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## A STUDY TO ASSESS THE EFFECTIVENESS OF TRAINING BY OBJECTIVE STRUCTURED CLINICAL EXAMINATION (OSCE) ON CARDIOPULMONARY RESUSCITATION (CPR)

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### ABSTRACT

The objective type clinical examination (OSCE) has emerged during the past two decades in medicine (Oh *et al*, 2011)<sup>1</sup>. This examination type involves direct observation of clinical performance using standardized patients and structured checklists for marking. This study is to evaluate the effectiveness of training by Objective Structured Clinical Examination (OSCE) on Cardiopulmonary Resuscitation among 1<sup>st</sup> year B.Sc. Nursing students. Non - probability (purposive) sampling technique was used to collect data from 30 students of 1<sup>st</sup> year B.sc Nursing studying in RVS College of Nursing, Kannampalayam. A quasi-experimental one group pre-test post-test design was chosen for this study. The knowledge and skill of Cardio pulmonary Resuscitation was assessed through four stations (Station I: Scene Safety, Station II: Cardiac Massage, Station III: Opening the Airway, Station IV: Mouth to Mouth Breathing) by using procedure checklist. Those collected data was analyzed on the basis of objective and testing of hypothesis by using descriptive and inferential statistics. In association with gender of students and level of knowledge the chi- square obtained value in 1.78 which is significant at 0.05 levels and revealed that there is significant association between them. **Significant findings of the study:** In association with the demographic variable and level of knowledge among nursing students the chi-square value is significant at 0.05 levels and reveals that there is significant association between them. It was concluded that OSCE method was effective in training of clinical competency and theoretical knowledge.

### KEYWORDS

Objective Structured Clinical Examination, Cardiopulmonary Resuscitation, Training and Nursing students.

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### INTRODUCTION

Educational change in nursing is necessary for meeting the demands of the current healthcare environment. Learning objectives are focused on the best practice outcomes and are emphasized on expectance of what the healthcare provider after the educational activity. Educational activities provide the skills and knowledge which enable the nurses to

meet the goals. The current nursing generation should grow in proper and timely provision of essential care to their patients. Hence nurses need adequate knowledge and skill by repeated training and practice.

The nursing curriculum is with clinical and theoretical courses that complement each other. Nursing education aims to have students acquire the knowledge, practical skills, and social responsibility necessary to thoroughly assume their role as professional nurses after completing a nursing program (Oh *et al*, 2011)<sup>1</sup>. Clinical practice ensures the nursing students with the opportunity to gain the applied knowledge as well as psychomotor skills that are imperative for professional development. Objective Structured Clinical Examination (OSCE) is now increasingly accepted as a useful tool in evaluation of the knowledge as well as clinical skills of medical students.

OSCE is an approach to the assessment of clinical competence in which the components of competence are assessed in a well-planned or structured way with attention being paid to the objectivity (O'Neill and Mc Call, 1996). OSCE was first introduced in medical education by Harden in Scotland in 1975 (El-Nemer and Kandeel, 2009)<sup>2</sup>. It is now emerged in other disciplines including nursing, pharmacy, and dentistry to test clinical skill performance (Sauer *et al*, 2005)<sup>3</sup>. An OSCE is a type of examination often used in health sciences. It is designed to test clinical skill performance and competence in a range of skills. It is a hands-on, real-world approach to *learning and assessment*.

(Brazeau C 2002)<sup>4</sup>, at the same time, both faculty and students wanted more direct observation and feedback on performance with clinical scenarios. Using existing OSCE resources to change the OSCE to a teaching tool proved to be an efficient use of teaching resources while increasing our educational impact. Students report that they appreciate the opportunity to have constructive discussions of their strengths and weaknesses in clinical encounters, observe a variety of doctor-patient interaction styles, and practice for future OSCE-type examinations. Faculty members enjoy this active teaching format and find the process of students giving feedback to

their peers educationally useful. The teaching OSCE has been extremely well rated in the end-of-rotation evaluations and will be continued in future clerkships. Hence we are interested in changing an existing OSCE to a teaching tool by making of a teaching OSCE of CPR.

The teaching OSCE (Objective Structured Clinical Examination) was developed from existing OSCE materials to provide direct observation and feedback to students on their doctor-patient relationship skills, students' abilities to do a focused history and physical examination, and to familiarize students with this type of examination.

(Lamba S 2016)<sup>5</sup> A majority of residents reported that TOSCE (Teaching OSCE) was a valuable learning experience. In conclusion, a TOSCE is effective in assessing communication skills around the critically injured patient in the trauma bay. A TOSCE is feasible to implement in surgery and emergency medicine residency training, and the format is valued by participants.

Brazeau *et al*,<sup>4</sup> have also employed OSCEs as teaching tools to increase educational impact. Improvement was observed in students' short-term competencies in all the three domains; cognitive, psychomotor and affective after HST. Others have also reported increase in posttest scores after simulation training. They too reported confidence in having acquired the technical skill and its applicability to practical life. Acquiring hands-on skills of IUCD insertion would otherwise not have been possible before graduation. Similar increase in confidence level after simulation-training was seen in other studies.

Basic Life Support competency is considered a fundamental skill for health care workers. In the wider community, it is an expectation that knowledge and competence in Basic Life Support is at a high standard in nursing education. Participation in both successful and unsuccessful Cardiopulmonary Resuscitation and Basic Life Support is one of the most stressful situations that the nursing students have to deal with after their registration. A thorough knowledge and competency (skill) help them to perform Basic Life Support to the patient's whenever is needed.

Poor knowledge and skill retention following Cardio pulmonary Resuscitation and Basic Life Support training has been documented over the past 20 years. In order to enhance the retention of knowledge and skill repeated training is needed. However, some students have difficulties in developing competence in Cardiopulmonary Resuscitation and evidence suggests that resuscitation skill may only be retained for several months. So further training is necessary for developing and retaining the skills. Hence, this study was done on assessing the effectiveness of OSCE on training CPR among student nurses.

### MATERIAL AND METHODS

An evaluative research approach with quasi experimental one group pre-test and post-test design was used in this study to determine the effectiveness of training by using Objective Structured Clinical Examination “OSCE” on Cardiopulmonary Resuscitation (CPR) among 1<sup>st</sup> year B.Sc. Nursing students in RVS College of Nursing, Kannampalayam, and Coimbatore. A purposive sampling technique was used to collect the sample. The final sample size was 30. Tools of the study are Tool (I): A socio-demographic data sheet, Tool (II): An intervention tool: Objective Structured Clinical Training and Examination program (OSCTE): on CPR. Brief explanation regarding the purpose of the study was given to the students. Each group of samples were taken to the separate room and brief explanation given about OSCE and assessed the knowledge on CPR by OSCE method to assess the pre-test knowledge. The group was attending 4 stations for training as per the schedule. Structured teaching on CPR by OSCE training was given on the same day to the samples. The post-test was conducted after the OSCE training using the same tool that is used for pre-test.

The collected data is analyzed using both descriptive and inferential statistics. Descriptive statistics includes the mean, standard deviation and percentage. Inferential statistical analysis includes chi-square.

### RESULTS AND DISCUSSION

Majorities (63%) of the samples are females and 57% of the samples were from urban. While assessing the sources of knowledge regarding CPR, 47% is from mass media.

Table No.1 Shows the post-test score of knowledge perceived in all four stations. In station of checking response the mean score was  $7.57 \pm (1.21)$ , in cardiac massage station the mean score was  $19.8 \pm (2.38)$ , in opening the airway station the mean score was  $7.73 \pm (0.93)$ , and in breathing station the mean score was  $11.48 \pm (1.4)$ .

Table No.2 shows the association between post-test level of knowledge and demographic variables, the following association shows significance at 0.05 levels. Chi-square value of gender is 1.78 which is significant. The chi-square value of family income is 10.87 which is significant. The chi-square value of father’s education is 2.79 is also significant. Chi-square value of source of knowledge regarding CPR is 3.2 which shows significant. Chi-square value of area of residence is 0.8 which is significant at 0.05 levels.

**Table No.1: Post Test Score of Knowledge Perceived by Nursing Students by OSCE Training**

S.No	STATION	ITEM	MEAN	S.D
1	I	CHECKING RESPONSE	7.57	1.21
2	II	CARDIAC MASSAGE	19.8	2.38
3	III	OPENING THE AIRWAY	7.73	0.93
4	IV	BREATHING	11.48	1.4

**Table No.2: Association between Post Test Level of Knowledge and Demographic Variables**

S.No	Demographic Characteristic	Df	Chi Square	Remarks
1	GENDER	2	1.78	S
2	RELIGION	4	10.87	NS
3	FAMILY INCOME	6	5.37	S
4	FATHER'S EDUCATION	6	2.79	S
5	SOURCE OF KNOWLEDGE REGARDING CPR	6	3.2	S
6	AREA OF RESIDENCE	2	0.8	S

## CONCLUSION

The findings of present study indicate that nursing students experienced higher level of knowledge of cardiopulmonary resuscitation by using OSCE training. The main results revealed that there was positive and direct significant co-relation between using OSCE sessions in training and OSCE examination and there is statistical significant difference. The current study findings showed that the majority of the nursing students' were having good overview toward OSCE as a training tool.

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## CONFLICT OF INTEREST

We declare that we have no conflict of interest.

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