A new approach for scoring in Objective Structured Clinical Examination

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Cover Page Footnote

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A new approach for scoring in Objective Structured Clinical Examination

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Abstract

The Objective Structured Clinical Examination (OSCE) is a useful multi-use assessment tool which may be used to evaluate health care providers of various disciplines in a clinical setting. It appraises proficiency, through direct observation based on objective or unbiased testing. It is accurate, objective and consistent letting uniform testing of clinical skills among an extensive range of students. OSCE software, developed at Manipal College of Nursing (MCON), a constituent unit of Manipal Academy of Higher Education (MAHE) is a windows-based platform which is integrated with student's information system and is designed to access only through the intranet of MAHE. It is a smart approach which enables the examiners to mark the response of each student in different OSCE stations accurately with a single click; the report can be generated in excel format and is reproducible multiple times. It is undeniably a valued assessment tool with extraordinary features and advantages.

Key words: Assessment tool, evaluation, OSCE, Objective Structured Clinical Examination, reporting, software, scoring

Introduction

Nursing education aims to have students with a high level of knowledge, practical skills, and to function in their role as professional nurses. Clinical or practical skills support nurses' professional practice and thus nursing students require active occasions to obtain, develop and master these procedures or skills. Development of practical skills is an important dimension of nursing education. The measurement of performance of clinical skills endures to pose a difficult task for nurse educators. Various studies have established that the OSCE is a powerful tool for appraising the areas that are highly critical to the performance of healthcare professionals, such as the ability to gather detailed information from a patient, create rapport or interpersonal relationship

and communicate, and understand data and to find solutions to the problems (Morsy, Othman, Shalaby, & Elsalam, 2014).

In a clinical setting, to assess health care professionals, the OSCE is an adaptable multi-use assessment tool that can be used. It appraises competency, through direct observation established on objective testing. It is accurate, unbiased and reproducible letting uniform testing of learners for an extensive range of clinical skills. Not like the traditional clinical exam, the OSCE could appraise the areas utmost critical to the performance of health care professionals such as communication skills and the ability to handle erratic patient behaviour (Zayyan, 2011). According to the experience of the student and the nature of the assessment, content differs in the OSCE stations. The types of problems depicted in an OSCE are those that students would usually encounter in a clinic or in hospital (Hsieh, Cheng, & Chen, 2014).

Assessing student's competence is most imperious for the reasons of client safety, monitoring students' progress, inspiring students and determining achievement. However, evaluation of clinical competence has

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been challenging in nursing education because of its subjectivity and complexity. The consensus in the nursing and medical literature, support the assertion that a multi-method approach is necessary to confirm valid and reliable appraisal of the student's cognitive, affective and psychomotor elements. The emergence of the OSCE is viewed as one possible approach in addressing the limitations and the problem of the subjectivity noted in obsolete evaluative methods (Morsy et al., 2014).

Harden in 1975, first described OSCE was an alternative to the present methods of evaluating clinical skill or performance (Khan, Ramachandran, Gaunt, & Pushkar, 2013)which was previously assessed using the long case and short case examinations. Since then the use of the OSCE has become widespread within both undergraduate and postgraduate clinical education. We recognise that the introduction of the OSCE into an existing assessment programme is a challenging process requiring a considerable amount of theoretical and practical knowledge. The two parts of this Guide are designed to assist all those who intend implementing the OSCE into their assessment systems. Part I addresses the theoretical aspects of the OSCE, exploring its historical development, its place within the range of assessment tools and its core applications. Part II offers more practical information on the process of implementing an OSCE, including guidance on developing OSCE stations, choosing scoring rubrics, training examiners and standardised patients and managing quality assurance processes. Together we hope these two parts will act as a useful resource both for those choosing to implement the OSCE for the first time and also those wishing to quality assure their existing OSCE programme.", "author" : [{ "dropping-particle" : "", "family" : "Khan", "given" : "Kamran Z.", "non-dropping-particle" : "", "parse-names" : false, "suffix" : "" }, { "dropping-particle" : "", "family" : "Ramachandran", "given" : "Sankaranarayanan", "non-dropping-particle" : "", "parse-names" : false, "suffix" : "" }, { "dropping-particle" : "", "family" : "Gaunt", "given" : "Kathryn", "non-dropping-particle" : "", "parse-names" : false, "suffix" : "" }, { "dropping-particle" : "", "family" : "Pushkar", "given" : "Piyush", "non-dropping-particle" : "", "parse-names" : false, "suffix" : "" }], "container-

title" : "Medical Teacher", "id" : "ITEM-1", "issue" : "9", "issued" : { "date-parts" : [["2013"]] }, "title" : "The Objective Structured Clinical Examination (OSCE. Established to measure the intricate concept of clinical or practical skill or competence, the OSCE practices numerous cubicles or stations with examinees carrying out several clinical skills or procedures at each individual station. Tasks or procedures may contain interpretation of tests or articles, history collection, physical examination of various systems, health education to patient, writing order, or other health care activities. Currently standardized patients (SP's) are used in OSCEs and the uses have become more profound. SP's are individual's proficient to portray a patient with an ailment or disorder, therefore affording hands-on testing of students. The OSCE method, as used today, has advanced into a supple testing method that can integrate standardized patients as well as spectator marks, short written exams and other additional approaches used to offer a complete clinical appraisal of history taking, health assessment and communication skills (Turner & Dankoski, 2008).

Materials and methods

About the OSCE software

It is a windows-based platform which is integrated with student's information system which is designed to access only through the intranet of MAHE. It is a smart approach which enables the examiners to mark the response of each student in different OSCE stations accurately with a single click.

Need for development

It is an innovative idea made into reality by the collective effort of the faculty members in the department of Fundamentals of Nursing (FON), MCON and MAHE. This similar software is not used in any other place or discipline. The technical support for this venture was rendered by the Information Technology department of MAHE. Thus, the tedious job for the teachers to calculate the internal assessment marks of 100 students was replaced by the development of the innovative OSCE software.

As a part of the departmental new initiative, the faculty members from the FON department had a brain storming session and came up with an online scoring system for OSCE examination. The conventional

method of marks calculation involved manual scoring and calculation in the checklist of all the students attending OSCE. The online scoring system omits this tedious task of manual calculation. An intranet connection and windows based platform were required for the software. The checklists of different fundamentals of nursing procedures were developed and scoring was assigned to each step. With the help of IT professionals, the platform was developed and faculty members tested it multiple times and the modifications were done accordingly. Following this, briefing sessions were given to all the faculty members involved in the conduct of OSCE examination. OSCE examination was conducted for 96 students using this software and was found to be practical and feasible.

Features

- It comprises numerous nursing foundation procedural checklists with a score in which any number of the checklist can be added.
- In the report section, total weightage of OSCE can be entered and report can be generated for all the students. The report can be exported into an excel sheet for filing.
- Review section allows us to choose each student's registration number, which will display the procedures attended by the same student in every station. This section also enables us to

provide feedback to the students based on their performance.

Online scoring/marking

Before the conduct of examination, OSCE examination plan was developed. The faculty members were divided into five stations and each station was provided with a laptop, Wi-Fi/ internet connection and mouse (if required). The user can login with user id and password, and then select the registration number and the checklist. Enter the score while observing the procedure and submit it.

OSCE software was used among 96 students of first year BSc Nursing from May 2, 2018 to May 4, 2018. There were a total of five examiners in five OSCE stations using the software at every station. An IT professional was available during the examination for the technical assistance. 96 students were divided into 16 groups which included six students in each group. Every group was assigned with different set of procedures. Seven minutes was the time limit for the completion of the nursing procedure in each station. After every seven minutes, the students moved to the subsequent stations. At each station, every examiner was monitoring the student's performance and was entering the marks simultaneously in the OSCE software. OSCE software was found to be reliable, user friendly and time saving. Faculty members who were
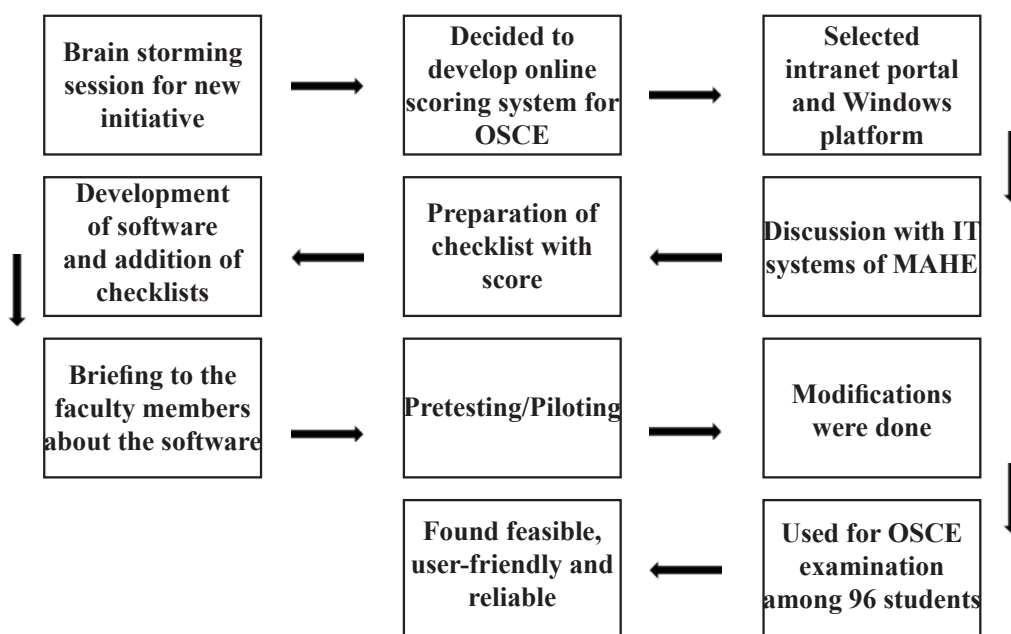

Figure 1: Schematic diagram representing the procedure of development of the OSCE software

instructors in the courses were trained individually to use the OSCE software. Training included: How to log in, selection of registration number and checklist, how to review and take a report. All the examiners gave positive feedback on the innovation.

Faculty feedback on using the OSCE software

Faculty was so much excited to use the newly developed software. It was easy to use and there was no need for calculations of the score of each student as it was done by the software. They were able to observe the entire procedure and enter the scores simultaneously without any delay. Holding the file, paper and pencil in hand was replaced by the computers. They felt it is user friendly as it included minimum sections which helped them to use the software without any confusion. It also allowed them to identify which examiner has not marked the checklist appropriately and rectify the errors immediately before it could arise during totaling. Also it does not need many preparations every year and demands update of the checklist only if required. Since computerizing the examination system, faculty has remained focused on their ability to provide the best possible examination experience to the students. Scoring is very easy and final marks are available at the end of the examination which saves a lot of time of the examiners. OSCE software helped the faculty to conduct exam with much ease and is hassle-free.

Feasibility

Since it was a paperless new initiative, the faculty members were excited to use this software. The online scoring software was found to be ecofriendly, hassle free and saved a lot of time of the examiners as it replaced the manual calculation process. It helped us in organizing an examination in a systematic way. The final marks were available in the system and the output was taken immediately and filed. This online scoring software was found feasible to use in future.

Advantages of the OSCE software over manual scoring

- Optimizing quality time of examiners with support technology;
- On time results with easy simple approach without complex calculation;
- Reduces carbon print as no file, paper and pencil are used like manual scoring;
- The examiners will get more time to observe the procedures;
- The data will be saved in the cloud, thus it is secure and reproducible;
- No missing entries;
- Reverse tracking of the score if any data is missing;
- No tedious calculation of each student's score after the exam;
- Data can be exported to excel format and can be saved; and
- Reproducible at any time.

Disadvantages of the OSCE software

- The requirement of computer competent faculty and
- The need for a continuous internet connection.

Discussion

Currently there is an emphasis on competencies rather than on knowledge attainment. Competency includes the components of knowledge, skills and attitudes (Procianoy & Silveira, 2009). OSCE has been proved as a trustworthy and handy instrument to measure clinical proficiencies, practical and communication abilities (Ilic, 2009)skills and attitudes. Adopting an evidence-based approach to practice requires differing competencies across various domains including literature searching, critical appraisal and communication. This paper examines the current tools available to assess EBP competence and compares their applicability to existing assessment techniques used in medicine, nursing and health sciences. DISCUSSION: Only two validated assessment tools have been developed to specifically assess all aspects of EBP competence. Of the two tools (Berlin and Fresno tools. From the behavioristic viewpoint, evaluation of competency can be by direct or straight observation of tasks. Nevertheless, such observation is accepted as challenging. Furthermore, it fails to assess the primary cognitive and affective skills required for effective practice and to examine and assess critical thinking skills. Assessment must address or focus on the level of performance suggesting competency and at what level students or individuals must be stated unskilled or incompetent. Methods consist of: A binary scale in which persons are arbitrated as either competent or incompetent; a number of serial phases, for example Benner's five stage model which is from novice to expert with competent being stage

three and a continuum assigning a level of competence (National Nursing Research Unit, 2009).

In the last thirty years, the OSCE has seen a solid exponential development and being used in both undergraduate and postgraduate examinations everywhere in the globe. For licensure examinations, the OSCE is also used and as a feedback tool in formative sets. The OSCE was projected to advance the validity and reliability of assessment of performance, which was previously judged by means of long case and short case examinations. Subsequently the usage of the OSCE has turn out to be widespread within both undergraduate and postgraduate clinical training. We recognize that the introduction or addition of the OSCE into the current assessment program is a challenging procedure demanding a substantial quantity of theoretical and practical knowledge (Khan et al., 2013)which was previously assessed using the long case and short case examinations. Since then the use of the OSCE has become widespread within both undergraduate and postgraduate clinical education. We recognise that the introduction of the OSCE into an existing assessment programme is a challenging process requiring a considerable amount of theoretical and practical knowledge. The two parts of this Guide are designed to assist all those who intend implementing the OSCE into their assessment systems. Part I addresses the theoretical aspects of the OSCE, exploring its historical development, its place within the range of assessment tools and its core applications. Part II offers more practical information on the process of implementing an OSCE, including guidance on developing OSCE stations, choosing scoring rubrics, training examiners and standardised patients and managing quality assurance processes. Together we hope these two parts will act as a useful resource both for those choosing to implement the OSCE for the first time and also those wishing to quality assure their existing OSCE programme.", "author" : [{ "dropping-particle" : "", "family" : "Khan", "given" : "Kamran Z.", "non-dropping-particle" : "", "parse-names" : false, "suffix" : "" }, { "dropping-particle" : "", "family" : "Ramachandran", "given" : "Sankaranarayanan", "non-dropping-particle" : "", "parse-names" : false, "suffix" : "" }, { "dropping-particle" : "", "family" : "Gaunt", "given" : "Kathryn", "non-dropping-particle" : "",

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Conclusion

The OSCE software is undoubtedly a valuable assessment tool if used wisely. All the examiners reported high levels of satisfaction with the method. It can be a useful tool for training as well as

assessing students enrolled in nursing which may improve the outcome of clinical training of students. The OSCE software is an imperative instrument for clinical proficiency appraisal that will soon be included in the paediatric and OBG departments of MCON, Manipal. It is recommended not only for the nursing field, but also for the students across all the medical and paramedical disciplines for the conduct of OSCE examinations.

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