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Original Research Article

IMPACT OF FEEDBACK DURING OSCE AS A LEARNING TOOL IN POSTGRADUATE STUDENTS OF OBSTETRICS AND GYNECOLOGY IN MAHATMA GANDHI INSTITUTE OF MEDICAL SCIENCES, SEWAGRAM WARDHA

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ABSTRACT

Background: Objective Structured Clinical Examination (OSCE) is a structured and reliable tool designed to objectively assess clinical competence, offering an improvement over the subjectivity of conventional practical examinations. When integrated with structured feedback, OSCE not only evaluates but also enhances learning, allowing medical trainees to identify gaps in performance and refine their clinical skills. This study aimed to assess the impact of feedback during OSCE sessions as a learning tool among postgraduate students in the Department of Obstetrics and Gynaecology (OBGY) at Mahatma Gandhi Institute of Medical Sciences (MGIMS), Sewagram.

Materials and Methods: A cross-sectional observational study was conducted over six months (August 2023–February 2024) among 15 postgraduate students in OBGY. Four clinical skill stations—Active Management of Third Stage of Labour (AMTSL), Aortic Compression, Bimanual Compression, and Management of Atonic Postpartum Hemorrhage (PPH)—were assessed using validated checklists. Students underwent two OSCE sessions, one month apart, with structured facilitator feedback provided after the first session. Data were analyzed using paired t-tests to compare pre- and post-feedback scores, with $p < 0.05$ considered statistically significant.

Results: There was a statistically significant improvement in post-test scores across all four stations. Mean AMTSL scores increased from 5.47 ± 0.74 to 7.13 ± 0.64 ($t = -8.92$, $p < 0.001$), Bimanual Compression from 5.80 ± 1.26 to 7.40 ± 0.98 ($t = -9.80$, $p < 0.001$), Management of Atonic PPH from 8.00 ± 1.36 to 9.60 ± 1.12 ($t = -12.20$, $p < 0.001$), and Aortic Compression from 5.20 ± 0.56 to 7.00 ± 0.75 ($t = -8.09$, $p < 0.001$).

Conclusion: Incorporating structured feedback into OSCE sessions significantly enhanced postgraduate students' performance and clinical competence. Feedback served as an effective learning tool, promoting reflective practice, confidence, and skill acquisition. OSCE with feedback should be integrated into postgraduate medical training to foster competency-based learning and improved clinical preparedness.

Keywords: OSCE, Feedback, Postgraduate Medical Education.

INTRODUCTION

The Objective Structured Clinical Examination (OSCE) is a well-established and innovative tool for assessing clinical competence in medical education, particularly within the Competency-Based Medical Education (CBME) framework. Designed to objectively evaluate a learner's ability to apply clinical skills, OSCE ensures that all participants are assessed uniformly using predetermined, standardized checklists. Traditionally, most Indian medical institutions have relied on the Conventional Practical Examination (CPE), which tends to be subjective and examiner-dependent. In contrast, OSCE offers enhanced reliability, validity, and fairness by testing a range of competencies under controlled conditions, making it an integral component of modern medical assessments.[1,2]

First introduced by Harden and Gleeson in 1975, the OSCE revolutionized clinical assessment by using simulated patients, structured tasks, and standardized marking schemes.[3] This innovation not only improved objectivity but also allowed for the assessment of professional behaviors, decision-making, and communication skills. Over time, OSCE has evolved to serve both formative and summative purposes—allowing learners to demonstrate competence while receiving structured feedback for improvement.[4] Feedback, when effectively delivered, transforms assessment into a powerful learning experience. Research indicates that feedback is most beneficial when it is specific, timely, and based on direct observation, focusing on actionable areas for improvement rather than generalized comments.[4,5]

While numerous studies have evaluated the use of OSCE among undergraduate medical students, especially within the CBME framework, there remains a relative paucity of evidence on its use as a learning and feedback tool for postgraduate students, particularly in the field of Obstetrics and Gynecology (OBGY).[6-8] Most postgraduate assessments continue to emphasize theoretical knowledge and case-based viva examinations, with limited opportunities for structured, observed skill evaluation and feedback. Consequently, many postgraduate trainees lack consistent guidance on performance improvement, particularly in clinical examination and procedural skills.

In the context of Obstetrics, postpartum hemorrhage (PPH) remains one of the leading causes of maternal morbidity and mortality globally. According to recent estimates, In India the incidence of PPH after vaginal delivery is 2-4%, contributing to 19.9% of the maternal mortality rate, making it a major public health concern.[9] Effective management of PPH demands prompt recognition, skilled decision-making, and coordinated teamwork—competencies that can be objectively evaluated and improved through simulation-based training methods such as OSCE. Hence, incorporating PPH-related scenarios into OSCE sessions provides an opportunity to assess both technical and non-technical skills critical for real-world obstetric emergencies.

At the Mahatma Gandhi Institute of Medical Sciences (MGIMS), Sewagram, it was observed that both faculty and postgraduate students faced challenges related to limited direct observation and structured feedback during clinical training. Deficiencies in skill assessment and feedback mechanisms hindered the identification and correction of learning gaps. Therefore, this study was conceptualized to explore the impact of feedback integrated within OSCE sessions as a learning tool for postgraduate students in the Department of Obstetrics and Gynecology.

The present research aims to determine whether feedback provided during OSCE sessions enhances students' performance and facilitates deeper learning. Specifically, the study seeks to answer whether facilitator-led feedback during OSCE improves scores among postgraduate OBGY students, and whether such feedback can make OSCE an effective learning-oriented assessment method. By examining these aspects, the study not only assesses the educational value of OSCE for postgraduate training but also provides insights for faculty development and curriculum enhancement in medical education.

Aim

To study the impact of feedback during OSCE as a learning tool among postgraduate students in the Department of Obstetrics and Gynecology at MGIMS, Sewagram.

Objectives

1. To evaluate the role of feedback on postgraduate student performance in OSCE.
2. To assess feedback during OSCE as an effective learning tool.
3. To provide evidence that can guide teachers in improving future clinical teaching and assessment methods.

MATERIALS AND METHODS

This cross-sectional observational study was conducted among postgraduate medical students in the Department of Obstetrics and Gynecology at the Mahatma Gandhi Institute of Medical Sciences (MGIMS), Sewagram, Wardha, over a period of six months from August 2023 to February 2024. The study aimed to evaluate the impact of feedback during Objective Structured Clinical Examination (OSCE) sessions as a learning tool. A total of 18 postgraduate students were invited to participate in the study after obtaining informed consent; however, 15 students completed all study procedures and were included in the final analysis.

Inclusion and Exclusion Criteria: All consenting postgraduate students of the Department of Obstetrics and Gynecology at MGIMS, Sewagram were included in the study. Students who did not provide consent or were absent on the day of the OSCE session were excluded.

Ethical Considerations: Prior to commencement, the study protocol was reviewed and approved by the Institutional Ethics Committee for Research on Human Subjects (Approval No. MGIMS/IEC/OBGY/272/2023, dated 28/10/2023). All participants provided written informed consent, and confidentiality and anonymity were maintained throughout the study. Information regarding the study objectives, procedures, and benefits was communicated to all stakeholders, including departmental faculty and postgraduate students, through departmental meetings and orientation sessions.

Study Procedure and Data Collection: The OSCE sessions were conducted in the Obstetrics and Gynecology skills laboratory using pre validated and standardized checklists. Four trained facilitators assessed the participants' performance across four clinical skill stations:

1. Active Management of the Third Stage of Labour (AMTSL)
2. Aortic Compression
3. Bimanual Compression
4. Management of Atonic Postpartum Hemorrhage (PPH)

Each postgraduate student underwent four OSCE-based assessments, with two contact sessions conducted one month apart, allowing time for reflection and learning between sessions. In total, 120 OSCE encounters were completed (15 students × 8 encounters each). During the first session, immediate structured feedback was provided by facilitators after each station, focusing on strengths, areas for improvement, and steps to enhance clinical performance. The same OSCE stations were repeated in the second session to evaluate performance improvement following feedback.

Tool Validation and Quality Assurance: The OSCE checklists were adapted from existing validated tools and revalidated by departmental experts for content relevance and clarity prior to implementation. Modifications were made based on faculty feedback to ensure alignment with learning objectives and clinical standards. The facilitators were oriented to maintain uniformity in scoring and feedback delivery, minimizing inter-observer variation.

This structured approach ensured that the feedback during OSCE not only served as an assessment tool but also acted as an interactive learning experience, enabling postgraduate students to develop clinical competence and confidence in managing obstetric emergencies such as postpartum hemorrhage.

Data were compiled using Microsoft Excel and analyzed using SPSS version 27.0. Continuous variables were expressed as mean ± standard deviation (SD), while categorical data were presented as frequencies and percentages. The paired t-test was used to compare pre- and post-feedback OSCE scores to determine the effect of feedback on performance improvement. A p-value < 0.05 was considered statistically significant. Additionally, descriptive statistics were used to summarize participants' perceptions and the role of feedback as a learning tool.

RESULTS

Out of 15 postgraduate students who participated in the OSCE sessions, performance across all four skill-based stations—Active Management of Third Stage of Labour (AMTSL), Bimanual Compression, Management of Atonic Postpartum Hemorrhage (PPH), and Aortic Compression—was analyzed using the paired t-test. Each skill was assessed one month apart, before and after structured facilitator feedback. Across all stations, there was a statistically significant improvement in post-test scores, indicating that feedback played a crucial role in enhancing clinical performance.

In the AMTSL skill station, there was a marked improvement in performance following feedback. The mean pre-test score of 5.47 (SD = 0.743) increased to a mean post-test score of 7.13 (SD = 0.640), showing better mastery of the steps involved in the active management of the third stage of labour. The calculated t-value of -8.92 and p-value < 0.001 indicate a highly significant difference, confirming that feedback led to measurable improvement in clinical competence and procedural understanding among the postgraduate students. [Table 1]

Table 1: Comparison of Pretest and Posttest Scores for AMTSL (Active Management of Third Stage of Labour)

Parameters	N	Mean	Median	SD	SE
OSCE (Pre-test)	15	5.47	5	0.743	0.192
OSCE After Feedback (Post-test)	15	7.13	7	0.640	0.165
t-value	-8.92				
p-value	< 0.001				

For the Bimanual Compression skill, similar positive trends were noted. The mean pre-test score of 5.80 (SD = 1.265) rose to 7.40 (SD = 0.986) after feedback was incorporated. The t-value of -9.80 and p-value < 0.001 demonstrate a statistically significant enhancement in technical proficiency and confidence in performing this crucial life-saving manoeuvre. The improvement suggests that structured feedback following the OSCE session effectively helped students identify performance gaps and refine their clinical technique.[Table 2]

Table 2: Comparison of Pre-test and Post-test Scores for Bimanual Compression

Parameters	N	Mean	Median	SD	SE
OSCE (Pre-test)	15	5.80	6	1.265	0.327
OSCE After Feedback (Post-test)	15	7.40	7	0.986	0.254
t-value	-9.80				
p-value	< 0.001				

The evaluation of Management of Atonic Postpartum Hemorrhage (PPH) revealed the highest level of improvement among all stations. The mean pre-test score of 8.00 (SD = 1.36) increased to 9.60 (SD = 1.12) after feedback, with a t-value of -12.20 and p-value < 0.001. This substantial increase highlights that targeted feedback allowed students to correct deficiencies in protocol adherence and clinical judgment, resulting in a stronger grasp of emergency management principles. [Table 3]

Table 3: Comparison of Pre-test and Post-test Scores for Management of Atonic Postpartum Hemorrhage (PPH)

Parameters	N	Mean	Median	SD	SE
OSCE (Pre-test)	15	8.00	8	1.36	0.352
OSCE After Feedback (Post-test)	15	9.60	10	1.12	0.289
t-value	-12.20				
p-value	< 0.001				

In the Aortic Compression skill assessment, participants also exhibited a significant improvement after receiving structured feedback. The mean pre-test score of 5.20 (SD = 0.561) improved to 7.00 (SD = 0.756) post-test. The t-value of -8.09 and p-value < 0.001 confirmed that feedback effectively enhanced participants' procedural knowledge and psychomotor skills in performing aortic compression during postpartum hemorrhage scenarios.[Table 4]

Table 4: Comparison of Pre-test and Post-test Scores for Aortic Compression

Parameters	N	Mean	Median	SD	SE
OSCE (Pre-test)	15	5.20	5	0.561	0.145
OSCE After Feedback (Post-test)	15	7.00	7	0.756	0.195
t-value	-8.09				
p-value	< 0.001				

Overall, when all four OSCE checklists were analyzed collectively, the findings consistently demonstrated significant improvement in student performance after the integration of facilitator-led feedback. The p-values for all stations were < 0.001, confirming that the inclusion of structured feedback during OSCE sessions significantly improved both knowledge and hands-on clinical skills. These results reinforce the value of feedback-integrated OSCE as an effective formative learning tool in postgraduate training. [Table 5]

Table 5: Summary of Performance Improvement Across All OSCE Stations

Checklist	t-statistic	p-value	Conclusion
AMTSL	-8.92	< 0.001	Significant improvement in scores from pre-test to post-test
Bimanual Compression	-9.80	< 0.001	Significant improvement in scores from pre-test to post-test
Management of Atonic PPH	-12.20	< 0.001	Significant improvement in scores from pre-test to post-test
Aortic Compression	-8.09	< 0.001	Significant improvement in scores from pre-test to post-test

DISCUSSION

In medical colleges across India, conventional practical examinations remain the dominant mode of assessing students' performance in clinical and non-clinical departments. These assessments aim to evaluate competencies such as knowledge, interpersonal skills, attitude, and communication. However, their unstructured nature, variability in examiner involvement, and dependence on patient availability raise concerns about reliability and objectivity. Conventional assessments thus often fall short of providing consistent, standardized evaluation of clinical performance. In response to these limitations, Objective Structured Clinical Examination (OSCE) was introduced by Harden et al. in 1975 as a structured, checklist-based method that seeks to improve fairness and standardization in clinical assessment.[10,11]

Our findings reinforce the value of OSCE in postgraduate training. The marked improvements in mean scores across all four skill stations (AMTSL, Bimanual Compression, Atonic PPH management, Aortic Compression) suggest that the structured framework of OSCE combined with immediate feedback significantly enhanced the students' performance. For instance, the mean score for AMTSL increased from 5.47 to 7.13 (t=–8.92; p<0.001) (Table 1). These data reflect not only successful skill acquisition but also the positive role of feedback in reinforcing procedural competence. OSCE, therefore, served not only as an assessment tool but as an educational intervention bridging the gap between evaluation and learning.

Feedback is widely recognized as a critical driver of learning and performance improvement in medical education.[12] Evidence indicates that effective feedback is timely, specific, based on direct observation, focuses on actionable areas, and drives reflection and behaviour change.[13-15] Our study aligns with this evidence: each OSCE station involved structured observation, use of validated checklists, followed by facilitated feedback, and then a repeat assessment one month later. For the Bimanual Compression skill, for example, mean scores rose from 5.80 to 7.40 ($t=-9.80$; $p<0.001$) (Table 2)—highlighting how feedback contributed to measurable gains in technical competence. This aligns with literature showing that feedback embedded within OSCEs can significantly enhance performance outcomes.[14,16]

Importantly, the nature of feedback matters. Studies comparing feedback delivery modes—such as immediate face-to-face versus enhanced written feedback—have shown varied student preferences and perceptions of benefit. For instance, in one study, students preferred enhanced-written feedback in an OSCE context and perceived it as more beneficial ($p=0.008$) over face-to-face feedback.[14] Our design incorporated immediate structured feedback, and the consistent improvement across stations supports the premise that well-planned feedback integrated into assessment drives learning. Additionally, feedback should stimulate reflection, promote self-directed learning, and support student-centred approaches. This was evident in our setting as postgraduate trainees were actively engaged in repeated OSCE tasks and could directly observe their own improvement.

There are several limitations to this study. First, the sample size was relatively small (15 postgraduate students), limiting generalizability and statistical power. Second, the study was conducted in a single institution (MGIMS, Sewagram, Wardha) and focused only on postgraduate students in Obstetrics & Gynaecology, which may limit applicability to other departments or undergraduate cohorts. Third, although we provided structured feedback, we did not formally assess the quality or perception of feedback (for example, student reactions or emotional responses), and prior research shows that feedback can evoke emotional responses that affect subsequent performance. Finally, while the repeat OSCE provided a measure of performance improvement after one month, longer-term retention of skill and transfer into actual clinical practice were not evaluated. Future studies should consider multi-centre designs, larger samples, and follow-up over longer periods to assess retention and clinical application of skills.

CONCLUSION

The present study demonstrated that incorporating structured feedback within OSCE sessions significantly improved postgraduate students' clinical performance across all assessed skills. The findings reaffirm that OSCE, when complemented by timely, specific, and facilitator-guided feedback, serves not only as a reliable assessment tool but also as an effective learning strategy that enhances competence, confidence, and reflective practice. By engaging in feedback-driven OSCE sessions, postgraduates were able to apply their learning more effectively in clinical scenarios, particularly in managing critical obstetric emergencies such as postpartum hemorrhage (PPH), thereby demonstrating improved skill, confidence, and decision-making in real-life settings. This feedback-integrated OSCE model promotes student-centred learning and continuous self-improvement, contributing to better preparedness for clinical practice and enhancing the overall quality of postgraduate medical education.

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