



A STUDY TO ASSESS THE EFFECTIVENESS AND PERCEPTION OF OSPE AS AN EVALUATION METHOD FOR NEUROLOGICAL ASSESSMENT AMONG THE 3RD YEAR B.SC NURSING STUDENTS OF SELECTED INSTITUTIONS, GUWAHATI, ASSAM.

MS. Shanti Gurung

M.Sc. Nursing 2nd year [Medical Surgical Nursing (Neurosciences Nursing)], Rahman Institute of Nursing and Paramedical Sciences, Guwahati, Assam, India.

Prof.(MRS.) Urmijyoti Deori

M.Sc. (N) Programme, Rahman Institute of Nursing and Paramedical Sciences.

ABSTRACT OSPE is to test students' clinical and practical skills through a series of stations where students complete designated tasks under observation and evaluation. **Aim:** To assess the effectiveness and perception of OSPE as an evaluation method for neurological assessment among the 3rd year B.Sc. nursing students. **Material And Method:** The study adopted Quasi experimental design (posttest only). Implementing the Purposive Sampling Technique, 54 third-year B.Sc. nursing students from Rahman Hospitals College of Nursing in Guwahati, Assam, were chosen as the subjects of the study and were divided into two groups; experimental and control groups. Demographic Questionnaire, structured 5 Point Likert Scale Questionnaire, 5 Station Observational Checklist for OSPE on Neurological Assessment and Observational Checklist for TRD were used to collect data required for the study. The study compared the skill score obtained by OSPE(experimental group) with the skill score obtained by TRDM(control group). Descriptive and Inferential statistical analysis was used to analyze the collected data. **Result:** The mean and SD of OSPE evaluation score was 25.56±5.82 and the mean and SD of TRD evaluation score was 17.19±12.05. the t-value was 3.25. The computed 't' value ($t = 3.25$, $p = <0.002$) was found statistically significant at 0.05 level of significance. The perception result shows that 0(0%) had negative view of OSPE for neurological assessment, 21(77.8%) had neutral perception, and 6(22.22%) had positive perception. **Conclusion:** OSPE as an evaluation method for neurological assessment was effective as compare to TRD evaluation method. For perception, majority had neutral perception on OSPE as an evaluation method for Neurological Assessment.

KEYWORDS : Assess, Effectiveness, Perception, OSPE, Neurological Assessment, Nursing Students.

INTRODUCTION

A new type of practical testing called the Objective Structured Practical Examination (OSPE) tests each component of clinical competence consistently and impartially for all students sitting a practical examination at a same location.

OSPE is a clinical competency evaluation tool. There are several stations where the examination is done. Theoretical knowledge is assessed in addition to practical and problem-solving abilities.

There are two types of station; Procedure station and question. A standardized patient (SP), sometimes referred to as a simulated patient (SP), is a person who has received training to reliably and consistently represent a patient with particular medical diagnoses, histories, and symptoms. A checklist is created for each particular skill by breaking the skill down into its component parts, and each component is given a score based on how important it is in relation to a specific operation. Each station has a three-to-five-minute time slot.

OBJECTIVES

- To determine the effectiveness of OSPE as an evaluation method for neurological assessment among the 3rd year B.Sc. Nursing students
- To determine the perception of OSPE as an evaluation method for neurological assessment among 3rd year B.sc nursing students among experimental group.
- To find the association between OSPE evaluation scores and traditional return demonstration evaluation score on neurological assessment with selected demographic variable among experimental group and control group.
- To find the association between perception of OSPE as an evaluation method for neurological assessment with selected demographic variables among experimental group.

REVIEW OF LITERATURE:

Section I: Effectiveness Of OSPE Compared To Traditional Return Demonstration As An Evaluation Method.

Lohar J, Jayakumar T [2024] conducted a study among 20 third-year B.Sc. nursing students at a chosen institution in Udaipur, Rajasthan, to assess the efficacy of OSPE in improving the conduct and contentment of nursing students in mental nursing. Their study used a sampling technique in a pre-experimental one-shot case study design, utilizing a quantitative research approach. In addition, there was an equal distribution of students into the experimental and control groups. They used instruments like a satisfaction questionnaire, a structured checklist for performance evaluation, and baseline characteristics

proforma to gather their data. Furthermore, correlation analysis, ANOVA, Chi-square testing, and T-tests were used to examine their data. Because of this, the experimental group outperforms the control group in terms of satisfaction levels (77.60 vs. 55.20) and mean (22.10 vs. 18.00).

Section II: Perception Of OSPE Among Students

Patel M, Parmar PK, Nilesh G, Patel NG, Pandit N. [2022] commissioned research to evaluate OSPE's utility for formative evaluation and to find out how instructors and students feel about OSPE. Indeed, a Likert scale-based questionnaire was employed to record the opinions of staff and students on traditional demonstration and OSPE. Consequently, it shows significant that 86.6 % of students and 80 % of faculty gave positive attitude towards OSPE. Hence, OSPE was more effective compare to Traditional Practical Examination.

Section III: Knowledge And Skills Of Neurological Assessment Among Nursing Students.

Uma, Muthukumaran, Dr. Anupama K, Kaur N, Usha [2022] conducted research to determine how nursing students in the Sirmour, Himachal Pradesh, district view the OSCE as a summative means of evaluation with reference to neurological examination. In this instance, the efficiency of the OSCE in evaluating clinical abilities in the neurological examination among third-year B.Sc. nursing students was determined employing a cross-sectional descriptive survey approach. Convenience sampling was used in this case to choose 49 members. In addition, the Likert scale was utilized to gauge perception and the five station approach for OSPE observation was employed. The results of their survey indicated that the majority of students, 42 (85.7%), favored traditional methods of examination, while seven (14.3%) preferred the OSCE as a form of assessment evaluation. In conclusion, 42.9% of students felt neutrally about the OSCE technique of evaluation, whereas the majority of students (55.1%) had negative perceptions about it.

Research Methodology

Research Approach: Quantitative Research Approach.

Research Design: Quasi-experimental design (posttest only).

Below is a symbolic depiction of the research design used in this study:

Group	Intervention	Post-test
Experimental	X ₁	O ₁ P
Control	X ₂	O ₂

Figure 1: Symbolic Representation Of Research Design

Keywords:

X₁- evaluation of skills on neurological assessment by OSPE among experimental group.
X₂-evaluation of skills onneurological assessment by traditional return demonstration among control group.
O₁- obtained scores of skills on neurological assessment evaluated by OSPE among experimental group.
P- Post test evaluation of perception on OSPE as an evaluation method for neurological assessment among experimental group.
O₂- obtained scores of skills on neurological assessment evaluated by traditional return demonstration method among control group

VARIABLES

Demographic variables: Gender, Rank in the class, Attendance, Previous knowledge regarding OSPE, Source of information regarding OSPE, Previous clinical exposure in neurological department.

Research Variable: OSPE as an evaluation method to assess the Neurological assessment.

Setting: Rahman Hospitals College of nursing, Guwahati, Assam.

Population: B.sc nursing students studying in selected institutions in Guwahati, Assam.

Target Population: Nursing students who are studying 3rd year B.sc nursing in selected nursing institutions in Guwahati, Assam.

Accessible Population: 3rd year B.sc nursing students studying in Rahman Hospitals College of nursing, Guwahati, Assam.

Sample And Sample Size: B.sc nursing students who fulfill the inclusion criteria. And, the sample size is 54 students who are studying B.sc nursing 3rd year in Rahman Hospitals College of nursing, Guwahati, Assam.

Sampling Technique: Purposive sampling technique

SAMPLING CRITERIA:

Inclusion Criteria For Sampling: 3rd year B.sc nursing students who are present during the time of data collection.

Exclusion Criteria For Sampling: 3rd year B.sc nursing students who are not willing to participate.

TOOLAND TECHNIQUE:

Section-A: Demographic questionnaire.

Section-B: five Station wise Observational Checklist for OSPE for neurological assessment on experimental group.

Section-C: Observational checklist for traditional return demonstration method for control group.

Section-D: Structured five-point Likert Scale questionnaire for assessing the perception of OSPE on neurological assessment.

SCORING KEY:

Section B: Observational Checklist For OSPE On Neurological Assessment

Table I: Station Wise Observational Checklist With Score Allotted.

STATIONS	SCORES
STATION 1: Cranial Nerve	8
STATION 2: Glasgow coma scale	8
STATION 3: Reflexes	10
STATION 4: Muscle Strength Test	8
STATION 5: Balance and Co-ordination	10
TOTAL	44

Table II: Levels Of Skill According To Scores Distribution In Observational Checklist For OSPE On Neurological Assessment:

Skill Scores	Levels of skill
<14	Inadequate skill
15-32	Moderate skill
>33	Adequate skill
Total	44 scores

Section C: Observational Checklist For Traditional Return Demonstration Method On Neurological Assessment.

Table III: Levels Of Skill According To Scores Distribution In Observational Checklist For Traditional Return Demonstration Method On Neurological Assessment.

Skill Scores	Levels of skill
<14	Inadequate skill
15-32	Moderate skill
>33	Adequate skill
Total	44 scores

Section D: Structured Five-point Likert Scale Questionnaire For Assessing The Perception Of OSPE On Neurological Assessment

Table IV: Levels Of Perception According To The Five-point Likert Scale Scores.

Scores:	Levels of Perception
<25	Negative Perception
25-50	Neutral
>50	Positive Perception
Total	70 scores

CONTENT VALIDITY

Five specialists in the fields of neurosurgery, medical surgical nursing, expert who have already conducted research related to OSPE and neuroscience nursing were provided the content validity tool.

RELIABILTY OF TOOL

The structured five-point Likert scale turn out to be reliable i.e., coefficient of (r=0.99). Through Inter-Rater Reliability Method, it was determined that the observational checklists for the OSPE five stations and traditional demonstration had a reliability of (r=0.97) and (r=0.94), respectively.

Pilot Study

A pilot study with a ten percent population sample size was carried out at Rahman Hospitals College of Nursing in Guwahati, Assam.

Ethical Considerations

Formal approval obtained from Rahman Hospitals College of Nursing's Institutional Human Ethical Committee and Rahman Institution of pharmaceutical Sciences and Research.

Data Collection Process

Official permission taken from the Principal of Rahman Hospitals College of Nursing, Guwahati, Assam. The samples were collected by using purposive sampling technique. Data collection time period was (25th July-17th August 2024). Lecture cum demonstration class was given to the subjects on “25th July 2024”. Consent obtained from the subjects and assurance was given to maintain their confidentiality. Five students who volunteered to participate in OSPE as the simulated patient were instructed by the investigator. The investigator collects the data personally by using paper and pencil technique on Likert scales questionnaire and Observational checklist. The experimental group were assessed by OSPE whereas, the control group were assessed by traditional return demonstration method. The data was collected on second and third August 2024. On the first day 26 students were selected and the second day, the remaining 28 students perform the neurological assessment.

ANALYSIS AND INTERPRETATION

Table I: Frequency And Percentage Distribution Of 3rd Year B.sc Nursing Students According To Demographic Variables. n=54

Sl. No.	Demography	Sub - Group	Frequ ency	Percen tage
1.	Top 10 in class	yes	19	35.2%
		No	35	64.8%
2.	Previous Knowledge on OSPE	Yes	42	77.8%
		No	12	22.2%
3.	Source of Information about OSPE	Class Teaching	41	75.9%
		Internet	1	1.9%
		No previous knowledge	12	22.2%
4.	Previous Exposure in neurological department	yes	18	33.3%

		No	36	66.7%
5.	Conduct Neurological Examination	yes	9	16.67%
		no	45	83.33%
	Total		54	100.0%

The above table shows the 'frequency and percentage' distribution of 3rd year B.sc nursing students. Majority are not top 10 in the class 35 (64.8%). Majority of the 3rd year B.sc nursing students are having previous knowledge regarding OSPE 42 (77.8%). Among the students who had previous knowledge about OSPE, majority of them get the knowledge source from class teaching 41(75.9%). Majority of the students had no previous exposure in the neurological department 36 (66.7%). Majority of the students have never conducted any neurological examination 45 (83.33%).

Table II: Independent T-test For The Effectiveness Of OSPE As An Evaluation Method For Neurological Assessment Among Experimental Group As Compare To Traditional Demonstration Among Control Group. n=54

Group	Mean	SD	Mean difference	t-value	df	P-Value
OSPE	25.56	±5.82	8.37	3.25	53	0.002**
Traditional return demonstration	17.19	±12.05				
Total	21.37	10.28				

** Significant at $P < 0.05$, tabulated t-value = 3.25

The calculated 't' – value between traditional return demonstration skill score and OSPE skill score ($t = 3.25$, $p = < 0.002$) which was statistically significant at 0.05 level of significance. So, it signifies that, OSPE is an effective method for neurological assessment as the calculated t-value was found significant.

Table III: Frequency And Percentage Distribution On Perception Of Ospe As An Evaluation Method For Neurological Assessment Among Experimental. n=27

Perception Level	Frequency	Percentage
Negative Perception <35 scores	0	0%
Neutral Perception 35-50 scores	21	77.8%
Positive Perception >50 scores	6	22.22%

It was deduced from Table III that 0(0%) had a negative perception of OSPE for neurological assessment, 21(77.8%) had a neutral perception, and 6(22.22%) had a positive perception.

Table IV. A: Fisher's Exact Test Showing The Association Of OSPE Evaluation Score On Neurological Assessment With Selected Demographic Variables Among Experimental Group n = 27

Demographic Variables		Level of Score		Fisher's exact test	df	P-value
		Moderate	Adequate			
Among the top ten position holder in the class	Yes	5	2	0.09	1	1 ^{NS}
	No	15	5			
Previous Knowledge on OSPE	Yes	14	5	5.06	1	1 ^{NS}
	No	6	2			
Source of information about OSPE	class teaching	14	6	7.11	1	1 ^{NS}
	No previous knowledge	5	2			
Previous Exposure Neurological department	Yes	5	3	0.33	1	0.63 ^{NS}
	No	15	4			
Ever Conducted Neurological Assessment	Yes	3	1	0.33	1	1 ^{NS}
	No	17	6			

(^{NS} – Not Significant)

There is no significant association of OSPE evaluation score on Neurological Assessment with selected Demographic Variables

among Experimental Group

Table IV.B: Fisher's Exact Test Showing The Association Of Traditional Return Demonstration Evaluation Score For Neurological Assessment With Selected Demographic Variables Among Control Group n = 27

Demographic Variables		Level of Score			Fisher's exact test	df	P-value
		Inadequate	Moderate	Adequate			
Among the top ten position holder in the class	Yes	6	4	2	0.11	2	1 ^{NS}
	No	8	5	2			
Previous Knowledge on OSPE	Yes	11	8	3	12.25	2	1 ^{NS}
	No	3	1	1			
Source of information about OSPE	class teaching	11	6	2	76.07	2	0.91 ^{NS}
	Internet	1	1	1			
	No previous knowledge	3	1	1			
Previous Exposure in neurological department	Yes	10	6	4	28.03	2	0.20 ^{NS}
	No	3	2	2			
Ever Conducted Neurological Assessment	Yes	5	1	1	1	2	0.82 ^{NS}
	No	8	8	4			

(NS – Not Significant)

There is no significant association of Traditional Return Demonstration Evaluation Score for Neurological Assessment with selected Demographic Variables among Control Group

Table X: Fisher's Exact Test Showing The Association Of Perception On OSPE As An Evaluation Method For Neurological Assessment With Selected Demographic Variables Among Experimental Group n = 27

Demographic Variables		Level of perception		Fishers exact test	df	P-value
		Neutral	Positive			
Among the top ten position holder in the class	Yes	6	1	1.56	1	0.36 ^{NS}
	No	12	8			
Previous Knowledge on OSPE	Yes	13	6	12.25	1	1 ^{NS}
	No	5	3			
Source of information about OSPE	Class Teaching	13	6	12.25	1	1 ^{NS}
	No previous knowledge	5	3			
Previous Exposure in Neurological Department	Yes	6	2	0.64	1	0.67 ^{NS}
	No	12	7			
Ever Conducted Neurological Assessment	Yes	2	1	0.02	1	1 ^{NS}
	No	16	8			

(^{NS} – Not Significant)

There is no significant association of Perception on OSPE as an Evaluation Method for Neurological Assessment with selected Demographic Variables among Experimental Group.

DISCUSSIONS:

In the current investigation, the traditional return demonstration evaluation score was 17.19 ± 12.05 . The mean and standard deviation of the OSPE evaluation score was 25.56 ± 5.82 . 3.25 was the t-value ($df=52$). The mean OSPE evaluation score was found to be considerably higher than the mean traditional return demonstration evaluation score, as indicated by the computed "t" value ($t = 3.25$, $p = <0.002$), which was deemed to be statistically significant at the 0.05 level of significance.

Similar findings were reported by Relwani NR, Wadke RA, Anjenaya S, Sawardekar PN. indicating that the Objective Structured Practical Examination is a more effective formative assessment tool than the previous way. According to their study, students' average OSPE marks (18.74 ± 4.395) were statistically significantly higher than their traditional practical exam marks (13.81 ± 3.814).

The perception of OSPE for neurological assessment in the control and experimental groups, including frequency and percentage distribution. According to the interpretation, 22.22% of students had a favorable opinion of OSPE for neurological evaluation, 77.8% of students had a neutral perception, and 0% of students had a negative perception. It suggested, majority of third-year B.Sc. nursing students, or 77.8%, have a neutral opinion of OSPE as a neurological assessment tool.

Similar findings by Uma, Muthukumaran, Dr. Anupama K, Dr. Kaur N, Usha suggested that Perception of OSCE can be assess using the questionnaire with a 5-point Likert scale. According to their study's findings, majority of the students 42 had a preference for the traditional form of examination, while the minority 7 preferred the OSCE as a means of evaluation for exams. According to the overall perspective, the majority of students (55.1%) had an unfavorable opinion of the OSCE, while 42.9% had a neutral opinion of the OSCE evaluation technique.

The current investigation indicates there is no significant association between OSPE evaluation Scores and Traditional Return Demonstration Evaluation Scores on Neurological Assessment among Experimental Group and control group with Selected Demographic Variable. So, the research Hypothesis was rejected and accept the null hypothesis.

In this study, there was no association on perception of OSPE as an evaluation method for neurological assessment with the demographic variables with respect to gender, top 10 in the class, attendance in the class, previous knowledge regarding OSPE, Source of information regarding OSPE and previous exposure in neurological ward. Therefore, the research hypothesis was rejected and the null hypothesis was accepted.

CONCLUSIONS:

The present study's findings led to the conclusion that, among third-year B.Sc. nursing students at a selected institution in Guwahati, Assam, Objective Structured Practical Examination was an effective neurological assessment evaluation method as compared to the traditional return demonstration evaluation method. According to students who used OSPE evaluation method for their neurological assessment, majority view of the procedure was neutral.

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