

Effectiveness of Statewide Training on Implementation of Objective Structured Clinical Examination (OSCE) in the Nursing Colleges of Tamilnadu

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Abstract

Objective Structured Clinical Examination (OSCE) is a powerful method of evaluating the clinical competencies of the nursing students. To build the capacity of nursing faculty of affiliated colleges under the TN Dr MGR Medical University in OSCE and implement OSCE as part of University practical examination for nursing students' workshops were conducted by The TN Dr MGR Medical University, Chennai. The study was conducted in 2 phases using pre-experimental one group pre-test and post-test research design. Phase 1 included 78 post graduate faculty members from 13 selected nursing colleges representing 6 specialities in nursing from various zones of Tamil Nadu, who were trained in OSCE. The baseline data of faculty, existing practice of OSCE in the selected nursing colleges and the knowledge of faculty in OSCE before and after the capacity building programme were assessed using a Structured Questionnaire. In phase 2 the trained faculty of the 13 colleges conducted similar workshops in selected zones of Tamil Nadu by including the faculty members (N =1002) from the nursing colleges. Data collection was done in a similar manner in all the zones. Study findings revealed that 38.4 percent of the colleges were already practicing OSCE. In Phase 1 there was a significant improvement in the OSCE knowledge scores of the faculty in post-test (M= 17.6, SD = 2.35) in comparison with the mean pre-test (M=13.75, SD =3.04), out of 20, the total score ($p < 0.001$). In phase 2 the faculty from Vellore, Tiruvannamalai, Tirunelveli, and Madurai reported higher mean difference scores between pre- and post-test. OSCE can be effectively used as part of formative and summative evaluation in Nursing. Nursing faculty members need be periodically trained in OSCE to implement it uniformly and effectively.

Key words: Capacity building, OSCE Workshop, Nursing Faculty members

The assessment of knowledge and skills plays an important part in student nurses' preparation because they need to demonstrate competency and confidence in the performance of clinical skills. Preparation of nursing students for clinical practice experiences has long been an important yet challenging area of education programmes.

In India, traditional practical examination has been used to assess the students' clinical performance. It includes assignment of one patient to provide holistic care to the patient based on the needs, followed by Viva (oral examination). The traditional clinical final examination has several problems and is not standardised to assess clinical competency and clinical reasoning skills. The teacher often questions only regarding final conclusion and gives summation score and does not observe history taking, physical examination, diagnostic reasoning and management (Bakhsh, 2009). Objective Structured Clinical Examination (OSCE) has been used for decades with-

in nursing and medical programmes to assist with preparation for practice, scaffold learning, determine participants' level of clinical performance and provide feedback on areas for improvement (Rushforth 2007, Baid 2011). OSCEs generally feature a number of skill stations (typically 8–10 with 5–8 min allowed per station) which students rotate through to test discrete knowledge and clinical and professional skills (Harden & Gleeson, 1979). Objectivity of the assessment is achieved by assessors using rating scales or checklists to make judgements of mandatory competencies through observing students' performance.

Therefore, OSCE is recommended as a powerful and effective tool for evaluating students' clinical performance. OSCE was first introduced in medical education by Ronald Harden in Scotland at the University of Dundee in 1975 (Ananthakrishnan, 1993). Since then, it has been used worldwide to provide formative and summative assessment in medicine, dentistry, nursing and pharmacy (Schoonheim-Klein et al, 2006).

Even though it is widely used as a evaluation tool

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in Nursing, in India its use is very much limited and it is used as a part of only formative evaluation in Nursing. Considering the importance of introducing OSCE in Nursing, TN Dr MGR Medical University, Chennai (TN) organised one-day workshop on OSCE in Nursing on 18 April 2018 to sensitise the Nursing faculty members and to train the trainers (TOT) on OSCE. These trainers in turn were asked to conduct OSCE workshops in their regional area as identified by the University to conduct and implement OSCE for summative evaluation. As part of workshop pre-test and post-test was conducted to assess the knowledge and practice of OSCE in nursing colleges of Tamilnadu.

Objective

This study was conducted to assess the effectiveness of training workshop on OSCE upon knowledge among nursing faculty members with post graduate nursing qualification and involved in teaching collegiate nursing courses in Tamilnadu.

Review of Literature

An integrative review of objective structured clinical evaluation of clinical competence revealed major gaps in the nursing literature regarding the examination of the psychometric properties of the OSCE, the suitability of the design of the OSCE structure and tools for nursing to measure clinical competency, and the associated costs in the application of this evaluative method. Research conducted on the psychometric properties of the OSCE tool used and correlations to other evaluative methods currently used to evaluate nursing clinical competence would inform educational practices (Walsh et al, 2009).

An Exploratory study conducted at College of Nursing, AIIMS, New Delhi reported that most of the students approved of OSPE and felt that it was fair, useful, good, effective, exciting, interesting, practical, skill-oriented but also taxing. It also revealed that amongst the second year students there was a strong correlation between overall rank in the class and assessment of OSPE. The study supports the introduction of OSPE as one of the methods of assessment of BSc Nursing students (Chongloi et al, 2016).

Methods and Materials

The present study was carried out to assess the effectiveness of workshop on OSCE upon knowledge among Nursing faculty members, who attended the workshop on OSCE. Pre-experimental research design, one group pre-test and post-test was used among 78 faculty members who attended the workshop. Total enumerative sampling technique was used to select the samples (i.e. all the nursing faculty who participated in the workshop were included).

Data was collected using survey form for assessing the practice of OSCE in the nursing institutions

of Tamilnadu. Knowledge of the faculty members was assessed by 20 item-questionnaire - 15 MCQs and five True or False items through self-administration method. Each MCQ consisted of four options - one right answer and three distractors. All right answers were scored one and wrong answers were scored zero. Therefore the total obtainable score was 0-20. pre-test was conducted immediately after the registration which was followed by the OSCE workshop.

Workshop included general session on Overview of OSCE followed by Brain Storming by faculty members regarding implementation of OSCE as a part of summative evaluation. It was followed by conducting OSCE in different specialties including Nursing Foundation, Medical Surgical Nursing, Paediatric Nursing, Obstetrics & Gynaecological Nursing, Community Health Nursing and Psychiatric Nursing). The participants, divided into six groups, participated in interactive hands-on experience in all the specialties. Mock OSCE was also conducted in each speciality to materialise OSCE and to make the faculty confident in implementing OSCE in future. At the end, the participants were given the materials in form of CD. Post-test was conducted after completion of the workshop using the same tools. Collected data was entered and analysed using appropriate descriptive (f, %, Mean and SD) and inferential statistics ('t' test) through SPSS-20.

Results

The results showed that more than half the faculty members were aged above 40 years (53.75%), 39.74 percent of them had 11-20 years of experience and 34.61 percent had 6-10 years of experience (34%) (Table 1).

Table 2 indicates that 76.92 percent of the institutions were already practicing OSCE method of evaluation among which 38.46 percent were found to be having OSCE for all nursing subjects. While OSCE was conducted in labs by most of the colleges (69.23%), simulated patients were used in OSCE by 46.15 percent of colleges.

Table 1: Frequency and percentage distribution of background variables of Nursing faculty members in Phase 1 (N= 78)

Variables	Frequency	Percentage
Age		
Upto 40 years	35	44.87
Above 40 years	43	53.75
Years of experience after PG		
Up to 5 years	14	17.94
6-10 years	27	34.61
11- 20 years	31	39.74
Above 20 years	6	7.69

Table 2: Frequency and percentage distribution of existing practice of OSCE in Nursing Institutions of Tamil Nadu in Phase 1 (N= 13)

Variables	Frequency	Percentage
No. of Institutions trained their faculty earlier in OSCE	10	76.92
OSCE Conducted - Earlier (any subject)	12	92.30
All the subjects	5	38.46
Nursing Foundations	8	61.50
Medical Surgical Nursing	7	53.84
Paediatric Nursing	9	69.23
Obstetrics and Gynaecological Nursing	8	61.50
Community Health Nursing	6	46.15
Psychiatric Nursing	7	53.84
Venue of OSCE conducted earlier		
Clinical setting	2	15.38
Laboratory	9	69.23
Class rooms	3	23.07
Common halls	7	53.84
Using simulated patients for OSCE	6	46.15

Table 3: Comparison of pre-test and post-test mean scores of knowledge on OSCE among nursing faculty members in phase 1 (N= 78)

Assessment	Maximum Score	Mean	SD	Mean Difference	Paired t value	p-Value
Pre-test	20	13.75	2.55	2.85	6.21	0.001
Post-test		16.60	3.04			

There was significant difference in knowledge scores on OSCE among nursing faculty members between pre-test (M= 13.75, SD 2.55) and post-test (M= 16.60, SD 3.04) (Table 3). Post-test knowledge scores were higher than pre-test knowledge scores ('t' value 6.21, $p < 0.001$). It can be attributed to the effectiveness of workshop on OSCE on improving knowledge.

Table 4 depicts that there was significant difference in knowledge scores on OSCE among nursing faculty members between junior (M=12.85, SD 2.29) and senior faculty members (M=14.77, SD 2.46) in

Table 4: Comparison of mean scores of knowledge on OSCE between junior (Up to 10 years' experience) and senior (above 10 years' experience) faculty members in pre-test and post-test in phase 1

Years of experience	Pre-test			Post-test		
	Mean	SD	Independent 't' value & 'p' value	Mean	SD	Independent 't' and 'p' value
Up to 10 years (n=40)	12.8500	2.29	t= 3.49 p= 0.001	16.78	3.93	t= 0.53 p= 0.59
Above 10 years (n=35)	14.7714	2.46		16.40	1.52	

pre-test. OSCE knowledge scores were higher in senior faculty members than Junior faculty members in pre-test ('t' 3.49, $p < 0.001$). However there was no significant difference in knowledge scores on OSCE among nursing faculty members between junior (M=16.78, SD 3.93) and senior faculty members (M=16.40, SD 1.52) in post-test ($p > 0.05$). It can be attributed to the effectiveness of workshop on OSCE in improving knowledge and nullifying the difference between junior and senior faculty members exist in pre-test.

Table 5 shows that the overall mean score of pre-test knowledge of the faculty from all Colleges of Nursing in Tamilnadu (M=11.70) was lesser than the scores in post-test (M=16.92) and the mean difference in the score was 5.22 which reflects the effectiveness of the workshop. The mean difference between the pre-and post-test scores were found high in the zones Vellore (MD=8.00), Tiruvannamalai (MD=5.09), Tirunelveli (MD=4.84), Madurai (MD=4.42) and Chennai (MD=4.10), in comparison with other zones of Tamil Nadu.

Discussion

This study was conducted to assess the effectiveness of one day workshop on OSCE upon knowledge among Nursing Faculty members, who attended the workshop to build the capacity of nursing faculty in OSCE. Study revealed that OSCE workshop was effective in improving the knowledge of the faculty members on OSCE. OSCE is one of the powerful, reliable and valid tool in assessing the competency of the students in health sciences including Nursing.

Although 38.4 percent of the institutions were already practicing OSCE, there are less chances for uniformity in conducting the same, as no formal training was conducted by university. Pre-test mean scores of knowledge on OSCE among faculty members (M=13.75/20, SD=2.55) reflect that many nursing faculty members were well aware of the OSCE even though it is not included in the summative evaluation. In recent days, most institutions (80%) have initiated

implementing OSCE at least in one subject as a part of formative evaluation. It is controversial to the study findings reported by Vijayalakshmi et al (2014), who reported that only 14 percent of the institutions have conducted OSCE. It reflects the improvement trend over the due course of time in conducting OSCE in nursing institutions of Tamilnadu.

The study revealed that the participants exhibited a significant improvement in the mean scores

Table 5: Pre- and post-test knowledge scores of faculty from various zones of Tamilnadu (Phase 2, N=1002)

S.No.	Zonal colleges	No. of colleges	No. of faculty	Knowledge mean scores		Mean difference
				Pre-test	Post-test	
1	Chennai Zone 1	13	78	12.2	16.30	4.1
2	Chennai Zone 2	13	78	---	---	---
3	Coimbatore Zone 1	10	60	12.22	16.17	3.94
4	Coimbatore Zone 2	10	60	13.30	15.30	2.00
5	Vellore	12	72	6.00	14.00	8.00
6	Tiruvannamalai	11	66	12.02	17.11	5.09
7	Trichy	12	72	12.35	15.93	3.58
8	Erode	16	96	13.33	15.6	2.27
9	Salem	17	102	11.84	15.47	3.63
10	Madurai	17	102	11.2	15.62	4.42
11	Tirunelveli	10	60	12.00	16.84	4.84
12	Kanyakumari	14	84	11.80	15.31	3.51
13	Tanjore	12	72	12.2	14.96	2.76
Total		167	1002	11.70	16.92	5.22

of the post-test ($M=16.6$, $SD=2.55$) conducted at the end of the workshop as compared to the mean of pre-test ($M=13.75$, $SD=3.04$, $p=0.00$). These findings are consistent with study conducted by El-Khoury et al (2012), who reported improvement in knowledge scores of OSCE in post-test ($M=8.6/12$) than in pre-test ($M=6.4/12$).

Implications: Well organised OSCE needs sound knowledge in the nursing subjects and application of OSCE. Good planning and mobilisation of resources for OSCE includes preparation of scenarios/questions/images/specimens for interactive/noninteractive OSCE stations, selection of examiners, patients or simulated patients for participating in OSCE, arrangement of venue for OSCE stations, OSCE check-lists for evaluation and feedback forms to incorporate suggestions during replan of OSCE

Recommendations: The nursing faculty members must be trained and prepared suitably to conduct the OSCE with greater emphasis on preparation of OSCE stations and check lists. Preparation of OSCE bank in all the subjects based on the significance of the subject matter and requirement is essential, though a laborious task to prepare OSCE stations and check-lists every time.

Conclusion

OSCE is an effective method of evaluation, which prepares the nursing students by exhibiting competencies in each task. Implementing OSCE workshop was effective in improving the knowledge of the Nursing faculty members on OSCE. Therefore, implementation of OSCE as a supplementary method of clinical eval-

uation along with traditional Practical Examination will improve reliability and validity of the evaluation while retaining the advantages of traditional Practical Examination to ensure practice of holistic care of the patients.

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