

Introduction of OSCE for clinical assessment in obstetrics and gynaecology in Hue, Vietnam

Jeffrey Smith¹, Marya Plotkin², Truong Quang Vinh³, Cao Ngoc Thanh³, Ngo Van Huu⁴,
Nguyen Thi Thu Ha⁴, Ton van der Velden⁴

Introduction

This paper presents a case study of the new introduction of a recognized assessment methodology, the Objective Structured Clinical Exam (OSCE), into the Hue College of Medicine and Pharmacy (HCMP) in Hue, Vietnam. Following introduction of the OSCE, students pass rates successively improved with each new group of students and new application of the assessment. Discussions with both students and faculty indicate that the new assessment methodology, combined with new learning resources for students, has positively impacted students' learning, especially of clinical skills.

Background

There has been substantial improvement in medical education in Vietnam in the last 10 years and medical education has become more comprehensive and of a higher academic rigor (Hoat, 2007). In addition to updating teaching methods and incorporating internationally recognized standards of medical education (WFME Medical Education Standards, 2008) into curricula, schools have begun to look at the acquisition of clinical skills that students will need upon graduation. (Luu, 2008).

Previous revisions to medical curricula and improvements in teaching methodologies in Vietnam have largely focused on the didactic learning of students.

At HCMP, clinical learning, and clinical skill development in particular, was seen as needing improvement. Time spent on the ward in the clinical rotations in Obstetrics and Gynaecology was limited, not optimally structured and typically shared with nursing and midwifery students, resulting in groups of up to 40 students on a ward at the same time. Students and teachers found the learning environment to be difficult due to overcrowding and a lack of standardization and interaction between students and clinical preceptors.

In recent years, in conjunction with Pathfinder International and JHPIEGO, (Johns Hopkins Program for International Education in Gynaecology and Obstetrics) HCMP has made efforts to improve the teaching of clinical skills to medical students in their 4th and 6th year. From 2002 – 2006, new clinical teaching sites at Hai Lang District Hospital, Hue City Hospital and Hue Reproductive Health Centre were added to expand the number of clinical settings for the Obstetrics and Gynaecology rotation. Prior to this, clinical teaching was predominantly at the Hue Central Hospital. A reproductive health skills laboratory was opened and students were provided with clinical learning guides, checklists, and self-directed learning materials for Obstetrics and Gynaecology. Core clinical skills at the main clinical teaching sites were strengthened in line with national clinical standards, teaching skills of faculty and preceptors were improved, and clinical experience logbooks were introduced. Finally, in 2006, the OSCE was introduced for medical students in their 4th year Obstetrics and Gynaecology rotation.

The OSCE represented a significant change in the way the faculty assessed student clinical skills. Previously, student assessment consisted of a written knowledge examination and verbal

¹JHPIEGO, Bangkok, Thailand

²JHPIEGO, Baltimore, Maryland, USA

³Hue College of Medicine and Pharmacy, Hue, Vietnam

⁴Pathfinder International, Hanoi, Vietnam

description of management of a randomly selected clinical case. Both students and teachers recognized that this assessment method was not objective, provided a less than accurate assessment of student

OSCE, first introduced by Harden and Gleeson in 1979 (Harden, 1979), is a simulated recreation of a clinical encounter, typically with models or standardized simulated patients. The student's behaviour is closely observed and scored according to standard checklists. Setting up and implementing OSCE has been described elsewhere (Selby, 1995). OSCE, first adopted for use in North America, expanded to UK and Europe in the 1990's, and it is now a principal method of clinical skills assessment for both medical schools and licensure boards in parts of North America, Europe, Australia and New Zealand. In Asia, OSCE has been introduced in several universities in Taiwan, Malaysia and Sri Lanka. Its application in Asian countries with more limited resources is less well documented.

In terms of test qualities, OSCE has been found to have modest to sufficient validity as a testing method. (Barman, 2005; Caraccio, 2000; Merrick, 2000; Auewarakul, 2005). Its reliability is determined mainly by the number of stations, with more stations increasing the reliability (Barman, 2005; Sloan 1995; Joorabchi, 1991).

In 2006, 22 members of the faculty of the HCMP were trained in the application of OSCE. The faculty was guided in developing clinical scenarios, structured marking schemes, guides for simulated patients and instructions for students. Based on the curriculum and the priorities of the faculty, a set of 8 skills were selected for assessment. Inter-rater reliability was discussed and improved through simulated clinical practice to help achieve consensus on the proper performance of the skill and the content of the standardized marking scheme. Efforts were made during piloting and implementation to be sensitive to cost considerations in a resource limited academic environment.

Students were oriented to the OSCE through formal meetings and written guidance, and a description of the OSCE was included in the student orientation to

knowledge, and did not assess clinical competency. Students reported being frustrated by the subjective nature of the exam.

the clinical rotation. In September 2006 a passing score on the OSCE became necessary to pass the Obstetrics and Gynaecology rotation.

Findings

Student performance on the OSCE

The OSCE has been applied four times for medical students in the Obstetrics and Gynaecology rotation at HCMP during the 2006-2007 academic year. These four successive rotations of students ranged in size from 47 to 59 students (total number of students assessed was 216).

OSCE stations were created for eight clinical skills, as noted in Table 1. The exam had 10 stations and each student rotated through 5 per exam. All students were assessed on pelvic examination and ANC, and then randomly assigned to 3 additional stations. The overall application of the OSCE was not substantially altered during the academic year, allowing comparison between the successive applications of the OSCE.

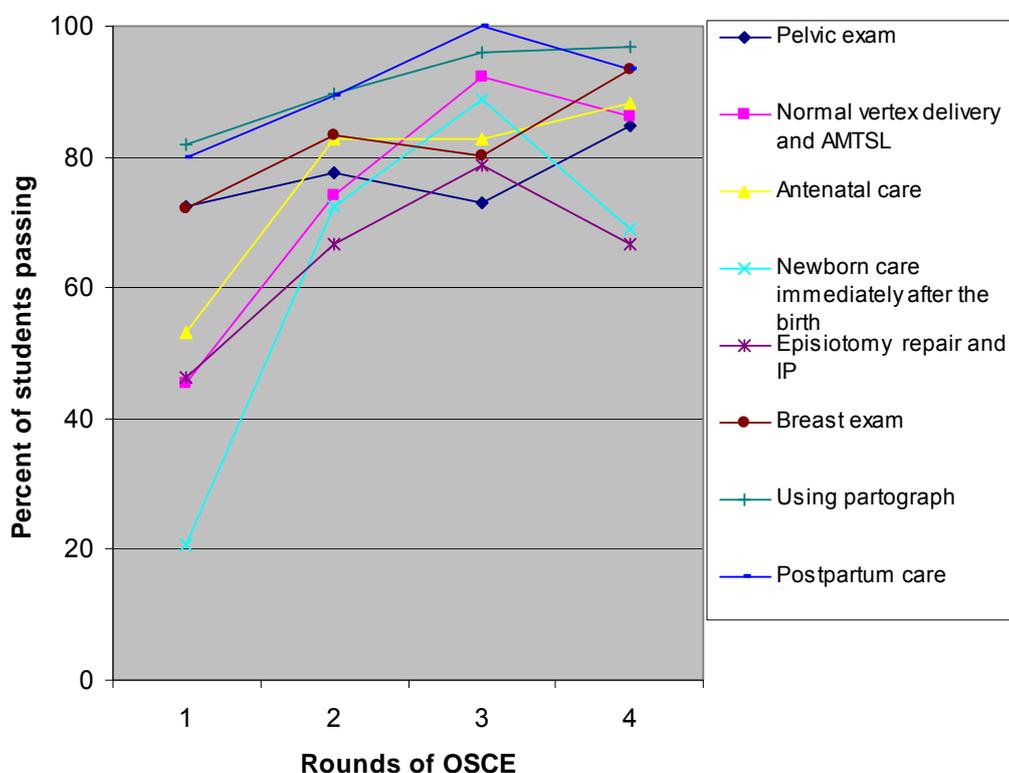
The number of students who passed the OSCE consistently increased with each application. For some skills, the increase was dramatic (such as newborn care immediately after birth and normal vertex delivery) while in others it was subtle (pelvic exam, use of partograph). Table 1 and Figure 1 show the increasing percentage of students passing each OSCE skill station with successive administrations of the exam.

There was little variance between the passing scores of all stations. With each successive round, however, a higher proportion of students passed the OSCE. We theorize that the introduction of the new assessment methodology, coupled with the improved learning environment, improved students' enthusiasm for learning and heightened their sense of responsibility for learning clinical skills. To further investigate these trends, focus group discussions were held with both faculty and students.

Table 1: Percentage of students passing OSCE stations, by skill

| Skills | Percentage of students passing the skill station | | | | |
|--|--|-----------------------|-----------------------|-----------|----------------------|
| | 1 st round | 2 nd round | 3 rd round | 4th round | All rounds (average) |
| Pelvic exam (n=216) | 72.4 | 77.6 | 73.1 | 84.8 | 78.3 |
| Normal vertex delivery and Active Management of Third Stage of Labor (n=104) | 45.5 | 74.1 | 92.3 | 86.2 | 76 |
| Antenatal care (n=216) | 53.2 | 82.8 | 82.8 | 88.2 | 75.5 |
| Newborn care immediately after the birth (n=109) | 20.8 | 72.4 | 88.9 | 69 | 64.2 |
| Episiotomy repair and infection prevention (n=114) | 46.2 | 66.7 | 78.6 | 66.7 | 64.9 |
| Breast exam (n=110) | 72.0 | 83.3 | 80.3 | 93.3 | 82.7 |
| Labor monitoring using partograph (n=107) | 81.8 | 89.7 | 96 | 96.7 | 91.6 |
| Postpartum care (n=103) | 80 | 89.3 | 100 | 93.3 | 91.3 |

Figure 1: Increasing percentage of students passing the OSCE examination



Student Perceptions on Learning and the OSCE

Structured focus group discussions (FGDs) were held with students who had just completed the rotation in the department to qualitatively understand the impact of the OSCE examination on student learning. Two FGD were conducted with 9 students in one group and 11 in the other. This represents approximately 10% of all students completing the Obstetrics and Gynaecology rotation in a given academic year. The students were recruited for the FGD by simple invitation. The focus groups were moderated by both Vietnamese and American colleagues, conducted in Vietnamese, recorded, and transcribed by a designated professional translator. Transcriptions were translated into English.

Impact on learning

Overall, students agreed that the introduction of OSCE as an assessment methodology changed the way they learned and approached learning. Some students noted that studying for OSCE evaluations was easier than for traditional examinations, because the requirements for passing the exam (the study guides) were clear, and because the exam was limited to the 8 clinical competencies.

Students noted that the OSCE helped them focus on acquisition of clinical competencies more than previous assessments.

One student described “with OSCE, students have paid more attention to clinical skills.”

A number of students reported that OSCE made them more active participants: “for OSCE we are more active in learning, OSCE helped me much in my clinical practice. It guided me very clearly in all steps: asking questions and doing the examination”.

Alternatively, some students thought that the introduction of the OSCE could lead to rote learning since the checklist is defined “We ask a question but don’t need to know why we ask that” and “...the OSCE is very straight and you can learn by heart (automatically).” Some students worried that the focus on the clinical competency might come at the detriment to learning the theory underpinning the competency.

It appears that some students understood how the new assessment methodology impacts learning: “The long-term objective of OSCE is to help you perform the clinical skills well. The short term one is to have an objective assessment; the other objective is to motivate your clinical learning.”

Factors enabling success on the OSCE

Students were asked to rate, on a scale of 1 – 5 (1 being of low value, 5 being highly valuable) how useful the learning resources and environments were in preparation for the OSCE. This information (an average score between the two FGDs) is presented in Table 2.

Table 2: Students’ rating of learning resources and environments for preparation for the OSCE

| Learning Resources and Environments | Score |
|---|---|
| Clinical skills laboratories | 4.5 |
| Clinical teaching sites | Hai Lang Hospital: 1.5 Hue Central Hospital: 4 |
| Faculty | 4 |
| Clinical Preceptors | 1 |
| Clinical skills checklists / learning guides | 5 |
| Feedback from other students who had taken the OSCE | 4 |
| Mentorship from other students | 5 |

Students felt that skills labs and clinical checklists were among the best preparation for the OSCE. Both groups specifically recommended that the skills labs be utilized before progression to the clinical areas. Students also stressed the importance of mentorship from other students who had already passed through the rotation and taken the OSCE.

Students' views about faculty support in preparation for the OSCE were mixed. Some felt that teachers (faculty) were not as available as they would like during preparation for the OSCE: "teachers are not available, so we ask friends." A number of students remarked that some teachers were not consistent in the instruction they provided on the clinical competencies.

There was variation in the score given to preceptors. According to students, preceptors varied among the clinical teaching sites. One student said, "...when we are learning there (clinical teaching site), mainly we study by ourselves."

Overall, students feel the OSCE is a "fair" examination method: more so than other types of examination. Most agree that: "OSCE is more objective than traditional method" and better reflects a student's learning and his/her mastery of clinical skills than other examination methods. However, some feel the strictness of the method to be a disadvantage: "... when we stand in front of the teachers [oral examinations] , we are more creative and flexible , if we forget something we can add later but for OSCE, it is more mechanistic".

Discussion

The trend in students increasingly passing the OSCE is thought to be due to multiple factors, given that the introduction of OSCE was part of a larger effort to improve clinical skill teaching and the establishment of clinical skill learning labs. The important role of the OSCE in the grade and the passing of the rotation influenced students' perception of the importance of clinical skills, and thus the learning of clinical skills.

Students reported that the mentorship of students who had already taken the OSCE was a strong contributing factor to their success on the exam. This may have independently contributed to the

increasing proportion of students passing the OSCE, as that resource became successively larger with every group that passed through the OSCE.

It is notable that the preceptors, who should be so key in helping students master the clinical competencies, were rated very low by students. In contrast, an apparently successful strategy from the students' perspective was the use of skills labs and peer support.

Feedback from both students and faculty in the Obstetrics and Gynaecology rotation at HCMP was generally positive in relation to both the introduction of the OSCE and the corresponding improvements to the educational system. Limitations of this approach to implementation of OSCE in this educational context include the need for external technical assistance, the necessity to implement OSCE only after the larger effort to upgrade some of the clinical skill learning environments and the isolated implementation of OSCE only in the department of Obstetrics and Gynaecology.

Conclusion

Based on the experience of introducing OSCE into HMC, we feel that OSCE can be successfully implemented in a medical school with limited resources. However, it is important to note that OSCE cannot be implemented without a crucial set of supporting activities, such as the standardization of clinical skills of all teachers and preceptors, the agreement of teachers and preceptors on checklists, learning guides and marking guides, increased hands-on clinical experience and supportive supervision from faculty. The implementation of the OSCE, by stressing the importance of competency in selected clinical skills, appears to increase motivation for the learning of these clinical skills. Senior students play a key role in helping junior students to learn clinical skills.

Acknowledgements

This program was funded by a grant from an anonymous donor. The writers wish to acknowledge the large number of faculty, staff and preceptors without whom OSCE could not have been implemented. We wish to thank the students who gave generously of their time to comment on and improve the OSCE experience.

References

- Auewarakul, C., Downing, S.M., Jaturatamrong, U. & Praditsuwan, R. (2005) Sources of validity evidence for an internal medicine student evaluation system: an evaluative study of assessment methods. *Medical Education*, 39, 276–283.
- Barman, A. (2005) Critiques on the Objective Structured Clinical Exam. *Annals Academy of Medicine Singapore*, 34, 478-82.
- Carraccio, C. & Englander, R. (2000) The Objective Structured Clinical Examination. *Archives of paediatric and Adolescent Medicine*, 154, 736-741.
- Harden, R. & Gleeson, F. (1979) Assessment of clinical competence using an Objective Structured Clinical Examination (OSCE). *Medical Education*, 13, 41.
- Hoat, L.N., Yen N.B. & Wright EP. (2007) Participatory identification of learning objectives in eight medical schools in Vietnam. *Medical Teacher*, 29(7), 683-90.
- Joorabchi, B. (1991) Objective structured clinical examination in a pediatric residency training program. *American Journal of Diseases of Children*, 145, 757-762.
- Luu, H.N., Nguyen, S.M. & Wright, P.E.,(2008) Perceptions of graduating students from eight medical schools in Vietnam on acquisition of key skills identified by teachers. *BioMed Central Medical Education* [Online], 8(1), Available at: www.biomedcentral.com.
- Merrick, H.W., Nowacek, G., Boye, J., & Robertson, J., (2000) Comparison of the Objective Structured Clinical Examination with the performance of third-year medical students in surgery. *American Journal of Surgery*, 179, 286–288.
- Selby, C., Osman, L. & Davis, M. (1995) How To Do It: Set up and run an objective structured clinical exam. *British Medical Journal*, 310, 1187-1190.
- Sloan, D., Donnelly, M., Schwartz, R. & Strodel, W. (1995) The Objective Structured Clinical Examination: the new gold standard for evaluating postgraduate clinical performance. *Annals of Surgery*, 222(6), 735-742.
- WFME (2003) Global standards for Quality Improvement in Medical Education[Online]. Available at: www.ifmsa.org/scome/wiki/index.php?title=WFME_Global_Standards_for_Quality_Improvement.[Accessed 5 February 2008].