et al was used.

Results: Out of 148 students who participated in the study, 66(45%) students were females and 82(55%) were male. Majority of the students were satisfied with the quality of the exam. Consensus about the quality of exam was that, 29.7% were aware about the nature of the exam, 52.7% were satisfied that the syllabus taught was asked in the exam, 58.1% were satisfied about the time allocation for each station. Majority i.e. 60% considered OSCE an exam of practical nature which is not biased by gender or ethnicity. More than 50% of the students were satisfied with the standard of the exam. At the same time more than 50% students considered essay exam the easiest format of assessment. However, OSCE was considered to be fairest form of assessment 73%.
68.9% perceived that learning is enhanced by MCQs rather than other formats of assessment.

Conclusion: To conclude this study, it is very much clear that the perception of students about OSCE as an assessment tool was very encouraging, as it not only provided them the opportunity to highlight their weaknesses but also helped them to perform well in the exam, manage time during exam and to overcome them stress which influenced their results.

Key words: OSCE, Objective, Examinations, Clinical skills, qualitative analysis

INTRODUCTION

To assess the competency of a student different tools are used[1,2]. A few decades ago long essay questions were used for assessment[3]. With the advent of new teaching strategies, new assessment tools were also developed such as, MCQs, SEQs, OSCE, OSPE etc. It was the hard work of Harden which gave the concept of MCQs, OSCE and many other tools which could be used to assess the competency of a student[4].

Since its introduction in 1975 by Dr. Harden and his team, OSCE has gained tremendous strides to assess the clinical competencies[5]. Millers pyramids of assessment comprises of four levels knows, knows how, shows how and does[6]. The third level i.e. shows how is reflected through OSCE. Since 1975 onward OSCE has been very successfully used to assess the clinical competencies of medical student globally.

The clinical competencies of medical students were assessed through written exams, viva voce, short and long cases in the wards through observation on the patients.

Harden emphasized that written exam can be used to assess the cognitive domain of students, focusing more on this sphere will weaken the psychomotor skills.

In viva voce i.e. oral examination criticism regarding biasness cannot be ruled out[7,8]. OSCE answers all such criticisms, and has been effectively used to assess clinical competencies of medical students[9].

OSCE is an assessment tool in which student is observed for performance of different tasks at specified stations. In the current study perception of medical students about OSCE examination was done which shall give room for positive criticism and further improvement of the system where ever required. It shall also encourage teachers to change assessment tools where required. This assessment tool not only help to assess the clinical skills of students but also provides opportunity to observe behavior of the student.

Rationale of the study: In the early nineties college of physician and surgeons of Pakistan introduced OCSE for assessment of the students. With the success of this instrument as an assessment tool, it was taken up by

PMDC to be further incorporated into different medical colleges and universities. Currently all medical colleges in Pakistan are using this tool to assess the clinical competencies of their students.

We all view this assessment tool as a useful instrument, but the perception of students has seldom been recorded. Literature search have shown few publications within the country to give an opportunity to have good view from student's point of view about this assessment tool. This provides a gap in the study in our context.

Research question: What is the perception of final year MBBS students at Azra Naheed College, Lahore about OSCE as assessment tool?

Objective: To expedite view of final year MBBS students of Azra Naheed College about OSCE.

MATERIAL AND METHOD

Study design: It is a quantitative, cross sectional study

Setting: Azra Naheed College, Lahore.

Study population: 148 final year students of MBBS.

Sampling technique: A purposive sampling technique was used.

Inclusion criteria: Student appearing in the final professional MBBS examination.

Exclusion criteria: Student of any professional examination other than final year was not included in the study.

Instrument: Questionnaire developed by Russell et al was used.

Data analysis: Data was analyzed using SPSS.

RESULTS

Out of 148 students who participated in the study, 66(45%) students were females and 82(55%) were male. The result has been studied under the heading as follows.

Evaluation of OSCE 10 questions

Quality of performing test question 08

Students rating of assessment formats questions 12

All results are discussed below

Evaluation of OSCE

Students evaluated OSCE examination through a set of 10 questions, which covered an ample amount of issues related to all such exams such as fairness of exam, covering all corners of the curriculum, time allocation for each station, stress level during exam.

Table-1 provides a good view about the student's response, two third of the students (n=100, 67.6) expressed their satisfaction about the fairness and knowledge covered during this exam, graphical representation is shown in figure-1

Majority (n=74,50) were not satisfied with the time allocation for each station. Satisfaction level was very good the way the exam was administered (n=114,154). Majority agreed that although the exam was well structured (n=96,129.8) but it was stressful (n=108,73). However, majority did not agree that it is less stressful as compared to other exams (n=68,45.9). It not only compensates other formats of the exam (n=116,78.4) but also covers wide range of clinical skills (n=96,64.9).

Table:1 Students response about OSCE3

Sr #	Question	Agree N(%)	Neutral N(%)	Disagree N(%)	No comments N(%)
1	Exam was fair	100(67.6)	40(54)	4(5.4)	4(5.4)
2	Knowledge was covered adequately	100(67.6)	36(24.3)	12(8.1)	0
3	Adequate time was provided at stations	40(27)	34(23)	74(50)	0
4	Exam was well administered	114(154)	26(35.2)	4(5.4)	4(5.4)
5	Exam was stressful	96(64.9)	24(32.4)	26(35.2)	2(1.4)
6	Exam was well structured	108(73)	26(35.2)	14(9.5)	0
7	Exam reduced failure chances	76(51.4)	42(28.4)	24(16.2)	6(4.1)
8	This exam is less stressful than other format of examination	48(32.4)	32(21.6)	68(45.9)	0
9	This exam compensate other format of exams	116(78.4)	26(17.6)	6(4.1)	0
10	Wide range of clinical skills covered	96(64.9)	32(21.6)	16(10.8)	4(2.7)

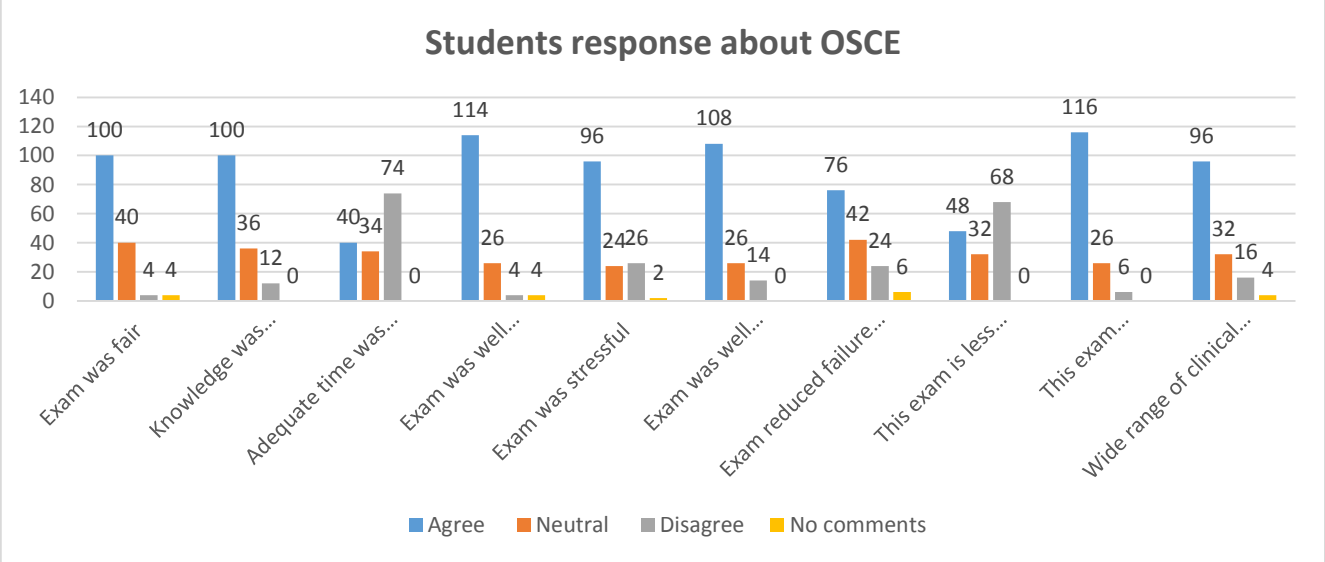

Figure-1

Quality of performance: Majority of the students were satisfied with the quality of the exam. Regarding the nature of the exam only 29.7% were aware. Majority 52.7% were of the view that what was taught was assessed through this exam, 50% were satisfied with the content and context for each station. Results about the quality of the exam is exhibited in table-2 and figure-2.

Table-2 : Quality of performance

Sr#	Question	Not at all N(%)	Neutral N(%)	To great extent N(%)
1	Aware about the nature of exam	34(23)	50(47.3)	62(29.7)
2	Skills assessed according to course taught	14(9.5)	56(37.8)	78(52.7)
3	Adequate time for each station	14(9.5)	48(32.4)	86(58.1)
4	Context of each station appropriate	9(4.1)	65(45.9)	74(50)
5	Instruction at each station clear	10(6.8)	48(32.4)	90(60.8)
6	Task at non-static stations were fair	12(8.1)	56(37.8)	80(54.1)
7	Sequencing was logical	10(6.8)	60(40.5)	78(52.7)
8	Exam provided appropriate learning	12(8.1)	26(17.6)	110(74.3)

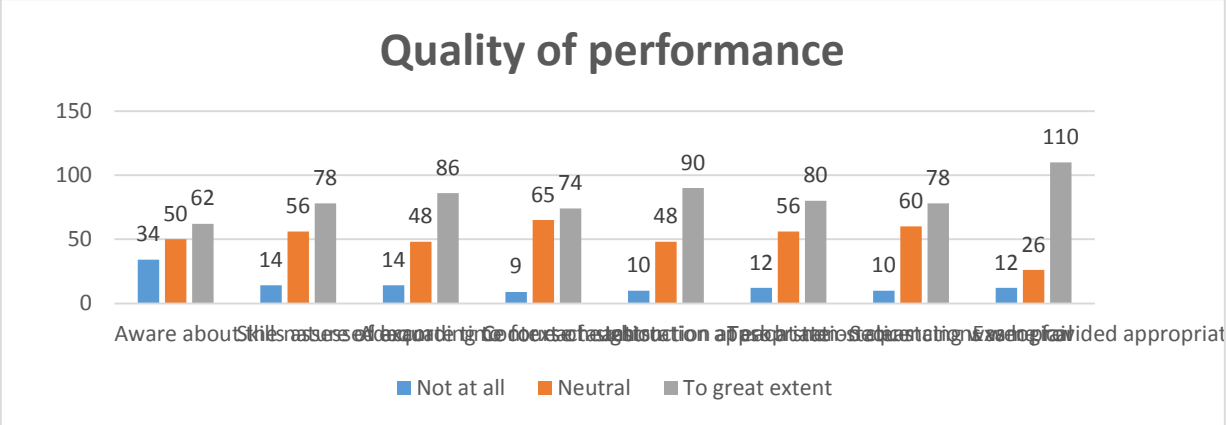

Figure-2

Students rating of multiple assessment formats: Students were briefed about different formats of assessment, based on the perception of students 54.1% of the students perceived essay type exam the easiest, however, 66.2% were in favor of essay type assessment. OSCE was considered to be fairest of all the formats 73%. Majority 68.9% considered that MCQs enhanced their learning skills. All these findings are exhibited in table-3 and figure-3.

Table-3 Students rating of multiple assessment formats

Question-1	**Which of the formats is easiest**		
	Difficult N%	**Undecided N%**	**Easy N%**
MCQ	72(48.6)	46(31.1)	30(20.3)
SAQ/Essay	20(13.5)	48(32.4)	80(54.1)
OSCE	34(23)	48(45.9)	66(31.1)
VIVA	80(54.1)	40(27)	28(18.9)
Question-2	**Which of the formats is fairest**		
	Difficult N%	**Undecided N%**	**Easy N%**
MCQ	14(9.5)	36(24.3)	98(66.2)
SAQ/Essay	16(10.8)	48(32.4)	84(56.8)
OSCE	16(10.8)	24(16.2)	108(73)
VIVA	78(52.7)	48(32.4)	22(14.9)
Question-3	**Which of the formats is fairest**		
	Difficult N%	**Undecided N%**	**Easy N%**
MCQ	24(16.2)	22(14.9)	102(68.9)
SAQ/Essay	40(27)	54(36.5)	54(36.5)
OSCE	20(13.5)	36(24.3)	92(62.2)
VIVA	52(35.1)	48(32.4)	48(32.4)
Question-4	**Which of the formats enhanced learning**		
	Difficult N%	**Undecided N%**	**Easy N%**
MCQ	38(25.7)	22(14.9)	88(59.5)
SAQ/Essay	18(12.2)	32(21.6)	98(66.2)
OSCE	52(35.1)	46(31.1)	50(33.8)
VIVA	78(52.7)	32(21.6)	38(25.7)

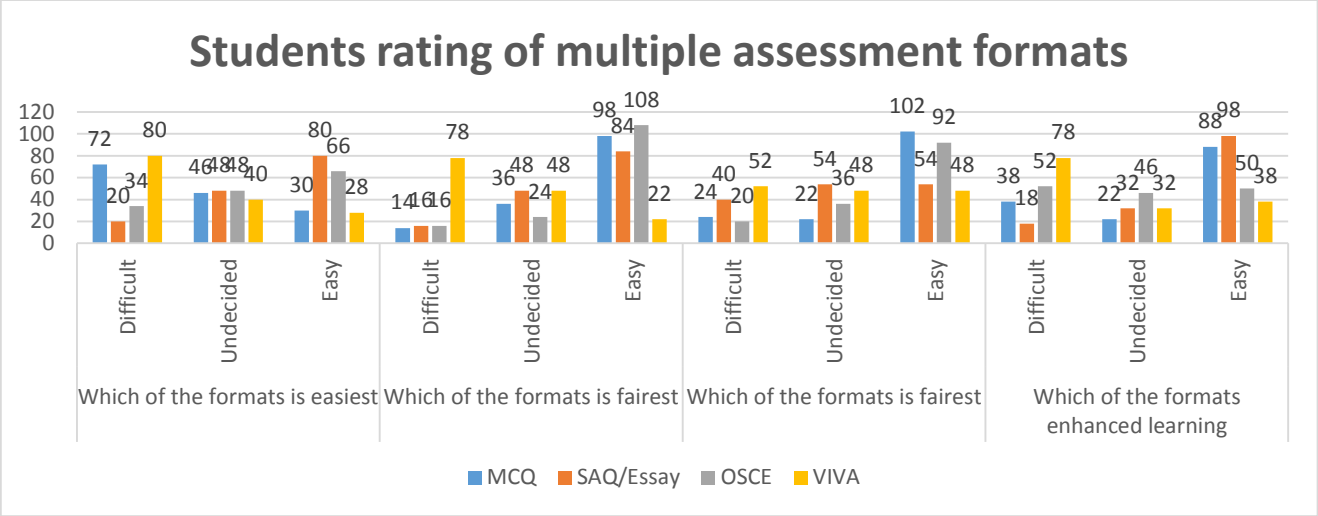

Figure-3

Majority of the students 67.6% were satisfied about the fairness of the exam and the cognition covered, however, 64.9% were stressful about the exam.

Consensus about the quality of exam was that, 29.7% were aware about the nature of the exam, 52.7% were satisfied that the syllabus taught was asked in the exam, 58.1% were satisfied about the time allocation for each station.

Majority i.e. 60% considered OSCE an exam of practical nature which is not biased by gender or ethnicity.

More than 50% of the students were satisfied with the standard of the exam. At the same time more than 50% students considered essay exam the easiest format of assessment. However, OSCE was considered to be fairest form of assessment 73%.

68.9% perceived that learning is enhanced by MCQs rather than other formats of assessment.

DISCUSSION

Since the inception of OSCE as an assessment tool by Dr Harden and his team, it has shown rapid strides and never turned back, with the passage of time and new experiments on this tool it has improved and is expected to follow same pace in the future as well this was supported by Harden RM and Ahmed K in their studies [10,11].

This study at Azra Naheed College, Lahore involving final year MBBS students about their views for clinical assessment using OSCE as a tool was recorded. This helped a lot in the local context as majority of the studies have been conducted in the western world and literature on OSCE as an assessment tool is quite scarce in the subcontinent.

Varkey P, Natt N, Lesnick T, Downing S, Yudkowsky R in their study agreed that OSCE as an assessment tool was viewed from different dimensions by the students. Majority of the students were satisfied that the element of biasness was eliminated, and with good management the quality and fairness of the exam is improved, it also covers reasonably good area of cognition[12].

McWILLIAM PL in his study has stressed about the satisfaction of students that the clinical skills which they have practiced throughout the session were assessed in a well-structured way through OSCE[13].

Hutton M, El-Nemer A and Epstein RM are of the view about the time management students are given for perform given task at each OSCE station. More than 50% of the students were under extreme stress during the assessment, this directed them toward easy assessment ways such as long essay questions. An added advantage pointed out by the students was that this format of assessment compensated other formats of assessment during the same examination[14-16].

This assessment format proved to be an effect way for clinical skill assessment, however, it did not add to their knowledge as compared to MCQs, which improved their cognition level this negative effect was also pointed by Moeen-uz-Zafar Khan BM in his study[17]. The chances of success in this format of assessment is fairly well as compared to other formats of assessment it was also supported by Wallenstein J in his study[18]. This increase in the success rate was due to multiple factors. Students expressed that the format was clearly explained to them before the start of exam, environment was conducive, time allocation for stations was adequate, exam was sequenced and managed in such a way which improved the quality of the exam, it was supported by Iramaneerat C in his study[19].

The Accreditation council for graduate medical education (ACGME) has regarded OSCE as second best tool for assessment of clinical skills[20].

Beckert L in his study supports that OSCE has improved the overall result of the students as it has proved to be an effective assessment tool and it has compensated the other formats of the same exam[21].

Turner JL has also supported the quality and fairness of the OSCE is above rest of the formats of the exam which has exhibited the reliability and validity of the exam[12,22].

Majority of the students were satisfied with the assessment of OCSE because according to their perception assessment with the traditional system was poor and judgment of the competencies of the student was not on equal bases.

Bokken L, Rethans J-J, Scherpbier AJ, van der Vleuten CP in their study emphasized same points which were elaborated in our study, that OSCE covered a wide range of cognition and psychomotor skills than the other formats of exams, to an extent it also highlighted their weakness and strengths which enabled them to improve for future assessment[23].

OSCE provided them the opportunity to manage the exam, this was due to pre-exam awareness about the exam as they were well aware about the nature of the exam, the time allowed for each station this was supported by a study conducted by Haider I, Khan A, Imam SM, Ajmal F, Khan M, Ayub M [24]. However, all such factors did not relieve the stress of the students during exam.

Overall the students were very much satisfied by this examination system and wished that such formats of examination should be promoted and students and staff should be encouraged and facilitated to continue with such systems of assessment.

CONCLUSION

To conclude this study, it is very much clear that the perception of students about OSCE as an assessment tool was very encouraging, as it not only provided them the opportunity to highlight their weaknesses but also helped them to perform well in the exam, manage time during exam and to overcome them stress which influenced their results.

REFERENCE

1. Duffy K. Failing students: a qualitative study of factors that influence the decisions regarding assessment of students' competence in practice: Citeseer; 2003.
2. Ilic D. Assessing competency in evidence based practice: strengths and limitations of current tools in practice. BMC medical education. 2009;9(1):53.
3. Pepple DJ, Young LE, Carroll RG. A comparison of student performance in multiple-choice and long essay questions in the MBBS stage I physiology examination at the University of the West Indies (Mona Campus). Advances in physiology education. 2010;34(2):86-9.
4. Shumway JM, Harden RM. AMEE Guide No. 25: The assessment of learning outcomes for the competent and reflective physician. Medical teacher. 2003;25(6):569-84.
5. Munoz LQ, O'Byrne C, Pugsley J, Austin Z. Reliability, validity, and generalizability of an objective structured clinical examination (OSCE) for assessment of entry-to-practice in pharmacy. Pharmacy Education. 2004;5.
6. Cruess RL, Cruess SR, Steinert Y. Amending Miller's pyramid to include professional identity formation. Academic Medicine. 2016;91(2):180-5.
7. Davis MH, Karunathilake I. The place of the oral examination in today's assessment systems. Medical Teacher. 2005;27(4):294-7.
8. Rehman R, Syed S, Iqbal A, Rehan RR. Perception and performance of medical students in Objective structured practical examination and viva voce. Pakistan Journal of Physiology. 2012;8(2):33-6.
9. Khattab AD, Rawlings B. Assessing nurse practitioner students using a modified objective structured clinical examination (OSCE). Nurse Education Today. 2001;21(7):541-50.
10. Harden RM, Gleeson F. Assessment of clinical competence using an objective structured clinical examination (OSCE). Medical education. 1979;13(1):39-54.
11. Ahmed K, Miskovic D, Darzi A, Athanasiou T, Hanna GB. Observational tools for assessment of procedural skills: a systematic review. The American Journal of Surgery. 2011;202(4):469-80. e6.
12. Varkey P, Natt N, Lesnick T, Downing S, Yudkowsky R. Validity evidence for an OSCE to assess competency in systems-based practice and practice-based learning and improvement: a preliminary investigation. Academic Medicine. 2008;83(8):775-80.
13. McWILLIAM PL, Botwinski CA. identifying Strengthsandweaknessesin theutilizationofobjective Structured Clinical Examination (osce) in anursing Program. Nursing education perspectives. 2012;33(1):35-9.
14. Hutton M, Coben D, Hall C, Rowe D, Sabin M, Weeks K, et al. Numeracy for nursing, report of a pilot study to compare outcomes of two practical simulation tools–An online medication dosage assessment and practical assessment in the style of objective structured clinical examination. Nurse Education Today. 2010;30(7):608-14.
15. El-Nemer A, Kandeel N. Using OSCE as an assessment tool for clinical skills: nursing students' feedback. Australian Journal of basic and Applied sciences. 2009;3(3):2465-72.
16. Epstein RM. Assessment in medical education. N Engl J Med. 2007;2007(356):387-96.
17. Moeen-uz-Zafar Khan BM. Evaluation of modified essay questions (MEQ) and multiple choice questions (MCQ) as a tool for assessing the cognitive skills of undergraduate medical students. International journal of health sciences. 2011;5(1):39.
18. Wallenstein J, Heron S, Santen S, Shayne P, Ander D. A core competency–based objective structured clinical examination (OSCE) can predict future resident performance. Academic Emergency Medicine. 2010;17:S67-S71.
19. Iramaneerat C, Yudkowsky R, Myford CM, Downing SM. Quality control of an OSCE using generalizability theory and many-faceted Rasch measurement. Advances in Health Sciences Education. 2008;13(4):479.
20. Swick S, Hall S, Beresin E. Assessing the ACGME competencies in psychiatry training programs. Academic Psychiatry. 2006;30(4):330-51.
21. Beckert L, Wilkinson TJ, Sainsbury R. A needs-based study and examination skills course improves students' performance. Medical Education. 2003;37(5):424-8.
22. Turner JL, Dankoski ME. Objective structured clinical exams: a critical review. Fam Med. 2008;40(8):574-8.
23. Bokken L, Rethans J-J, Scherpbier AJ, van der Vleuten CP. Strengths and weaknesses of simulated and real patients in the teaching of skills to medical students: a review. Simulation in Healthcare. 2008;3(3):161-9.
24. Haider I, Khan A, Imam SM, Ajmal F, Khan M, Ayub M. PERCEPTIONS OF FINAL PROFESSIONAL MBBS STUDENTS AND THEIR EXAMINERS ABOUT OBJECTIVE STRUCTURED CLINICAL EXAMINATION (OSCE): A COMBINED EXAMINER AND EXAMINEE SURVEY. Journal Of Medical Sciences. 2016;24(4):206-11.