Original Research

DEVELOPMENT AND EVALUATION OF A RUBRIC-BASED OSCE FOR INFORMED CONSENT COMPETENCY IN UNDERGRADUATE MEDICAL STUDENTS

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ABSTRACT

Background: Competency-based medical education (CBME) highlights the importance of communication, ethics, and professionalism in clinical practice. Obtaining informed consent is a key skill that reflects these competencies. However, assessment of informed consent during Objective Structured Clinical Examinations (OSCEs) often relies on checklist-based methods, which may not adequately capture the quality of communication or ethical reasoning. This study aimed to develop and evaluate a rubric-based OSCE approach to assess informed consent competency among undergraduate medical students.

Materials and Methods: A quasi-experimental educational intervention was conducted among 120 Phase III MBBS students. A structured analytic rubric aligned with CBME competencies was developed and refined using a two-round Delphi process involving experienced faculty members. Faculty were oriented through calibration sessions prior to implementation. The same cohort of students was assessed in both pre- and post-intervention phases under comparable conditions. Student performance was analyzed using paired t-tests, inter-rater reliability using Intraclass Correlation Coefficient (ICC, two-way random effects), and stakeholder perceptions using Likert-scale surveys and thematic analysis.

Results: Mean student scores improved from 58 ± 8.4 before implementation to 80 ± 6.9 after introduction of the rubric ($p < 0.001$). Inter-rater reliability demonstrated good agreement (ICC = 0.82). Most participants (78%) reported positive perceptions, highlighting improved clarity, fairness, and feedback quality.

Conclusion: Rubric-based OSCE assessment provides a structured and reliable method for evaluating informed consent competency. It supports more transparent assessment and facilitates meaningful feedback, thereby strengthening competency-based evaluation of communication and ethical skills**.** Further studies with comprehensive psychometric evaluation are recommended.

Keywords: Informed Consent; Education, Medical, Undergraduate; Clinical Competence; Objective Structured Clinical Examination; Educational Measurement.

INTRODUCTION

Competency-based medical education aims to prepare graduates who are not only clinically competent but also capable of effective communication and ethical decision-making. Among these skills, obtaining informed consent is a fundamental responsibility in clinical practice. It requires the clinician to communicate clearly, respect patient autonomy, and address concerns in a sensitive and understandable manner.

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Objective Structured Clinical Examinations are widely used to assess clinical competencies in undergraduate training. Traditionally, assessments in OSCEs have relied on checklist-based scoring systems. While these tools ensure standardization, they tend to focus primarily on whether specific steps are completed, rather than how effective communication occurs.

In recent years, there has been increasing interest in rubric-based assessment as a means of addressing this limitation. Analytic rubrics provide clearly defined performance levels and descriptors, allowing examiners to evaluate not only task completion but also the quality of interaction. Such approaches may improve consistency in scoring and provide more meaningful feedback to learners.

Considering the limitations of conventional checklist-based methods, this study was undertaken to develop and evaluate a rubric-based OSCE framework for assessing informed consent competency in undergraduate medical students.

Objectives

1. To develop and evaluate a structured rubric for assessing informed consent competency.
2. To orient faculty members to rubric-based assessment strategies.
3. To implement a rubric-based OSCE station for undergraduate medical students.
4. To evaluate student performance using rubric-based assessment.
5. To explore student and faculty perceptions regarding the rubric-based assessment approach.

MATERIALS AND METHODS

Study design

This study employed a quasi-experimental educational intervention design. The intervention consisted of introducing a structured analytic rubric to replace conventional checklist scoring during an OSCE station assessing informed consent communication.

Participants

The study was conducted in a government medical college where the competency-based undergraduate medical curriculum is implemented and OSCE is routinely used for both formative and summative assessments. The participants included 120 Phase III MBBS students. Faculty members experienced in conducting OSCE assessments served as examiners. Consent for participation was taken as per format.

Development of the rubric

Key competencies related to informed consent were identified from competency-based curriculum guidelines and communication training frameworks. These domains included introduction and rapport building, explanation of diagnosis and procedure, discussion of risks and benefits, explanation of alternatives, respect for patient autonomy, addressing patient questions, and ethical considerations.

For each domain, performance descriptors were developed across four levels ranging from “Not demonstrated” to “Excellent”.

Rubric Refinement through Delphi Technique

Content refinement of the rubric was carried out using the two-round Delphi technique (Annexure3). Faculty experts from clinical and medical education disciplines reviewed the rubric over two rounds and provided feedback regarding clarity, relevance, and completeness. Consensus exceeding 80% agreement was achieved for the final rubric.

Faculty sensitization

Before implementing the rubric in the OSCE, faculty examiners attended a structured orientation session. During this session, rubric domains and scoring criteria were explained, and examiners practiced scoring sample scenarios to ensure calibration and consistency.

Implementation of OSCE

Students participated in a simulated OSCE station requiring them to obtain informed consent from a standardized patient for a routine surgical procedure scenario. Each encounter lasted 10 minutes and involved trained standardized patients. Examiners assessed student performance in real time using the final rubric.

Data collection

Data was collected from multiple sources including rubric score sheets, examiner ratings, feedback form, perception surveys, and focus group discussions.

Statistical analysis

Student performance before and after rubric implementation was compared using paired statistical analysis. Inter-rater reliability was assessed using the Intraclass Correlation Coefficient (ICC). ICC was calculated using a two-way random-effects model for absolute agreement. Perceptions were assessed using a structured questionnaire with Likert-scale items (1–5).

RESULTS

Rubric development and implementation

The rubric for assessing informed consent competency was successfully developed and refined through a two-round Delphi process involving faculty experts from clinical and medical education backgrounds. Consensus regarding the relevance, clarity, and completeness of rubric domains and performance descriptors was achieved with **85% agreement**. Prior to implementation, faculty examiners participated in structured sensitization and calibration sessions to ensure a consistent understanding of rubric domains and scoring criteria.

Student performance outcomes

Implementation of the rubric-based OSCE was associated with a significant improvement in student performance. The mean OSCE score increased from **58 ± 8.4** during the pre-implementation phase to **80 ± 6.9** following rubric implementation (**$p < 0.001$**), indicating a meaningful educational impact of the structured assessment approach (**Table 1**).

Inter-rater reliability

Inter-rater reliability analysis demonstrated **good agreement between examiners**, with an Intraclass Correlation Coefficient (**ICC = 0.82**). This finding indicates improved consistency and reduced variability in scoring when using the rubric-based assessment tool.

Stakeholder perceptions

Both students and faculty reported positive perceptions regarding the rubric-based OSCE

assessment approach. Overall positive perception was **78%**, with **76% of students** and **80% of faculty members** indicating that the rubric improved clarity of expectations, transparency of evaluation, and usefulness of feedback (**Table 2**).

Qualitative feedback from participants further highlighted themes of improved clarity of performance expectations, perceived fairness of assessment, and the usefulness of structured feedback in identifying areas for improvement.

The key outcomes related to rubric development, implementation, and improvement in student performance are summarized in (**Figure 1)**.

DISCUSSION

In this study, implementation of a rubric-based OSCE was associated with a significant improvement in the assessment of informed consent competency among undergraduate MBBS students. Competency-based frameworks emphasize communication and professionalism as essential attributes of a competent physician[4]. The observed 22% improvement in post-implementation OSCE scores, along with good inter-rater reliability (ICC = 0.82), suggests that rubric-guided assessment not only enhances student performance but also improves consistency in scoring.

These findings are in line with earlier evidence indicating that unstructured checklists often fail to capture higher-order communication and ethical competencies, whereas analytic rubrics provide clearer performance descriptors and thereby improve assessment reliability. [5]

The rubric was refined through a two-round Delphi technique, achieving over 80% expert consensus, consistent with recommendations in recent medical education literature. Similarly, validation of the PRIME-NP model has shown that structured expert consensus strengthens rubric reliability and acceptability across clinical settings.[6] Quinlan and King (2024) demonstrated that two round Delphi-technique OSCE rubrics enhance content validity and examiner agreement, supporting the methodological rigor of the present study. [7]

Faculty sensitization and calibration also contributed to improved inter-rater reliability. This is comparable to findings by Watari et al. (2021), who reported that rater training and moderation reduce variability in OSCE scoring.[8] Both students and faculty in the present study reported positive experiences, further highlighting the educational value of rubric-based OSCEs, particularly in providing structured and meaningful feedback that supports learner reflection and confidence.[7]

Simulation-based assessment, when combined with structured rubrics, has been shown to enhance communication skills, ethical reasoning, and learner confidence. McGaghie et al. (2010) emphasized that simulation coupled with structured assessment leads to better educational outcomes, supporting the use of standardized patients and rubric-based scoring for assessing informed consent competency.[9]

In addition, systematic reviews have noted that many communication-skill rating scales used in OSCEs lack adequate psychometric rigor.[5] the use of a structured rubric, informed by the Delphi technique, helps address these limitations by providing clear performance descriptors and improving the consistency and transparency of assessment. This approach also brings assessment practices closer to established psychometric standards, although comprehensive psychometric validation was beyond the scope of this study.

Overall, the findings of this study align with current evidence and support the integration of rubric-based OSCEs into CBME and AETCOM-aligned assessment strategies. However, the absence of longitudinal follow-up limits evaluation of transfer of these skills into clinical practice. Future research should examine retention of communication competencies during internship and early clinical training.

Educational Implications

The findings of this study have important implications for competency-based medical education. Traditional checklist-based OSCE scoring often focuses on completion of procedural steps rather than the quality of communication and ethical reasoning. The rubric developed in this study incorporates structured performance descriptors aligned with competency domains related to communication, professionalism, and patient autonomy.

Implementation of rubric-based OSCE assessment may therefore enhance transparency and consistency in evaluation while providing learners with clearer expectations and constructive feedback. Such approaches may support the assessment of AETCOM competencies and could be extended to other communication-intensive clinical tasks, including breaking bad news, counseling, and shared decision-making.

Integration of rubric-based assessment within routine OSCE stations may strengthen competency-based evaluation in undergraduate medical education and contribute to improved training in patient-centered communication skills.

Limitations

This study has several limitations. It was conducted at a single institution with one cohort, limiting generalizability. The quasi-experimental design introduces potential learning effects in pre–post assessment. Additionally, comprehensive psychometric validation, including construct validity and internal structure analysis, was not performed. Future studies should address these aspects and explore longitudinal outcomes.

CONCLUSION

Rubric-based OSCE assessment represents a structured and feasible approach for evaluating informed consent competency among undergraduate medical students. The findings of this study highlight the potential of rubric-based OSCE assessment to strengthen evaluation of communication and ethical competencies in undergraduate medical education. By incorporating clearly defined performance descriptors, the rubric improved transparency, scoring consistency, and meaningful feedback for learners, however, further research is required to establish comprehensive psychometric validity. Wider adoption of such approaches may strengthen competency-based assessment, particularly in areas involving communication and ethical practice—such as counseling, breaking bad news, and shared decision-making.

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Tables

Table 1

Comparison of student performance before and after rubric-based OSCE

Assessment Phase	Mean Score (%)	Standard Deviation
Pre-implementation	58	±8.4
Post-implementation	80	±6.9

Table 2

Perceptions of students and faculty regarding rubric-based OSCE

Stakeholder Group	Positive Perception (%)
Students	76%
Faculty	80%
Overall	78%

Figure Legend

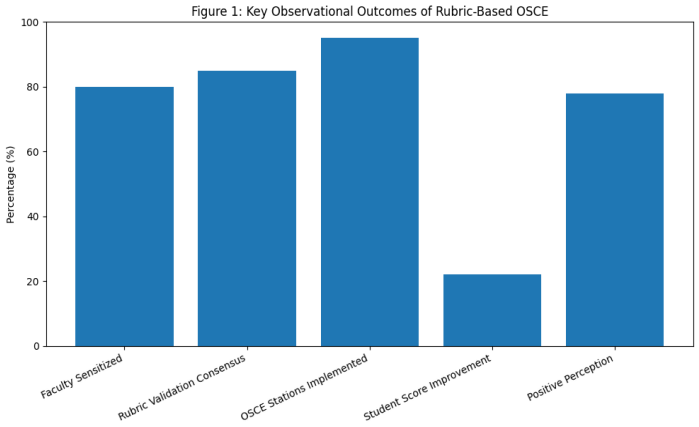

Figure 1: Key outcomes following implementation of rubric-based OSCE, including rubric validation, faculty sensitization, improved student performance, and positive stakeholder perceptions

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