

Effectiveness and Implications of a 'Structured Hands-on Training on OSCE' for Nursing faculties: A pilot project by Trained Nurses' Association of India

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Abstract

Nursing is one of the professions which require knowledge along with clinical competence to provide high quality nursing care. Objective Structured Clinical Examination (OSCE) and Objective Structured Practical Examination (OSPE) methods of evaluation have emerged as an alternative to traditional evaluation methods for the skills assessment. This study was planned to train nursing faculties on OSCE and evaluate its effectiveness. The primary objective of the study was to evaluate the effectiveness of the 'structured hands-on training program on OSCE' for nursing faculties on knowledge regarding OSCE. A one group pretest-posttest design with a quantitative research approach was used. Convenient sampling method was used include 27 faculties from all the available colleges of Nursing in NCT of Delhi. A structured 15-item questionnaire with multiple choice questions, each comprising four responses with one correct response was used to evaluate the knowledge of the participants regarding OSCE. The two-day training programme comprised the theory sessions and demonstration of OSCE stations comprising each speciality of nursing. Study findings revealed that the training programme was effective in significantly improving the knowledge regarding OSCE among nursing faculties. The study suggests that there is a need to develop a structured training programme and conduct training for faculties across the country to bring in uniformity in implementation of OSCE method of evaluation in colleges.

Key words: OSCE, OSPE, Nursing education, Faculty development

Nursing is one of the professions which requires knowledge along with clinical competence to provide high quality nursing care. Student nurses are exposed to various clinical areas from their undergraduate period to gain all these competencies under supervision and mentorship. Many evaluation methods are in vogue to assess the knowledge of nursing students. But when it comes to the assessment of skills these evaluation methods are reduced as few in numbers such as clinical examination, simulation, Objective Structured Practical Examination (OSPE), and Objective Structured Clinical examination (OSCE). Evaluation of skills acquired by nursing student is the critical com-

ponent of their education.

Traditionally, the nurse teachers carried out the assessment of student performance giving summative scores in traditional evaluation methods (TEM). However, conventional clinical examination used to assess the clinical skill of students is associated with several defects such as patient and examiner variability which leads to difference in the scores obtained. In the conventional clinical examination overall performance is evaluated rather than evaluating the individual components due to lack of examiners and time to assess each student throughout the examination. In this method evaluation of attitude component is completely lacking. Final score always reflects the overall performance of the students, and it is not giving any significant feedback to the students (Ananthakrishnan, 1993). OSCE and OSPE methods of evaluation have emerged as an alternative to traditional evaluation methods and are well accepted methods to assess clinical skills among nursing stu-

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dents since 1970s (Bartfay et al, 2004). OSCE is increasingly used from the time of development and in nursing education principles OSCE is used in a formative way to enhance skills acquisition through simulation (Alinier, 2003). In the year 2021, the Indian Nursing Council has amended the syllabus for undergraduate nursing students in which the OSCE is mandatory to assess the skills of nursing students. OSCE method of evaluation helps to assess each step of practice among students rather than overall performance and it helps to improve their skills in a better manner. The OSCE is well established, with an extensive body of research documenting that this is a valid means to assess clinical skills (Tervo et al, 1997).

OSCE is an assessment tool in which the components of clinical competence such as history taking, physical examination, simple procedures, interpretation of lab results, patient management problems, communication, attitude etc. are tested using agreed check lists and rotating the student round a number of stations some which have observers with checklists. Under OSCE and OSPE, several stations are established, and each station is independent and designed to assess a set of skills. Usually, each station is allotted a time limit of four to five minutes. Based upon the number of stations that many students enter the OSCE hall, each student is directed to different stations established. Based upon the instruction or task or question displayed in the station, a student needs to carry out the activity. If the student is performing certain skill, there is an observer with a checklist to assess each component in student's action. If the station involves certain calculation or identification of instruments, the student need to put their answer in the answer sheet provided at each station. When the given time for a station is up, the student needs to move to the next station upon bell or signal. The total time required to complete the exam would be number of stations multiplied with time allotted to each station. For example, if there are 10 stations and 5 minutes allotted for each station, then it will take 50 minutes to complete the exam.

Every year number of students admitted in undergraduate nursing course is increasing all around the world. Assessing the students' psychomotor skills is very challenging especially in facilities with limited clinical resources. Traditional clinical nursing examinations are not standardised to assess clinical competency and clinical reasoning skills (Eldarir et al, 2013). Traditionally many methods are used to assess clinical competency but most of them are subjective in nature. Omu (2016) explored the acceptance of OSCE as an evaluation method among

nursing students and found that the nursing graduates perceived OSCE as gold standard for assessment even though it is stressful to them. Pierre et al (2004) reported that the students perceived OSCE score as more accurate measure of their clinical skills without any bias. Eldarir et al (2013) concluded that the highest rate of satisfaction belonged to OSCE methods than the traditional methods in terms of measurement of course objectives, enhanced teaching level, correlating theory to practice, increased decision making ability, enhanced methods of evaluation and well developed exam. OSCE helps in more comprehensive evaluation of psychomotor skills of students in non-clinical setting without risk for real patients. In OSCE, all students are exposed to same scenario which eliminates the luck and draw factor among students. This evaluation method can be easily used among large group of students and in areas with limited clinical facility to assess student's psychomotor skills. This method employs more objective method of evaluation and eliminate personal bias. This method evaluates each step of a procedure rather than the global performance which helps in identifying the specific shortcoming in students' performance.

Need for the Study

Nursing is a solemn profession requiring a great deal with clinical competency. Nursing education involves learning and assessment of psychomotor skills to a great extent, a challenge for nursing faculty. Objectively assessing and evaluating the clinical nursing skills of nursing students pose a great difficulty to the nursing faculties and clinical instructors. Nursing is a discipline where hands-on practice plays a major role particularly before implementation of new methods or protocols. Hence, this study was planned to evaluate the effectiveness of the 'structured hands-on training program on OSCE' for nursing faculties on knowledge regarding OSCE. This in turn will guide us identify the strategies to implement the training on a large scale to improve the objective evaluation of clinical skills of nursing students.

Methods and Materials

A one group pre-test post-test design with a quantitative research approach was adopted to test the hypothesis whether the 'structured hands-on training on OSCE' for nursing faculties will improve their knowledge regarding OSCE. A convenient sampling method was used include faculties from all the colleges in NCT of Delhi. The nursing colleges in the NCT of Delhi were asked to nominate faculties to the training programme. Twenty-seven faculties participated in

the training programme. A self-developed 15-item multiple choice questions, each comprising four responses with one correct response, was used to evaluate the knowledge of the participants regarding OSCE. The knowledge questionnaire was validated by the three experts. The questionnaire was filled by the participants before the beginning of the training programme and again after the completion of the two-days training programme. Participants were given 10 minutes to fill the questionnaire.

Intervention

The two-day training programme comprised the theory sessions and demonstration of OSCE stations. OSCE stations were prepared for each speciality of nursing, i.e. medical surgical nursing, psychiatric nursing, paediatric nursing, obstetric & gynaecological nursing, and community health nursing, to demonstrate the functionality of the stations to the participants. Checklists and scoring sheets were prepared for each station to appraise the participants about the operationalisation of OSCE stations. The demonstration of station was carried out after dividing the participants into small groups of 6 students each.

Data Analysis

The data obtained for this study were analysed to determine the effects of the intervention on the knowledge of the study participants on OSCE. Knowledge score was categorised into Inadequate (0-7), Moderately adequate (8-11) and Adequate (12-15) knowledge to describe the level of the knowledge of study participants at pre-test and post-test level. Paired 't' test was employed to test the hypothesis whether the knowledge level has increased significantly from pre-test to post-test. Analysis was performed with SPSS 21.0 version.

Results

Twenty-seven participants participated in the study out of which 11 (40.7%) were postgraduates. Mean age of the participants was 33.7 years, their age ranged from 23 years to 70 years.

The knowledge level of the study participants

Table 2: Mean and standard deviation of pre-test and post-test (N=27)

Variable	Pre-test Score (Mean $\pm$ SD)	Post-test Score (Mean $\pm$ SD)	MD	't' value	'p' value
Knowledge score	6.0 $\pm$ 2.43	9.93 $\pm$ 2.7	3.92	8.18	<0.001

is illustrated in Table 1. Two-third of the participants had inadequate level of knowledge and one-third of them had moderate level of knowledge before the training. After the training, only 22.2 percent of the participants had inadequate knowledge and 29.6 percent of the participants had adequate knowledge regarding OSCE.

Independent sample 't' test was employed to compare the mean knowledge score between pre-test and post-test scores, and it was found to be significant ($t=3.92$, $p<0.001$) as shown in the Table 2. The significant increase in knowledge scores of the study participants can be attributed to the hands-on training programme on OSCE.

Discussion

There is a growing interest in implementation of OSCE as an evaluation method for the assessment of clinical skills of nursing students. The knowledge and skill regarding appropriate application of OSCE method among nursing faculties is pertinent. This study findings revealed that the faculty working in nursing colleges of Delhi are new to learn OSCE and its method of implementation in their respective practice. The training session was helpful for them to learn about the concepts of OSCE and how to set up different types of OSCE stations in various specialities of nursing. They participated in OSCE stations and were also given opportunity to set up OSCE stations and develop checklists for OSCE evaluation. The hands-on training programme on OSCE has resulted in a significant improvement of knowledge regarding OSCE among nursing faculties. A study by Piriyani Piriyani (2018) on training workshop on developing OSCE in Nepal revealed that the confidence level of faculties increased significantly after having undergone the training programme on OSCE. A study by Elsa (2022) among nursing faculties in a College of Nursing in Kerala revealed that the majority (76%) of nursing faculties had inadequate knowledge. However, this descriptive study does not have any intervention to assess effectiveness of an OSCE training. There is dearth of literature on effectiveness of hands-on workshop on knowledge level of OSCE among nursing faculties.

Limitations

The study has some limitations in terms of limited sample size and only the knowledge was assessed to evaluate the effectiveness of the hands-

Table 1: Knowledge level of study participants in OSCE/OSPE (N=27)

Level of knowledge	Frequency (%)	
	Pre-test	Post-test
Inadequate	18 (66.7%)	06 (22.2%)
Moderate	09 (33.3%)	13 (48.1%)
Adequate	00 (0%)	08 (29.6%)

on training program. The practice and attitude or opinion of the faculties on implementation of OSCE could be included in the study.

Implications

Evaluation of student using OSCE is made mandatory as per the new competency-based syllabus introduced by Indian Nursing Council. In this regard, training of nursing faculties on preparation of OSCE stations and appropriate implementation of OSCE method to enhance the objectivity of skill assessment is of paramount importance. There is a need to develop a structured hands-on training programme on OSCE for nursing faculties.

Conclusion

The hands-on training on OSCE for nursing faculties found to be effective in significantly improving the knowledge regarding OSCE. This in turn will encourage the faculties to try and implement OSCE method of evaluation as a method of skill assessment of student in collegiate programmes. There is a need to develop a structured training programme and conduct training for faculties across the country to bring in uniformity in implementation of OSCE method of evaluation in colleges.

References

1. Ananthakrishnan N. Objective structured clinical/practical examination (OSCE/OSPE). *J Postgrad Med* 1993; 39: 82
2. Bartfay WJ, Rombough R, Howse E, et al. The OSCE Approach in Nursing Education: Objective Structured Clinical Examinations Can Be Effective Vehicles for Nursing Education and Practice by Promoting the Mastery of Clinical Skills and Decision-Making in Controlled and Safe Learning Environment. *The Canada Nurse* 2004; 18-32
3. Alinier G. Nursing students' and lecturers' perspectives of objective structured clinical examination incorporating simulation. *Nurse Education Today* 2003; 23(6): 419-26
4. Tervo RC, Dimitrievich E, Trujillo AL, Whittle K, Redinius P, Wellman L. The Objective Structured Clinical Examination (OSCE) in the clinical clerkship: An overview. *S D J Med* 1997 May; 50(5): 153-56. PMID: 9155233
5. Eldarir, Shadia & Afefy, Nagwa. Objective Structured Clinical Evaluation (OSCE) versus traditional clinical students' achievement at Maternity Nursing: A comparative approach. *IOSR Journal of Dental and Medical Sciences* 2013; 4: 63-68
6. Omu F. Attitudes of Nursing Faculty Members and Graduates towards the Objective Structured Clinical Examination (OSCE). *Open Journal of Nursing* 2016; 353-364. doi: 10.4236/ojn.2016.65037
7. Pierre R, Wierenga A, Barton M, Branday JM, Christie C. Student evaluation of an OSCE in Pediatric at the University of the West Indies, Jamaica. *BMC Medical Education* 2004; 4(22): 1-7
8. Eldarir S, Afefy N. OSCE versus traditional clinical student's achievement at maternity nursing: Comparative approach. *IOSR Journal of Dental and Medical Sciences* 2013; 4(3); 63-68
9. Piryani RM, Piryani S. Training workshop on developing Objective Structure Clinical Examination (OSCE) conducted at nursing campus in Nepal: Feedback of the nursing faculty participants. *Janaki Medical College Journal of Medical Sciences* 2018; 6(1): 49-54. DOI: <http://dx.doi.org/10.3126/jmcjms.v6i1.20576>.
10. Elsa JM. Assessment of knowledge and attitude regarding objective structured clinical examination among nursing students. *TNNMC Journal of Nursing Education and Administration* 2022; 10 (1): 4-8

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