

## Perception regarding Objective Structured Clinical Examination and Traditional Clinical Examination among Nursing Students in North East India

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### Abstract

**Introduction:** Evaluation and assessment is an important aspect for learning to assess the learner and provide feedback. This study aims to assess nursing students' perceptions regarding Objective Structured Clinical Examination (OSCE) and Traditional Clinical Examination (TCE).

**Methods:** A cross-sectional study was conducted using a total enumerative sampling technique with 122 Nursing students from the College of Nursing in Nagaland, India. A self-structured validated questionnaire, which had two sets of self-administered questionnaires on OSCE and TCE, with 15 questions, was administered to collect data on students' perception towards OSCE and TCE. The participants rated their responses using a 5-point Likert scale, ranging from "strongly disagree" to "strongly agree," regarding the strengths and weaknesses of the practical methods employed. The students' responses were analyzed using descriptive and inferential statistics.

**Results:** The study revealed that out of 122 samples, 73.77% (90) had a good perception regarding OSCE, and only 26.22% (32) had an average perception. Concerning the Traditional Clinical (TCE) examination technique, 45.90% (56) had a good perception of TCE, and 54.09% (66) had an average perception. Many students found OSCE to be more organized, fair, and reliable, with minimal disturbance from patients during the examination, compared to TCE. There was a significant association between the perception of OSCE and TCE.

**Conclusion:** Student nurses' perception of practical and clinical assessment was found to prefer OSCE over TCE. Nurse educators can focus on using OSCE as an effective evaluation tool for students and further evaluate to improve the assessment method. However, students felt that a wide variety of clinical skills were also covered in TCE.

**Keywords:** Perception, Nursing students, Objective Structured Clinical Examination, Traditional Clinical Examination

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## Introduction

Evaluation is vital in nursing practice because it supports an evidence-based approach to providing care. Evaluation can be formative or summative, occurring either during the development of a concept or at the end of a course. Methods, especially in practical exams, include projects, practical examinations, viva voce, OSCEs, and so on. In the nursing curriculum, different types of evaluations are employed for both theoretical and practical assessments.<sup>1</sup>

Miller's pyramid, introduced in 1989, provides a framework for various assessment methods with differing expected outcomes in training and education. The earlier assessment tools primarily included written exams, such as short-answer questions, essays, and multiple-choice questions, as well as bedside viva voce, targeting the initial levels of Miller's Pyramid of Assessment. However, higher levels of the pyramid, like "shows how" and "does," were not adequately assessed.<sup>2</sup> Components such as a lack of objectivity and inconsistency in assessment tools reduced the validity and practicality of the assessment tools.<sup>3</sup> To address these limitations, the objective structured clinical examination (OSCE) was introduced in 1975 by Harden to offer more objectivity and comprehensive evaluation of medical students. The high acceptance of OSCE was particularly evident during the COVID-19 pandemic when it was widely adopted to ensure smooth and continuous teaching and assessment for medical students.<sup>5</sup> Practical examinations are a vital part of nursing assessments, aimed at evaluating nursing competence or practical skills. Students undergo various steps and perform practical tasks, such as assessing patients, formulating nursing diagnoses based on priority, implementing, and evaluating care.<sup>6</sup>

The Objective Structured Clinical Examination (OSCE) is an exam specifically designed for medical health science. It encourages students to engage in active participation rather than just theory, enabling them to tackle real-world situations.<sup>7</sup> The OSCE is increasingly used in nursing education to assess

clinical skill proficiency worldwide at pre-registration and post-graduate levels.<sup>8</sup>

The traditional evaluation method assesses the practices regarding the viva or oral practical examination. Vivas are used to assess communication skills and theoretical knowledge.<sup>9</sup>

A comparative study was conducted between OSCE and TCE among 96 undergraduate student nurses in Saudi Arabia. The study revealed statistically significant differences with a higher prevalence of agreement responses among students for OSCE. Most students (95.8%) exposed to OSCE, compared to 11.9% exposed to TCE, achieved excellent grades in the exam, scoring 90%-100%. The study recommended that OSCE must be used as an integral part of the undergraduate nursing student's clinical assessment.<sup>10</sup>

Similar study was conducted among 50 first-year MBBS students in Mumbai, the study results showed a positive perception of OSCE as a better stimulus for learning (58%), with a satisfactory content of OSPE (72%), perceived as fair and unbiased (54%), having effective administration (60%), and OSCE being considered better than TCE (52%). They felt a lack of fear of facing the examiner, which relieved their anxiety about the examination.<sup>11, 12</sup> The study concluded that students felt that OSCE is an objective, unbiased, and consistent examination method, had a better analysis of structure and level of coordination, and induced lesser anxiety and fatigue.

A similar study among 160 BSc Nursing students found that OSCE was effective in terms of student preferences. There was no significant association between preference and the selected variables.<sup>13, 14, 15</sup> A similar study was conducted which showed that 77.1% of students believed that OSCE was a better exam than 61.9% of students in the TCE group. The study reported improvements in teaching quality (71.6%), connecting theory to practice (71.6%), decision-making skills (70.5%), evaluation methods (70%), and a well-developed exam structure (72%), compared to traditional methods.<sup>10, 16</sup>

Although many existing works of literature reveal perceptions and preferences toward OSCE and TCE at different levels among nursing students and the frequency of their administration, OSCE is a relatively new evaluative system in the field of nursing. Therefore, assessing the preferences and perceptions of these two evaluation methods is important for developing a better assessment system. While studies have been conducted at the international and national levels, the application of OSCE in our region is relatively recent, and no studies have yet been performed among nursing students in northeast India. This has motivated us to assess the perceptions of current nursing students regarding OSCE and TCE

### Materials and Method

The study design is a Cross Sectional Research Design. The study sample consisted of nursing students from the College of Nursing in Dimapur, Nagaland, located in Northeast India. The population consisted of the Nursing students from all program three-year Diploma in Nursing (GNM - General Nursing and Midwifery), a two-year Post Basic BSc (Post Basic BSc), and a four-year BSc program (Bachelor of Science). The sample size was determined based on the findings of the pilot study. During the study, 12 observations were made ( $p = 12$ ), with an estimated sample size of 162 at a 95% confidence level and a 5% margin of error. However, during the main study, 122 samples were recruited, due to practical constraints of participant's unavailability during the data collection period, including limited availability of eligible participants, absenteeism, and non-consent despite repeated follow-ups. The sample size was lower than the estimated requirement as only students who voluntarily provided informed consent were included in the study, which may have resulted in reduced statistical power, resulting in its limitation for generalisability. Total enumerative sampling technique was used to select the participants from the one and only College of Nursing in Dimapur. The inclusion criteria for the study were students who had attempted both OSCE and TCE two or more times.

The research data collection instrument was a self-structured, validated questionnaire. It was a self-administered questionnaire where participants filled it out themselves. Content validity was established by a panel of five experts using a four-point relevance rating scale. The Content Validity Index (CVI) was 0.91, reflecting excellent content validity of the instrument. The instrument was piloted with 12 samples. The questionnaire contained two similar sets of self-administered questions on OSCE and TCE, each with 15 questions using a 5-point Likert scale. It was in English. The instrument had two components: the first was demographic variables, and the second was a perception scale. The 5-point Likert scale ranged from 1 (Disagree) to 5 (Strongly Agree). By summing the responses for each item, scores were graded as  $\geq 70$  = good perception, 69 to 40 = average perception, and  $\leq 40$  = poor perception.

Data analysis was done using Descriptive and Inferential Statistical methods. Frequency and percentages were used for descriptive analysis, and chi-square was used to find association across the different courses of nursing and the number of times they have appeared for OSCE and TCE at  $p > 0.05$  with CI at 95%. The research approval was granted by College of Nursing research committee Research committee with study number 009/2021/NRC-CIHSR. Informed consent was obtained from all the participants before recruiting them to the study.

### Results

The data was collected from 122 Nursing students of the College of Nursing, CIHSR, to assess students' perceptions regarding OSCE and TCE.

Table 1: For OSCE, 17 (13.93%) appeared OSCE only two times, and 105 (86.07%) appeared more than two times. Regarding TCE, 66 (54.10%) appeared more than two times.

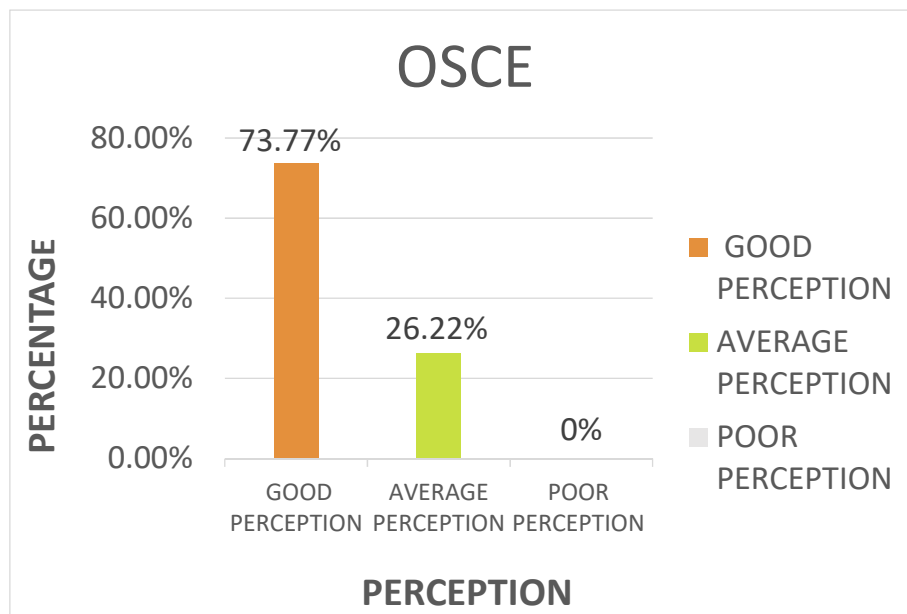
In this study, based on the perception questionnaire about the OSCE, out of 122 students, 78 (63.93%) agreed that students' mistakes could be corrected between the teacher and students after the exam. 76 (62.26%) perceived that it is well organized, and 69 (56.55%) find it fair and reliable. 78 (63.93%) see it as objective, fair, and not too distracting during the exam, 70 (57.37%). (Supplementary Table 2a)

**Table 1. Distribution of demographic data**

SL NO	DEMOGRAPHIC VARIABLES	FREQUENCY (f) n=122	PERCENTAGE (%)
1	<b>TYPE OF COURSE</b>		
A	GNM	30	24.59%
B	BSc Nursing (BSc)	75	61.48%
c	Post Basic BSc Nursing (PBBSc)	17	13.93%
2	<b>NUMBER OF TIMES APPEARED FOR OSCE AND TCE.</b>		
i	<b>OSCE</b>		
a	Two times	17	13.93%
b	More than two times	105	86.07%
ii	<b>TCE</b>	s	
a	Two times	56	45.90%
b	More than two times	66	54.10%

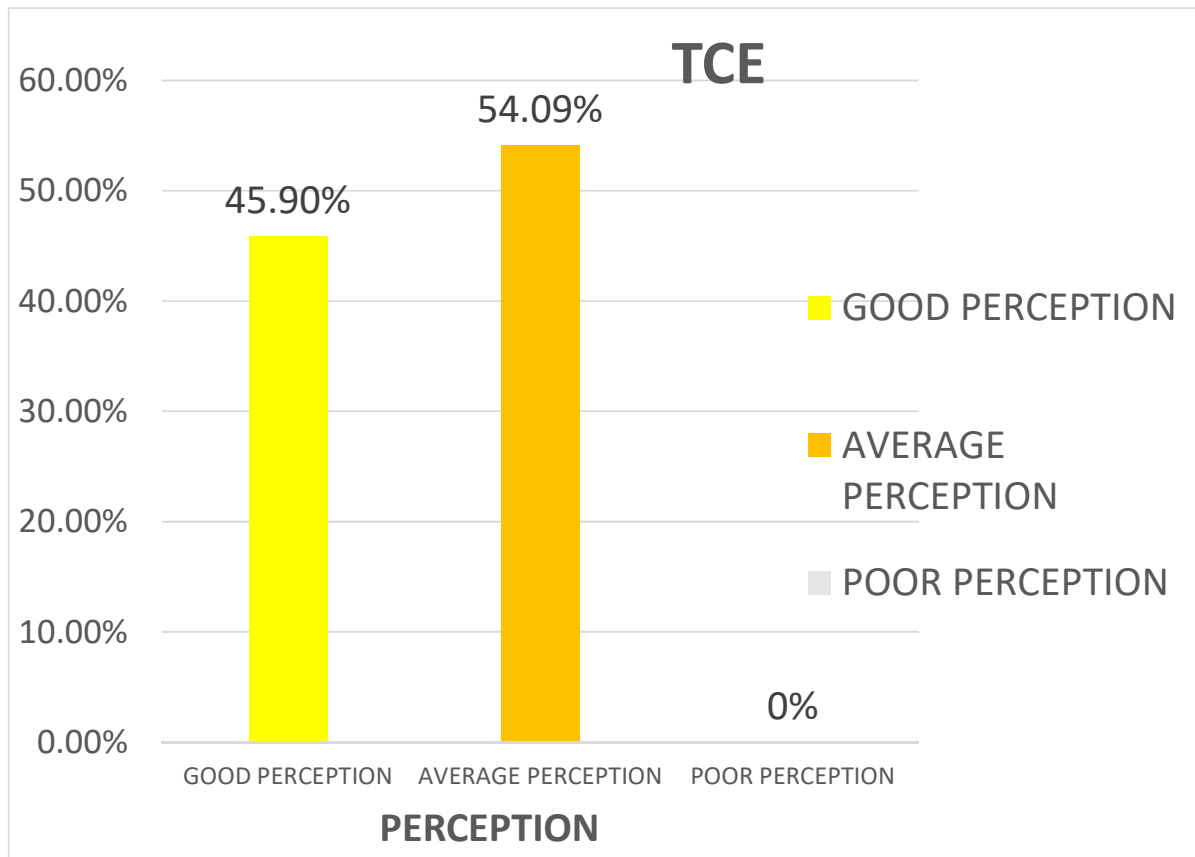
Note. OSCE (Objective structured clinical examination), (TCE) Traditional clinical examination  
GNM (General Nursing and Midwife)

Overall most students (73.77%) had a good perception of OSCE. (Fig.1), and only (45.90%) had a good perception of TCE. (Fig.2)

**Figure 1: Overall Nursing Student Perception Regarding OSCE**

Most students (73.77%) had a good perception of OSCE. None of the Students had a poor perception.

Note: OSCE (Objective structured clinical examination)



**Figure 2: Overall Nursing Students' Perception Regarding TCE**

Most students (54.09%) had an average perception of TCE, and (45.90%) of the students had good perceptions. None of the students had poor perception.

Note: TCE (Traditional clinical examination)

On the other hand, regarding the perception of students regarding the TCE, out of 122 students, 73(59.83%) agreed that students are fully aware of the exam's nature and evaluation method. 56 (45.90%) reported that it has lots of distractions with lots of noise. 47 (38.52%) agree that teachers closely observe each student and have fewer chances of biases. 50 (40.98%) agree that time allotment is less, and 71(58.19%) feel that a wide variety of clinical skills are covered in TCE.

As shown in Table 3, participants demonstrated a significantly better perception of OSCE 90 (73.77%) than TCA 56 (45.90%).

**Table 3. Distribution of overall perception of OSCE and TCA**

OSCE1	FREQUENCY (f) n=122	PERCENTAGE (%)
Good	90	73.77%
Average	32	26.22%
TCA		
Good	56	45.90%
Average	66	54.09

## ASSOCIATION OF PERCEPTION WITH COURSE AND NUMBER OF TIMES

Table 4 (a) Association of perception of OSCE/TCE with Demographic variables:

Perception of OSCE			P-value calculated by Chi-square	P value
Course	Good	Average		
GNM	25	5	2.23	>0.05
BSC	54	21		
PBBSc	11	6		
<b>NO OF TIMES</b>				
Two times	11	6	0.82	>0.05
>2times	79	26		
Perception of TCE			P Value calculated by Chi-square	P value
Course	Good	Average		
GNM	21	9	12.9	*<0.05
BSC	25	50		
PBBSc	10	7		
<b>NO OF TIMES</b>				
Two times	26	30	0.08	>0.05
>2times	30	36		

\*Association that was found to be significant at a p-value of 0.05%

**Result:** There was a statistically significant association of TCE with the various courses of BSc, GNM & PBBSc course at the 5% level of significance (0.05%). No association was found with the other demographic variables.

### Discussion of Findings

The study aimed to determine students' perceptions of OSCE and TCE. Our study found that out of 122 students, 90(73.77%) had a good perception of OSCE, while only 56(45.90%) had a good perception of TCE. The study also reported that 76 (62.29%) agreed that OSCE is well-organized and structured, and 63 (51.63%) agreed that there is a uniform scenario for all students, which is fair in assessment, thereby decreasing the

chance of bias. A similar study reported that 95.4% agreed the OSCE examination was well-organized, well-structured, and appropriately sequenced, less stressful, allowing students to compensate in some areas and minimize the risk of failure. Thenursing students agreed that the OSCE was fair in testing knowledge and skills, and minimized their chance of failure in the exam compared to other test formats.<sup>17,18,19,20</sup> However, in another study conducted in Egypt, 52.7% of the respondents believed that the OSCE examination is more complex than a written examination, and 69% found it exhausting and lengthy. In comparison, 88% found it more stressful.<sup>21,22</sup> Many students preferred OSCE more, perhaps because they had gone through the process multiple times and found it familiar and more accessible.

The present study revealed that 70% of GNM students had a positive perception, while 30% had an average perception of traditional examinations. In contrast, only 33.33% of BSc students had a good perception, while 66.67% had an average perception. Additionally, 59% of Pbbsc students had a good perception, and 41% had an average perception. In the study reported by Mondal, 73.8% of the students expressed a preference for OSCE as a better formative assessment tool, whereas 9.5% preferred conventional examinations.<sup>23</sup> In comparison, a study reported by Mohamed showed a significantly higher (percentage) 89.6% for OSCE compared to TCE (76.2%). Students in OSCE agreed that the environment was noise-free, there was enough light, and the exam was more well-structured than those in TCE.<sup>10</sup> Cross-sectional study on OSCE vs. TCE student perception and preference in Nigerian Medical School who were previously exposed to OSCE and TCE using a structured questionnaire. The study revealed that 131 (84%) respondents felt TCE was a more complex examination, and 142 (91%) felt OSCE was easier to pass. It concluded that students preferred OSCE as a method of assessing clinical competence and considered it a more valid and reliable examination method. No significant association was found between OSCE and courses ( $p < 0.05$ ), but a Significant association was found between TCE and courses ( $p < 0.05$ ). A study by Dhandapani found that 85.51% of nursing students had favorable attitudes, and 13.77% had moderately good attitude toward OSCE.<sup>14</sup>

Association of the level of attitude towards OSCE among B.Sc. Nursing students with their selected demographic variables, Age, had a significant association with the level of attitude. The other demographic variables did not show a statistically significant association with the level of attitude toward OSCE.

### Conclusion and Recommendation

This study found that student nurses preferred OSCE over TCE. Many students performed OSCE more than twice as often as TCE, which may have

increased their familiarity with the process. Students considered OSCE to be more organized, fair, and reliable, with minimal disturbance from patients during the exam, compared to TCE, where they felt the time allotment was insufficient. However, students believed that TCE covered a broader range of clinical skills. Therefore, it is highly recommended that nurse educators and faculty explore different clinical assessment methods, evaluate students' preferences, and emphasize the importance of identifying areas for improvement to enhance learning. The study can help the researcher gain insight into the examination process and improve their scores. A similar study using an experimental research design could be conducted to measure students' knowledge and attitudes regarding OSCE and TCE.

### Ethical Approval

The research approval was granted by College of Nursing research committee Research committee with study number 009/2021/NRC-CIHSR. Informed consent was obtained from all the participants before recruiting them to the study

**Competing Interest:** The authors declare that there are no conflicts of interest associated with this manuscript.

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