

Objective Structured Clinical Examination vs Traditional Clinical Examination - Evaluation of Students Perception at CMNHS, Fiji National University

Ashnita Ashvini Krishna¹, Alok Kumar Dubey²

How to cite this article:

Ashnita Ashvini Krishna, Alok Kumar Dubey/Objective Structured Clinical Examination vs Traditional Clinical Examination - Evaluation of Students Perception at CMNHS, Fiji National University/Journal of Global Medical Education and Research. 2020;3(2):39-43.

Abstract

Aim: The College of Medicine, Nursing and Health Sciences (CMNHS), Fiji National University (FNU) implemented the Objective Structured Clinical Examination (OSCE) for the final year MBBS in 2019. This study was set out to explore student acceptance of the OSCE as an assessment.

Methods: This was a cross-sectional survey using a 33-item self-administered questionnaire that was completed by 74 medical interns. Main outcome measures were student perception of examination attributes including the quality of instructions and organization, the quality of performance, authenticity and transparency of the process and the usefulness of OSCE as an assessment instrument compared to the Traditional Clinical Examination (TCE).

Results: There was overwhelming dissent of the OSCE with respect to the comprehensiveness (33%), fairness (44%) and authenticity of the required tasks (51%). Majority felt that it was an intimidating (58%) and strong anxiety producing experience (85%). Concerns were raised regarding the inadequacy of time for expected tasks.

Conclusion: The OSCE was perceived negatively by the students. Concerns and challenges regarding an assessment that is overwhelmingly complex, resource and time intensive can be overcome with better preparation of both the students and examiners.

Key words: objective structured clinical examination, student perception and traditional clinical examination.

Key Messages: What is already known: OSCE is used to provide assessment in medical institutes worldwide. What this paper adds: is whether OSCE can be reliably used as a tool of assessment for medical students graduating from Pacific Island medical schools.

Introduction

The Objective Structured Clinical Examination (OSCE) is an approach to student assessment in which aspects of clinical competence are evaluated in a comprehensive, consistent and structured manner, with close attention to the objectivity of the process⁽¹⁾.

The OSCE was introduced by Harden in 1975⁽²⁾.

Since its inception, the OSCE has been increasingly used to provide formative and summative assessment in various medical disciplines world over.

The College of Medicine, Nursing and Health Sciences (CMNHS), Fiji National University (FNU) implemented the first ever Objective Structured Clinical Examination (OSCE) for the final year MBBS students in 2019 as a formal method of assessment. Students and faculty were exposed for the first time to a relatively new assessment instrument in which aspects of competence including the judicious use of communication, history-taking and technical skills were assessed in a structured formal manner.

The rationale for change from a traditional written exit exam was the dissatisfaction expressed by various governments of Pacific island countries

Author's Affiliation: ¹Doctor, Department of Paediatrics, Colonial War Memorial Hospital, Suva, Fiji Islands 679. ²Professor, Department of Paediatrics, College of Medicine, Nursing and Health Sciences, Fiji National University, Suva, Fiji.

Correspondence and Reprint Requests: Ashnita Ashvini Krishna, Doctor, Department of Paediatrics, CWM Hospital (Colonial War Memorial Hospital), Suva, Fiji Islands 679.

E-mail: krish.ash26@gmail.com

about the lack of products with adequate proficiency and competencies to function as independent clinicians.

This study was designed to evaluate student overall perception of the OSCE, determine student acceptability of the process and provide feedback to enhance further development of the assessment.

Methods

The OSCE was held over two days, each comprising 12 active stations which assessed student's practical skills that are needed to be a safe and competent intern covering history taking, examination, investigations, procedures, management and professional values across the systems of cardiovascular, respiratory, abdominal, genitourinary, nervous, endocrine, musculoskeletal, skin, mental health, syndromes and eye. With the inclusion of three strategically placed rest stations, to reduce student and patient fatigue, all students completed the circuit over a 135-minute period. Each station was seven minute long comprising one and half minutes reading time outside the station and five and half minutes to complete task inside the station. The stations were run in duplicate so 30 students sat the exam in one session. A total of 91 students sat the exam.

Examiners were full time faculty and honorary staff of CMNHS who were adequately trained. Several observers were enlisted from the Ministry of Health, CMNHS and externally to ensure that the exam was fair and to provide feedback on areas in need of improvement.

Patients whether real or simulated were briefed on their script so they were standardized across the two streams of OSCEs run simultaneously.

The pass mark was set as the borderline plus one standard error of measurement for the 24 stations. A yellow card was issued to the student if an examiner assessed the student to have done something unsafe. Guidelines were provided to the examiners on what constitutes unsafe practice.

The first day of OSCE comprised 12 active stations. Students who obtained the pass mark plus two standard errors of measurement overall on the 12 stations, pass a minimum of eight out of 12 stations and do not receive any yellow cards were not required to sit the second part of the OSCE on day two. However due to the excessive number of yellow cards issued, this criterion was omitted after the analysis on day one.

Students who did not attain the standard, sat the full OSCE to complete all 24 stations the next day.

This study was conducted in July 2020. Three groups of students participated in the process during their respective internship rotations. They were also apprised for the valuable contribution they could make towards improving the assessment and encouraged to participate in the evaluation.

A cross-sectional survey using a 33-item self-administered questionnaire was completed by each student. Students were asked to evaluate the content, structure, and organization of the OSCE, rate the quality of performance and objectivity of the OSCE process, comment on validity and reliability of OSCE and to give their opinion on the usefulness of the OSCE as an assessment instrument compared to the traditional exams which they had experienced (multiple choice questions, long and short answer questions, long and short cases).

Basic statistical analysis of the Likert items was conducted by calculating frequencies, means and standard deviations. Qualitative analysis was done through a form of content analysis by identifying themes in student responses and grouping them according to thematic content.

Ethics approval

No informed consent or ethical approval was obtained formally from the College ethics & research committee, as this was viewed as an ongoing activity merely to improve the assessment process. This did not involve collection of any information pertaining to the patient and did not breach any confidentiality of information as regards any one's health and disease. Participation was on a voluntary basis.

Results

OSCE Evaluation (Table 1)

74 students responded, representing 94% of those to who the questionnaire was distributed.

Majority of students agreed that the OSCE covered a wide range of knowledge (59.5%) and clinical skills (55.4%) however only 29.7% said that the exam was well administered while 24.3% felt the exam was well structured and sequenced.

54.1% agreed that the assessment process allowed them to compensate in some areas and identify weaknesses and gaps in their competencies (73%).

Less than half the students (44.6%) believed that

the assessment was fair. Only 43.2% were aware of the nature of examination and even fewer (33.8%) were aware of level of information required at each station. Only 17.6% thought that the examination process minimized their chances of failing.

58% of the students found OSCE to be intimidating and as equally or more stressful as other exams (85%). More than half of them (59.5%) felt they needed more time at the stations.

Table 1: Student' Perception about OSCE

OSCE Evaluation	Agree %	Neutral %	Disagree %
1. OSCE is fair	44.6	43.2	12.2
2. Wide knowledge area is covered	59.5	21.6	18.9
3. Need more time at stations	59.5	28.4	12.2
4. Exam well administered	29.7	43.2	27
5. Exam well structured and sequenced	24.3	55.4	20.3
6. Exam minimized chance of failing	17.6	33.8	48.6
7. OSCE less stressful than other exams	14.9	18.9	66.2
8. Allows students to compensate in some areas	54.1	32.4	13.5
9. Highlighted areas of weakness	73	24.3	2.7
10. Exam is intimidating	58.1	33.8	8.1
11. Students are aware of level of information needed	33.8	27	39.2
12. Wide range of clinical skills covered	55.4	24.3	20.3
Quality of performance testing			
13. Fully aware of nature of exam	43.2	32.4	24.3
14. Tasks reflect those taught	51.4	31.1	17.6
15. Time at each station was adequate	21.6	28.4	50
16. Setting and context at each station feels authentic	36.5	44.6	18.9
17. Instructions are clear and unambiguous	24.3	40.5	35.1
18. Tasks asked to perform are fair	62.2	32.4	5.4

19. Sequence of stations are logical and appropriate	36.5	44.6	18.9
20. Exam provides opportunities to learn	75.7	14.9	9.5
Perception of Validity and Reliability			
21. OSCE exam scores provide true measure of essential clinical skills	29.7	32.4	37.8
22. OSCE scores are standardized	31.1	55.4	13.5
23. OSCE is a practical and useful experience	70.3	16.2	13.5
24. Personality, ethnicity and gender of student will not affect OSCE scores	54.1	25.7	20.3

Performance Testing (Table 1)

51.4% agreed that the tasks asked to perform were fair. Less than half (43.2%) felt they were well oriented about the exam and just a little over (51.4%) felt that the required tasks were consistent with the actual curriculum that they were taught. Half of them were not satisfied with the time allocation for each station.

Only 36.5% agreed that the content reflected real life situations and just a quarter thought instructions were clear and unambiguous. Very few (36.5%) were satisfied with the sequence of stations but 75.7 % agreed that the exam provides opportunities to learn.

Perception of validity and reliability (Table 1)

More than half of the students were unsure of the OSCE scores being standardized and only 29.7% believed their scores were an actual reflection of their clinical skills yet majority felt it was practical and that gender, personality or ethnicity would not affect OSCE scores.

Comparing assessment formats

Majority of the students (78.7%) stated OSCE was a more objective form of assessment but 51.4% felt the traditional exams were easier to pass yet most of these students preferred OSCE as an assessment of clinical competence.

Qualitative data

Students were asked open ended questions related to positive and negative aspects of both OSCE with suggestions for improvement. The responses were grouped by thematic content.

Positive attributes of OSCE included the wide range of topics covered. Students felt this exam gave them an opportunity to better prepare for real life situations. Students also reaffirmed that the assessment was objective. Some indicated that OSCE helped to motivate them, drive the learning process, better equip their clinical skills and mold them into better clinicians.

Students felt there were a lot of technical problems with the OSCE including poor organization and structure, unclear instructions, inadequate time provision and the use of yellow card to mark them unsafe. They felt the exam was very stressful and at the same time intimidating.

Suggestions for improvement included increasing the time at each station and omitting the reading time from this, ensuring adequate instructions, having a mock exam prior to final exams. Students strongly suggested the yellow card system be removed. Some also suggested that the exam be video recorded to increase objectivity and permit review if need be. Others mentioned that the pass mark be 50% rather than the addition two standard errors of measurement that was used.

Discussion

Students perceived that the OSCE did not have good construct validity. This was evident by the unfavorable responses concerning transparency, fairness of the examination process and the lack of structure and proper administration. However there are previous studies which showed high level of acceptance of the OSCE by the students^{3,4}. A lot of them expressed uncertainty about the exams structure and sequence but this is well understood as this was the first time they sat such an exam.

Most felt while the examination was stressful and intimidating, it was an enjoyable learning experience. Literature shows that OSCE is a strong anxiety producing experience but as the assessment begins, the anxiety tends to decrease and the student generally performs well⁵.

Majority of the students perceived that the OSCE was fair but an equal number showed uncertainty on this question. This finding was contrary to studies done at various medical schools where most students were definite about the fairness of the exam^{3,4}. Although student views on fairness may not be consistent with published literature, the impact on acceptability of the tool should be noted.

A good number of students offered constructive

criticism of the structure and organization of the exam. They felt there was inadequate time at some stations. Though faculty might perceive this response to be due to inadequate preparation for the examination, this is invaluable feedback that should facilitate a critical review and modification of conduct of the examination in the upcoming years.

The above findings are a valid representation of student opinion which is ensured by the high student response rate. Student perception may however be influenced by anxiety and lack of confidence associated with a totally new form of assessment. This study was conducted 7 months after the examination hence the timing of inquiry may not be a factor affecting response. Differences in assessors could however have influenced the interpretation of results of open ended responses.

Validity, reliability, objectivity and practicability must be considered in the use of any method of assessment. The students in this study did not consider OSCE to be more valid than TCE as they felt they were assessed on different patients. Some studies suggest that OSCE be combined with TCE to make overall assessment better⁶.

Results of a similar study (R Singh, pers. comm., 2020) conducted amongst the examiners who participated in the OSCE at CMNHS concluded majority of them agreed that the examination was fair, covered a wide range of clinical skills and knowledge, was well-organized and well-administered, students were aware of the level of information needed, tasks asked to perform at each station were fair, and the OSCE was a standardized examination for all students. However examiners felt that the simulated patients did not portray real clinical situations and that OSCE scores did not truly reflect competence in clinical skills. A similar response was displayed in a recent study conducted at the University of West Indies⁷.

Conclusion

The OSCE is developed to reduce bias in the assessment of clinical competence but it is not without pitfalls. It is nearly impossible to have an assessment that satisfies all the criteria of a good test however to make an OSCE successful, requires careful attention and organization.

Student participation in the evaluation and acceptance of OSCE as a form of assessment is encouraging. Their acceptance will be more favorable for assessment formats that they see as

transparent, authentic and valid with unambiguous instructions. Given the unfavorable responses from students we suggest need for improvement in organization, administration, information and training. However it also sends a clear message to the students that the achievement of overall competence is imperative to clinical practice.

Examiners opinions are also paramount as they play a critical role in executing this complex, resource and time intensive assessment.

This study concludes a divergence in opinion among students and examiners indicating the need for further attention to improve the standard and quality of this potentially overwhelming process before it is adopted as a standardized tool of assessment for the final year medical students in the Pacific.

References

1. Harden RM. What is an OSCE? *Med Teach* [Internet]. 1988 Jan 3 [cited 2020 Aug 2];10(1):19-22. Available from: <http://www.tandfonline.com/doi/full/10.3109/01421598809019321>.
2. Harden RM, Stevenson M, Downie WW, Wilson GM. Assessment of clinical competence using objective structured examination. *Br Med J* [Internet]. 1975 Feb 22 [cited 2020 Aug 2];1(5955):447-51. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/1115966>.
3. Ameh N, Abdul MA, Adesiyun GA, Avidime S. Objective structured clinical examination vs traditional clinical examination: An evaluation of students' perception and preference in a Nigerian medical school. *Niger Med J* [Internet]. 2014 Jul [cited 2020 Jun 29];55(4):310-3. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/25114366>.
4. Pierre RB, Wierenga A, Barton M, Michael Branday J, Christie CD. BMC Medical Education Student evaluation of an OSCE in paediatrics at the University of the West Indies, Jamaica. 2004 [cited 2020 Jun 29]; Available from: <http://www.biomedcentral.com/1472-6920/4/22>.
5. Allen R, Heard J, Savidge M, Bittergle J, Cantrell M, Huffmaster T. Surveying Students' Attitudes During the OSCE. *Adv Health Sci Educ Theory Pract* [Internet]. 1998 [cited 2020 Aug 2];3(3):197-206. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/12386441>.
6. Wani PD. Traditional clinical examination vs objective structured practical examination in human physiology: Examiner's bias. *Int J Med Sci Public Heal Online* [Internet]. 2015 [cited 2020 Jul 30]; Available from: <https://pdfs.semanticscholar.org/e029/5ee9ce2a97df414cd62ffc1fb869ea7bc47d.pdf>.
7. Azim Majumder A, Kumar A, Krishnamurthy K, Ojeh N, Adams OP, Sa B. An evaluative study of objective structured clinical examination (OSCE): students and examiners perspectives. *Adv Med Educ Pract* [Internet]. 2019 Jun 5 [cited 2020 Aug 9];Volume 10:387-97. Available from: <https://www.dovepress.com/an-evaluative-study-of-objective-structured-clinical-examination-osce-peer-reviewed-article-AMEP>.