

Vaccine Vial Monitoring (VVM) By Comparing Traditional Evaluation and Objective Structured Clinical Evaluation (OSCE)

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Abstract: Traditionally, classroom instruction using summative assessment has been the standard to test student's knowledge of the course objectives. The Objective structured Clinical Evaluation (OSCE) was developed to assess clinical competence. This summative methodologic approach is intended to decrease variables, limit complexity, and clarify objectives to test student's knowledge. The structural component focuses on the clinical objectives reflected in a checklist format. When compared to traditional method of evaluation the OSCE prove to be very effective tool to test the knowledge and practice of nursing students. So the investigator was interested to compare the traditional method of evaluation with OSCE and prove the OSCE is the best method to evaluate the clinical competence of students. This present study was carried out quantitatively with quasi experimental research with post-test only group design. Undergraduate II year nursing students 60 numbers were grouped into two groups by simple random sampling technique and all students underwent lecture cum demonstration on how to monitor vaccine vial. One group was evaluated by traditional method of evaluation by administering questionnaire and evaluated by paper and pencil method and another group evaluated by OSCE. The results shows that all students in traditional method of evaluation scored average score whereas OSCE method of evaluation students scored good score. The traditional method of evaluation showed mean and standard deviation of 11.3 ± 2.11 whereas in OSCE it shows 17 ± 3.82 . The significant mean difference between them was 19%. In paired-t test the calculated value was higher (7.65) than the table value (1.699) at 0.05 level of significance, shown the significant difference and proved OSCE was effective method of evaluation. There were no association found with demographic variable due to homogeneity of sample distribution.

Keywords: Vaccine vial monitoring, Objective Structure Clinical Evaluation(OSCE)

1. Introduction

Clinical skills and practice play vital role in training various group, the success of trainees depends on what they memorize to some extent^[1]. Effective and accurate clinical evaluation should be of concern to all nursing faculties and clinical instructors. There is a reasonable expectation for evaluation, to be objective, fair, specific, and documented. In addition, students need to know very clearly, delineated specific objectives by which they are being evaluated. One type of assessment which meets these criteria is a performance based method like Objective Structured Clinical Evaluation (OSCE)^[2]

OSCE has been widely and increasingly used since it was developed. Studies have shown that it is an effective evaluation tool to assess practical skills. In many instances the OSCE process has been adapted to test trainees from different healthcare related disciplines^[3]. Also this method has attracted the health care members and other paramedics considerably because of high level of reliability, creditability and objectivity, content validity of the achieved skills, fairness, creating motivation for learning, and greater satisfaction of instructors and students^[4,5,6,7&8].

In nursing education principles of OSCE can also be used in a formative way to enhance skills acquisition through simulation class training^[3]. In OSCE simulation, students find learning such skills are more beneficial because there is an immediate formative feedback following an event. Simulation-based training is superior to problem based learning for the acquisition of critical assessment and management skills^[2]. OSCEs can be used most effectively in nurse undergraduate curriculum to assess safe practice in terms of performance of psychomotor skills, as well as the

declarative and schematic knowledge associated with their application^[9].

Moreover, students perceived OSCE scores as a true measure for essential clinical skills being evaluated, standardized, and not affected by student's personality or social relations^[10]. It can be suggested that OSCE provide an integral way of measuring the learning outcomes in skills based training. The OSCE sessions not only help students to determine their own weaknesses, but also enable examiners to realize current status of student knowledge. If required, additional teaching sessions can be organized to address the skills needed for the student to keep abreast in their knowledge. The use of such sessions may well be a keyelement to the training of better-prepared healthcare professionals^[3]

2. Objectives

- To compare and evaluate the traditional method of evaluation and OSCE on VVM
- To find the association between the traditional method of evaluation and OSCE with selected demographic variables

3. Materials & Methods

The study was adopted in quantitative approach with quasi experimental post-test only design. Sample were chosen and grouped into two by simple random sampling method. Each group had 30 study samples. Formal permission from the head of the institution, class coordinator and with the study sample was obtained. Before collecting the data, lecture cum discussion was given on vaccine vial monitoring for the two groups of study sample together and then the data was collected. The collected data was related to demographic profile of all study sample and then first group study sample was evaluated by traditional method of evaluation with

paper and pencil. 22 multiple choice questionnaire was given. The second group of study sample was evaluated by OSCE method, which has 3 station with check list. The scoring was given by fair, average and good.

4. Results and Discussion

In both traditional method of evaluation and OSCE group, majority of the students are in the age group of 19 years and they were females. In traditional method of teaching, majority of student mother completed high schooling (43%) whereas in OSCE, majority of mother completed primary school education. In traditional method of teaching, majority of student father completed high schooling (47%) but in OSCE majority (67%) of father completed high school education. On comparing the occupational status, in traditional method majority of student father were daily labourer (43%) whereas in OSCE majority (53%) of father were private employee but mother of both the groups were home makers which contributes 80% and 87% respectively. 70% of students did not attend the previous class on vaccine vial monitor in both groups. In traditional method of evaluation 33% of the students had no previous knowledge on VVM whereas in OSCE group 63% of had no previous knowledge on VVM.

All the students had 100% average score in Traditional method and 100% good practice in OSCE on vaccine vial monitoring. In traditional method of evaluation the mean and standard deviation were 11.3 ± 2.11 whereas in OSCE the mean and standard deviation were 17 ± 3.82 . This study was supported by Sandhya Lohakare et al, which shows that the comparison between OSCE versus traditional method of evaluation revealed higher mean OSCE scores with a high statistical significant difference in first trial.

There was no association between traditional methods of evaluation and OSCE with selected demographic variables viz., as age, gender, mother education, father education, father occupation, mother occupation, religion, marital status, previous knowledge on VVM due to homogeneity of sample distribution.

Lazarus J, Kent AP. et al, Smith LJ et.al, Nkeiruka Ameh et.al, supported the present study by their results which highlights that OSCE was more valid and reliable than traditional class room evaluation. Shadia A et al conducted the research on objective structure clinical evaluation with traditional clinical evaluation of students, the mean score result shows that the maternity students obtained high score in OSCE maternity exams (26.003 ± 2.99) as compared to traditional methods (23.16 ± 5.43) with a highly significant difference ($p < 0.001$). OSCE can be used as an appropriate method in evaluating nursing clinical skills. Eman Aili Mosolhi Matere et al conducted Quasi experimental study to assess the impact of the objective structured clinical examination on the student's performance. The result shows highly statistical significant difference between the mean of traditional clinical exam (TCE) score (16.08 ± 2.1) and the mean of objective structure clinical exam score (14.45 ± 2.5) with $p < 0.001$. The maximum scoring was 20 in OSCE in comparison to 19.75 in TCE, the study recommended that

OSCE can be a tool and should be applied to evaluate clinical competency among nursing students

5. Conclusion

The study was proven that the objective structure clinical evaluation was more effective than traditional method of evaluation. The OSCE methods of evaluation were very much helpful for the nursing students to gain in-depth knowledge in particular procedure as like real situation. The OSCE style of clinical assessment, given its obvious advantages, especially in terms of objectivity, uniformity and versatility of clinical scenarios that can be assessed, shows superiority over traditional clinical assessment. It allows evaluation of clinical students at varying levels of training within a relatively short period, over a broad range of skills and issues. OSCE removes prejudice in examining students and allows all to go through the same scope and criteria for assessment. OSCE proved to be a worthwhile method in nursing practice.

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