

CHALLENGES OF AN OBJECTIVE STRUCTURED CLINICAL EXAMINATION AMONG SELECTED SUDANESE NURSING FACULTIES

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ABSTRACT

Background: The Objective Structured Clinical Examination assesses clinical competence but encounters logistical, scoring, stress, and bias challenges, affecting its validity and reliability. **Objectives** to determine the challenges associated with OSCE implementation among selected Sudanese nursing faculties. **Methods:** A descriptive cross-sectional study conducted from January 2021 to March 2023 across four Khartoum nursing faculties involved 54 OSCE examiners using observational checklists and questionnaires. **Results:** The study found that, internal consistency of the study tools was satisfactory, with Cronbach's alpha values of 0.81 for the observational checklist, 0.80 for the self-administered questionnaire. The environment and equipment availability at OSCE stations were generally adequate, although some challenges were noted, including varying levels of examiner experience. **Conclusion:** The study identified challenges in implementing OSCEs in Sudanese nursing faculties, such as logistical constraints, examiner experience variability, and resource limitations. Addressing these issues is essential for enhancing OSCE effectiveness, fairness, and quality in nursing education.

KEYWORD:- OSCE, Clinical competence, Nursing education, Challenges.

INTRODUCTION

The Objective Structured Clinical Examination (OSCE) is a widely recognized method for assessing clinical competencies in nursing education, known for its objectivity and reliability. At Khartoum governmental nursing faculties, the implementation of OSCE has shown promising results in terms of validity and reliability. Research indicates that OSCE provides a structured, harmonized, and egalitarian assessment method, beneficial for nursing students' clinical evaluations.^[1] A study comparing OSCE with traditional observational checklists found that students scored higher and preferred OSCE, highlighting its objectivity and effectiveness in clinical evaluations.^[2] The use of high-fidelity simulations and standardized patients in OSCE enhances the fidelity of nurse-patient interactions, ensuring comprehensive assessment of clinical competencies, including cognitive and critical thinking

skills.^[3] Additionally, the development of specific OSCE tools, such as the intravenous injection care scale, further supports its application in nursing education.^[4] Despite challenges in objectivity and reliability in clinical competence assessment, OSCE has been shown to overcome these issues effectively, with nursing faculty demonstrating positive attitudes towards its implementation.^[5] The identification and analysis of clinical errors and near-miss errors among nursing students underscore the need for reliable assessment methods like OSCE to improve clinical practice and error management.^[6] Validity and reliability testing of OSCE checklists for medical-surgical nursing competencies revealed that most checklists are valid and reliable, although some require further refinement.^[7] The high internal consistency reliability of OSCE, as demonstrated in a study on basic thoracic ultrasound competencies, further supports its use in clinical skills

assessment.^[5] Finally, students' perspectives on OSCE indicate its acceptance as a fair and comprehensive assessment tool, despite some finding it stressful, thus validating its effectiveness in clinical skills evaluation.^[8] Overall, the evidence supports the validity and reliability of OSCE in nursing education at Khartoum governmental faculties, making it a strong tool for clinical competence assessment.

METHODS

Study design: This study utilized a descriptive cross-sectional institutional-based design.

Study area: The study was carried out in governmental nursing faculties located in Khartoum State, including Alneelain University, Omdurman Islamic University, Bahri University, and Alzaim Alzhari University.

Study population: The study population comprised the final medical-surgical nursing OSCE station profile and the OSCE examiners who conducted the OSCE.

Inclusion criteria: Nursing examiners who participated in the final medical-surgical nursing OSCE in these faculties. Nursing examiners are willing to participate in the study.

Exclusion criteria: The nursing examiners who are unwilling to participate in the study and who have not been involved in the summative end-of-career final medical-surgical nursing OSCE. Examiners not involved in the final medical-surgical nursing OSCE.

Sampling Technique and Sample size: A purposive sampling technique was employed to select the participants. The sample size consisted of 54 nursing examiners who participated in the final medical-surgical nursing OSCE and the final medical-surgical nursing OSCE stations profile.

Study tools

Tool No. (1) observational checklist: this tool was developed by researchers based on extensive literature review and previous studies to assess the station's environment and availability of equipment. Tool No. (2) Self-administering Questionnaire: This tool assessed the nursing examiners' backgrounds and challenges in validating OSCE stations. It included questions on university criteria, department, years of experience, number of OSCE training workshops attended, sources of preparation for OSCE, and common challenges faced during OSCE conduction.

Validity and Reliability of study tool: To ensure the validity and reliability of the study tools, the following steps were taken:

Face and Content validity (Expert review): Experienced associate professors in medical-surgical nursing from Karary University and the International University of Africa, along with a medical education expert, evaluated the study tools for face and content validity.

Pilot study: A pilot study conducted in a similar study population and the checklist of those who met the criteria of the study. Feedback from the participants

was collected to evaluate the tools' effectiveness in measuring the intended constructs.

Internal consistency: The reliability of the study tools was evaluated using Cronbach's alpha to determine the internal consistency of the items within each tool. Cronbach's alpha values were calculated for the two primary instruments used in this study: the observational checklist and the self-administered questionnaire. Cronbach's alpha values were found to be 0.81 for the observational checklist and 0.80 for the self-administered questionnaire. These values show a satisfactory to high level of internal consistency, suggesting that the tools are reliable for assessing the constructs of interest in this study.

Data collection techniques

Observational Checklist: The researcher conducted direct observations to evaluate the various elements and content of the exam using a detailed checklist. During the exam, the researcher carefully observed each candidate's performance, noting specific behaviors, actions, and responses that aligned with the criteria outlined in the checklist. This process was done directly and non-disruptively, ensuring that the examination proceeded smoothly without interruptions or distractions. The observations were systematically recorded to provide a correct and comprehensive assessment of each candidate's performance.

Self-Administering Questionnaire: was provided individually to each examiner involved in the assessment process. The researcher remained present during the completion of the questionnaires to offer any necessary guidance and clarification. This ensured that the examiners understood each question thoroughly and provided correct and complete responses.

Data analysis: Data were analyzed using the Statistical Package for Social Sciences (SPSS) version 25. Descriptive statistics, including simple frequency tables and figures, were used to present the data. The chi-square test was employed to decide significance, with a p-value of 0.05 considered statistically significant.

Ethical considerations: The study was approved by the Institutional Review Board (IRB) of the postgraduate faculty at Karary University. Permission was obtained from the deans of the faculties of nursing sciences and heads of medical-surgical nursing departments at the participating universities. Verbal consent was obtained from all study participants. All participants were ensured anonymity and confidentiality, and their privacy and dignity were protected. Participants had the right to refuse to answer any question.

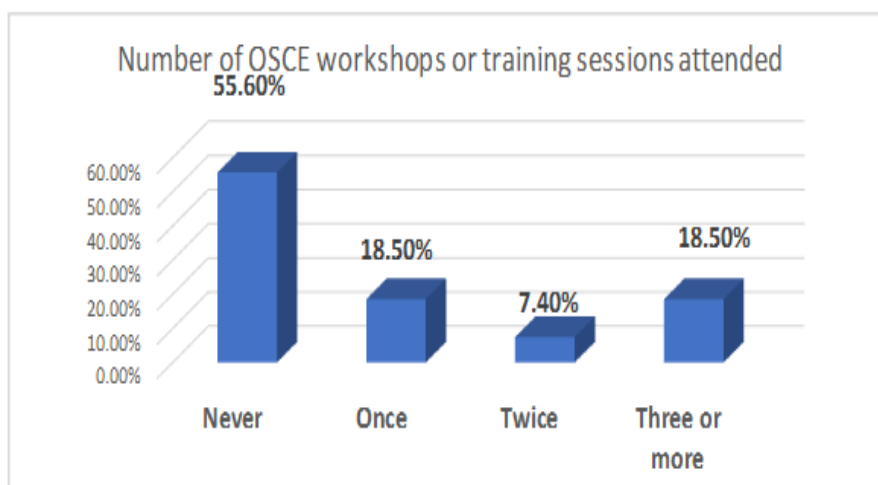
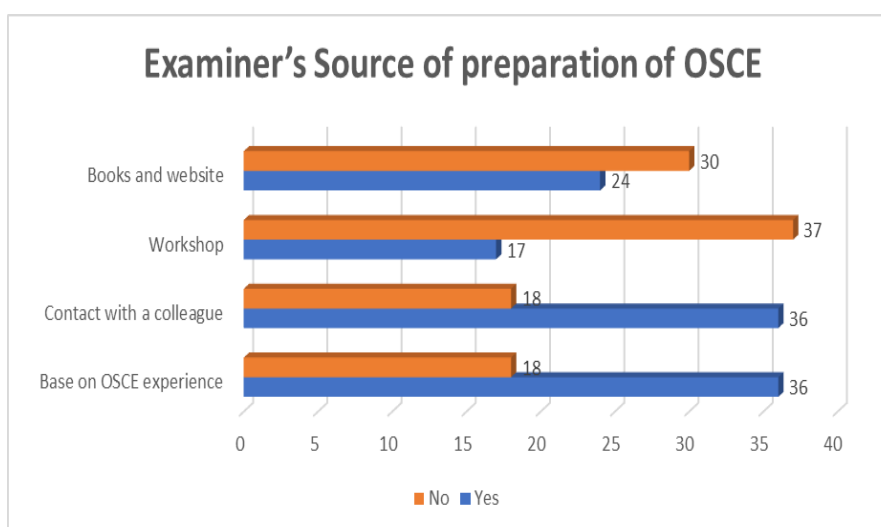
RESULTS

Table 1: Distribution of Examiners According to Years of Experience in Conducting OSCE and Academic Qualifications (N = 54).

Variable	Category	Frequency	Percent
Examiner's Years of Experience in conducting OSCE	0 - 5 years	13	24.1%
	5.1 - 7 years	21	38.9%
	7.1 - 10 years	14	25.9%
	More than 10 years	6	11.1%
	Total	54	100%
Mean \pm SD 2.24 \pm 0.95			
Examiner's Qualification	BSc	6	11.1%
	M.Sc.	30	55.6%
	PhD	18	33.3%
	Total	54	100%

This table presents the demographic characteristics of examiners based on their years of experience in conducting Objective Structured Clinical Examinations (OSCE) and their academic qualifications. The largest proportion of examiners (38.9%) had between 5.1 and 7 years of experience, with a calculated mean of 2.24 years

(± 0.95 SD), indicating a moderate level of professional exposure to OSCE practices. Regarding academic qualifications, most examiners (55.6%) held a Master of Science (M.Sc.) degree, followed by 33.3% holding a Doctor of Philosophy (Ph.D.) and 11.1% holding a Bachelor of Science (B.Sc.) degree.

**Fig. 1: Number of OSCE workshops or training sessions attended by examiners (n=54).****Fig. 2 :Examiner's Sources of Preparation for Conducting OSCE (N = 54).**

This figure depicts the various sources utilized by examiners to prepare for conducting Objective Structured Clinical Examinations (OSCE). The most frequently reported sources included previous OSCE experience (66.7%) and consultation with colleagues

(66.7%). Fewer participants reported relying on workshops (31.5%) and books or websites (44.4%) as preparation sources. These findings highlight a preference for practical and peer-based learning over formal educational resources.

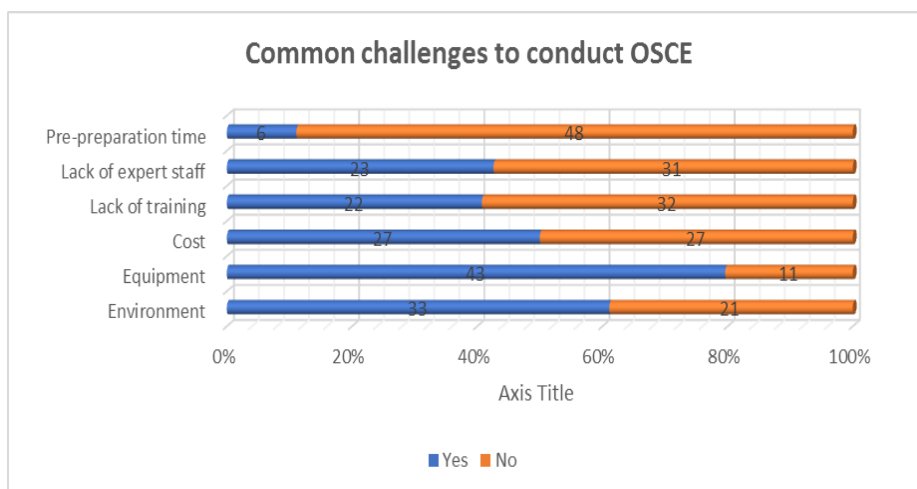


Fig. 3: Common Challenges Faced by Examiners in Conducting OSCE (N = 54).

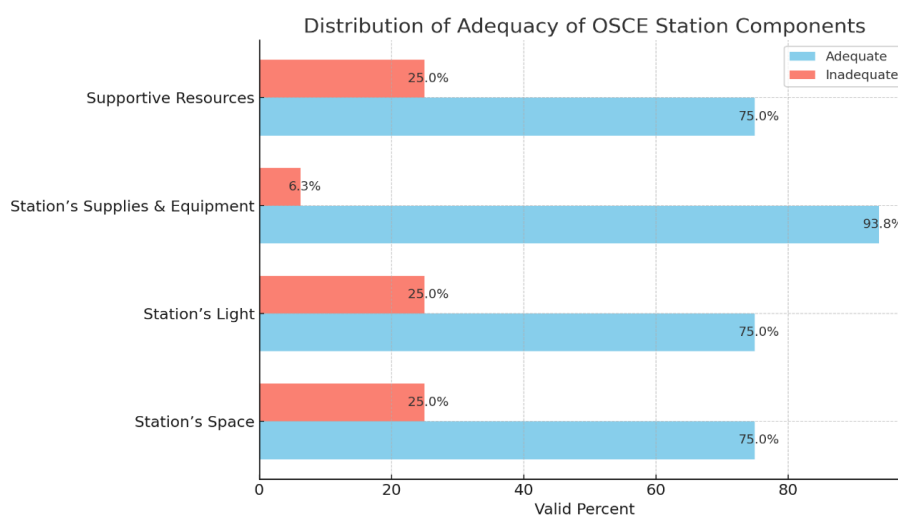


Fig. 4: Distribution of Adequacy of OSCE Station Components.

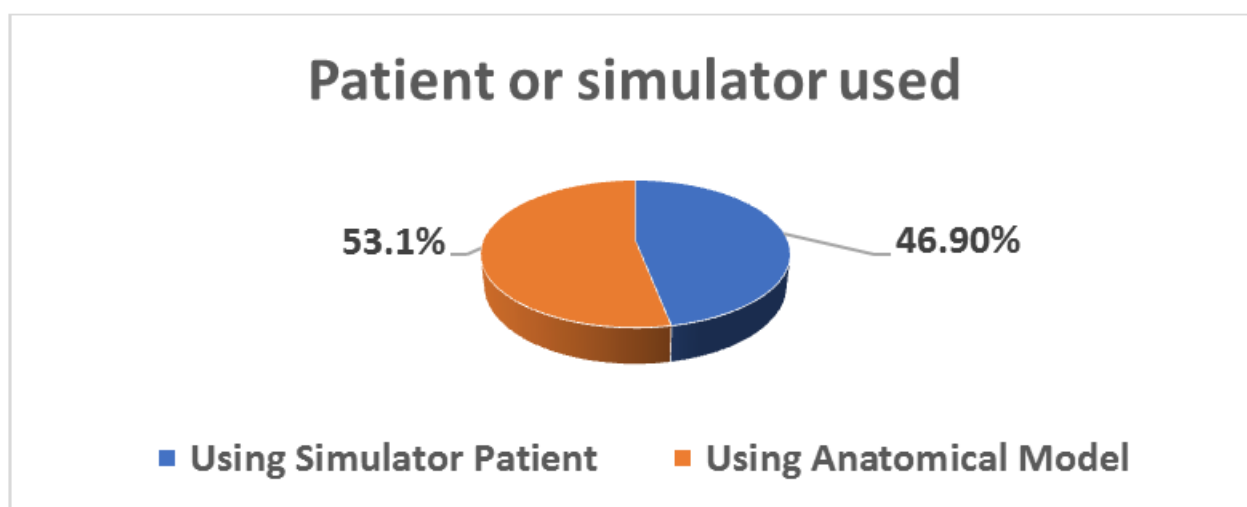


Fig. 5: Patient or simulator used in OSCE stations (n=32).

DISCUSSION

The present study aimed to assess Challenges of an Objective Structured Clinical Examination among selected Sudanese nursing faculties, the analysis of station components revealed that while most stations had adequate space (75.0%) and lighting (75.0%), there were still significant areas with inadequacies. Adequate supplies and equipment were found in 93.8% of stations, but the remaining 6.3% require improvements. Previous studies have shown that a well-equipped and adequately spaced examination environment is essential for the smooth conduct of OSCEs.^[9] Adequate supportive resources (75.0%) was present in most stations. However, to ensuring adequate supportive resources is critical for minimizing stress and optimizing performance.^[10] The study found a balanced use of simulator patients (46.9%) and anatomical models (53.1%). The choice between simulators and models should be based on the specific learning objectives and the nature of the skills being assessed.^[11] Both methods have their advantages, but a clear guideline on their use can enhance the realism and effectiveness of OSCEs. The findings of this study highlight several key areas for improvement in the development and implementation of OSCE checklists and the setup of OSCE stations.

Recommendations

Improvement of Physical Environment; Ensuring adequate space, lighting, and equipment in OSCE stations is crucial. Regular audits and feedback from examiners and students can help identify and address inadequacies. Enhanced Supportive Resources; Providing adequate supportive resources, such as waiting rooms and personal amenities, can help reduce stress and improve performance during OSCEs. Proper regulation of student rounds is also essential for maintaining the integrity and efficiency of the examination process.

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Conflicts of interest

We have no affiliations with or involvement in any organization or entity with any financial or non-financial interest in the subject matter or materials discussed in this manuscript.

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