RESEARCH ARTICLE

EFFECTIVENESS OF OBJECTIVE STRUCTURED CLINICAL EXAMINATION(OSCE) AS A METHOD OF ASSESSMENT UPON SELECTED CLINICAL COMPONENTS IN CHILD HEALTH NURSING AND TO IDENTIFY THE PERCEPTION OF STUDENTS REGARDING OSCE IN SELECTED NURSING COLLEGES, PONDICHERY

Prof. Malliga Kannan¹ and Dr. Prof. Ani².

1. PhD Scholar, MAHER Chennai.
2. Grace Kalaimathi, Registrar TNNMC, Guide-MAHER Chennai.

Abstract

Pilot study was conducted to assess the effectiveness of objective structured clinical examination as a method of assessment upon selected clinical components in child health nursing and to identify the perception of students regarding OSCE in selected nursing colleges, Pondicherry with 40 samples who were selected randomly. Consent obtained from each sample before the data collection. The OSCE stations were established. The pretest and post test conducted with the same tool. The tool reliability assessed by split half method using spearman brown’s formula. The ‘r’ value obtained for the OSCE stations were 0.9. The reliability of the students’ perception checklist was assessed by inter-rater reliability using Pearson correlation coefficient. The ‘r’ value obtained was 0.8.

Introduction:

Assessment of clinical competence is an integral requirement of health professional education. OSCE was introduced in 1975 as a standardized tool for objectively assessing clinical competencies. A Benchmark for clinical skills [Bartfay, et al 2004]. The traditional tool for assessment of nursing students has mainly consisted of written exams, bedside viva and clinical case presentations. These have focused on the ‘knows’ and ‘knows how’ aspects. ie. The focus has been on the base of the Miller’s pyramid of competence. These methods have drawn a lot of criticism due to its lack of validity and reliability.

Statement Of The Problem:

Assess the effectiveness of objective structured clinical examination as a method of assessment upon selected clinical components in child health nursing and to identify the perception of students regarding OSCE in selected nursing colleges, Pondicherry.

Objectives:

To test the reliability - feasibility of the tool and objective structured clinical examination on selected clinical components in child health nursing and to identify the perception of students regarding OSCE in selected nursing colleges, Pondicherry.

Corresponding Author:- Malliga Kannan.
Address:- MAHER Chennai.
Methodology:

Research Approach:-
Quantitative research approach was used to evaluate the effectiveness of OSCE.

Research Design:-
True experimental study with pre-test and post-test design.

| Group        | Design |          |          |
|--------------|--------|----------|----------|
| Experimental | Pretest| X        | Post test|
| Control      | Pretest| -        | Post test|

Research Setting:-
The setting for the study is Child health nursing laboratory, Indirani College of nursing. This setting contains the OSCE stations with the needed child health nursing procedures in a clinically simulated environment. The existing OSCE lab was modified as per the investigator’s requirement. The numbers of OSCE stations were arranged in a sequential manner.

Population:-
The population for the present study comprised of the nursing students from various nursing colleges in puducherry. It includes the B.sc (N) and DGNM students who have child health nursing as one of their study subject in the curriculum at the time of data collection. Child health Nursing is included in the III year B.sc (N) and III year DGNM curriculum. Totally there were around 600 nursing students from the III year is available from seven Nursing colleges in puducherry.

Sample:-
Samples includes the IV year B.SC (N), I year P.B.B.sc (N) and III year DGNM students who were fulfilling the inclusion criteria

Sample size:-
The sample size is 44. In that total samples, 22 samples selected for experimental group and 22 samples for control group.

Sampling techniques:-
Samples were selected by Simple random sampling technique by computer generated random numbers.

Variables:-
Dependent Variable:-
It is the clinical competence of nursing students in selected child health nursing procedures and their perception about OSCE method of examination.

Independent Variable:-
It is the effectiveness of OSCE on selected clinical components in child health nursing.

Extraneous variable:-
It includes the Age, sex, Religion, year of study, course of study, study institution, Exposure to information on OSCE and source of information.

Sampling criteria:-

Inclusion Criteria:-
1. Nursing students who have child health nursing as their study subject.
2. Students who are doing IV year B.Sc. (N), I year P.B.B.sc (N) and III year DGNM.
3. Nursing student studying in nursing colleges at Pondicherry.

Exclusion Criteria:-
1. Students who are not available at the time of data collection.
2. Students who are not willing to participate in the study.
3. Post graduate nursing students
4. Students doing Auxiliary Nurse Midwives course.

Development and description of the tool:
- **Part I:** Demographic Variables
  It includes the variables like Age, Gender, Religion, Year of study, Course studying, Study Institution, Exposure to information about OSCE, Source of information

- **Part II:** checklist was used to assess the skill of students in these OSCE stations.

| Station | Procedure                          | Domain      |
|---------|------------------------------------|-------------|
| Station –1 | TEMPERATURE RECORDING               | Skill       |
| Station –2 | MEASURING BLOOD PRESSURE           | Skill       |
| Station –3 | KANGAROO MOTHER CARE               | Skill       |
| Station –4 | RESTING STATION                    | -----       |
| Station –5 | CARE OF BABY IN RADIANT WARMER     | Skill       |
| Station –6 | RESTRAINTS APPLICATION             | Skill       |
| Station –7 | CARE OF BABY IN PHOTOTHERAPY       | Skill       |
| Station –8 | PHYSICAL EXAMINATION              | Skill       |
| Station –9 | RESTING STATION                    | -----       |
| Station –10 | NEW BORN RESUSCITATION             | knowledge   |
| Station –11 | ANTHROPOMETRIC MEASUREMENTS        | Skill       |
| Station –12 | HISTORY COLLECTION                 | knowledge   |

- **Part III:** It consists of perception checklist to assess the perception of students regarding OSCE.

**Results And Discussion:**
The reliability of the data collection tools was assessed indicates that the ‘r’ value obtained for the OSCE stations was 0.9. The reliability of the students perception checklist was assessed by inter-rator reliability using Pearson correlation coefficient. The ‘r’ value obtained was 0.8. Data were analyzed using descriptive statistics mean and standard deviation, inferential statistics unpaired t test to test the effectiveness of OSCE method.

**Table 1:**
Showed that distribution of samples in experimental and control group based on demographic variables. Homogeneity was maintained between the experimental and control group.

**Table 2:**
Showed that distribution of samples based on the skill score between the pretest and post test among experimental group indicates that the OSCE was effective in improving the nursing care skills.

**Table 3:**
Showed that distribution of samples based on the skill score between the pretest and post test among control group indicates that the OSCE was effective in improving the nursing care skills.

**Table 4:**
Showed that OSCE checklist and perception checklist tool was most reliable.

**Table 5:**
Showed that there is a significant increase in the skill performance between the pretest and post test among experimental group indicates that the OSCE was effective in improving the nursing care skills.

**Table 6:**
Showed that there is a significant satisfactory perception level between the pretest and post test among the experimental group.
### Table No.1: Frequency distribution based on Demographic Variables

| Demographic variables | Group | Experiment(n=20) | Control(n=20) |
|-----------------------|-------|-----------------|---------------|
|                       | No.   | %               | No.           | %               |
| Age                   |       |                 |               |                 |
| 17 -18 years          | 0     | 0               | 0             | 0               |
| 18 -19 years          | 10    | 50              | 11            | 55              |
| >19 years             | 10    | 50              | 09            | 45              |
| Sex                   |       |                 |               |                 |
| Male                  | 04    | 20              | 06            | 30              |
| Female                | 16    | 80              | 14            | 70              |
| Course of study       |       |                 |               |                 |
| DGNM                  | 04    | 20              | 06            | 30              |
| B.SC (N)              | 11    | 55              | 09            | 45              |
| P.B.B.Sc(N)           | 05    | 25              | 05            | 25              |
| Year of study         |       |                 |               |                 |
| III year DGNM         | 04    | 20              | 06            | 30              |
| III year B.SC (N)     | 11    | 55              | 09            | 45              |
| P.B.B.Sc.(N)          | 05    | 25              | 05            | 25              |
| Institution of study  |       |                 |               |                 |
| AGP college of Nursing| 20    | 100             | 20            | 100             |
| SMVNC                 | 0     | 0               | 0             | 0               |
| VINAYAGA MISSION      | 0     | 0               | 0             | 0               |
| RAAK                  | 0     | 0               | 0             | 0               |
| Exposure to information regarding OSCE | | | | |
| Workshop/conference   | 0     | 0               | 0             | 0               |
| Book/Journals         | 0     | 0               | 0             | 0               |
| Previous examination  | 0     | 0               | 0             | 0               |
| None of the above     | 20    | 100             | 20            | 100             |
| Place of living       |       |                 |               |                 |
| Urban                 | 12    | 60              | 10            | 50              |
| Rural                 | 08    | 40              | 10            | 50              |
| Religion              |       |                 |               |                 |
| Hindu                 | 16    | 80              | 15            | 75              |
| Muslim                | 02    | 10              | 03            | 15              |
| Christian             | 02    | 10              | 02            | 10              |

### Table No.2: Frequency and Percentage distribution of pretest and posttest level of OSCE score in the Experimental group: (n= 20)

| OSCE Score | Pre test | Post test |
|------------|----------|-----------|
|            | n        | %         | n        | %         |
| <50        | 0        | 0         | 0        | 0         |
| 51-60      | 09       | 45        | 0        | 0         |
| 61-75      | 09       | 45        | 11       | 55        |
| >75        | 02       | 10        | 09       | 45        |

### Table No.3: Frequency and Percentage distribution of pre test and post test level of OSCE score in the control group. (n= 20)

| OSCE Score | Pre test | Post test |
|------------|----------|-----------|
|            | n        | %         | N        | %         |
| <50        | 0        | 0         | 0        | 0         |
| 51-60      | 08       | 40        | 10       | 50        |
| 61-75      | 07       | 35        | 08       | 40        |
| >75        | 05       | 25        | 02       | 10        |

### Table No.4: Comparison of post-test level of Skill difference between the experimental and control group.

| Post test     | Mean | SD   | Unpaired t test |
|---------------|------|------|-----------------|
| Experimental Group | 74.8 | 5.9  | $t = 5.5473$    |
| Control Group  | 62.4 | 8.07 | $df = 38$       |

This table showed that OSCE was effective in increasing the skill of Nursing students.
Table No 5: Reliability of tools for OSCE stations and Perception checklist

| Checklist         | Mean | r value |
|-------------------|------|---------|
| OSCE tool         | 64.1 | 0.9     |
| Perception tool   | 80.25| 0.8     |

Table No 6: Comparison of post-test level of Perception between the experimental and control group.

| Post test          | Mean | SD  | Unpaired t test   |
|--------------------|------|-----|-------------------|
| Experimental Group | 80.05| 3.82| t = 5.8097, df = 38 |
| Control Group      | 70.7 | 6.10|                   |

This table showed that the Perception was comparatively high among the experimental group.

Discussion:

The main focus of this study was to test the reliability and feasibility of the data collection tools and intervention and its acceptability and effectiveness in improving the skill and perception about OSCE. The results indicated that tools used were highly reliable.

The pilot study also showed that the sampling technique, set inclusion and exclusion criteria were appropriate for sample selection. The method of administering the OSCE techniques, and the proposed analytical measures were suitable for the study. The comparison between the groups showed that there was a statistical significance. The overall plan was effective, feasible and practicable to be applied in the main study.

Conclusion:

The pilot study on the effectiveness of OSCE as an evaluative method revealed that the data collection tools were reliable, feasible and appropriate to use for the samples in the main study and the OSCE method is effective in improving the skill performance of nursing students regarding the selected child health nursing procedures.

References:

1. Aronowitz T, Mardin J, Journal of Prof Nurs. 2017 Mar - Apr;33(2):119-125. doi: 10.1016/j.profnurs.2016.06.003
2. Solà M(1), Pulpon AM(2), Morin V(3), Sancho R(4), Cleries X(5), Fabrellas N(6), Nurse Educ Today. 2017 Feb;49:163-167. doi: 10.1016/j.nedt.2016.11.028. Epub 2016 Dec 7.
3. Jelly P(1), Sharma R(1). Iran Journal of Nurse Midwifery Res. 2017 Jan-Feb;22(1):78-80. doi: 10.4103/ijnmr.IJNMR_107_16.
4. McInulty L, Emergency Nurse. 2017 Apr 13;25(1):16. doi: 10.7748/en.25.1.16.s20.
5. Zhu X(1), Yang L(1), Br J Nurs. 2016 Jun 23;25(12):681-7. doi: 10.12968/bjon.2016.25.12.681.