

# Perceptions of dental postgraduates about Mini-cex: A Pilot Study

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## Abstract

Mini-CEX is a formative assessment tool designed to provide feedback on skills essential to good medical care by observing an actual clinical encounter. Considering the unique features of mini-CEX assessment, the preliminary investigation was carried out by direct observation of post-graduate students, in the Department of Prosthodontics. The objectives were to introduce and pilot test mini CEX & to offer a developmental feedback based on direct observation. Mini-CEX, is a unique combination of summative assessment and feedback. Mini-CEX provided a reliable data and helped in learning from different perspectives. This ultimately induced confidence and reduced examination fear in postgraduates in Department of Prosthodontics.

**Keywords:** Mini-CEX assessment, Post-graduate students, Prosthodontics.

## Introduction:

One good way to conceptualize the assessment of a clinical competence is to use Miller's pyramid, the model which provides a framework for assessment methods from 'knows' to 'knows how' to 'shows' and to 'does'. Mini-CEX assesses the trainee at higher levels of Miller's pyramid(1).

Mini-CEX (mini- clinical evaluation exercise) was first introduced by the American Board of Internal Medicine in 1995 for the assessment of post-graduates(1). It is a formative assessment tool designed to provide feedback on skills essential for good medical care by observing an actual clinical encounter. In its original format, mini-CEX assessed the trainees on the seven core skills: medical interviewing, physical examination, professionalism, clinical judgment, counseling, organization and efficiency and overall clinical competence (Table 1).

The form used for recording the results is generic so that it would be applicable in most patient situations (Mini-CEX rating Form). The form also records the satisfaction of both the trainee as well as the faculty member with the process of mini-CEX. treatment plan is finalized.

The faculty member observes the trainee-patient encounter and scores the performance using the rating form. The encounters are brief, generally lasting 10-15 minutes and are followed by a feedback session which focuses on what was done well and what could be improved. A trainee is observed during a number of such encounters covering different aspect of patient care and is generally observed by different faculty members.

In Dentistry, when the patient comes in the OPD, for any type of dental treatment, detail clinical examination of his extra-oral as well as intra-oral findings is very important which is called data gathering. On this data, diagnosis is confirmed and afterwards,

In Prosthodontics, generally the patients are coming for the replacement of missing tooth / teeth either due to partial or complete loss of teeth. For this, there are number of treatment options available. However, after correlating the data and diagnostic findings, counseling therapy is at most important as the favorable prognosis of the treatment depends on the final treatment plan. So considering the unique features of mini-CEX assessment, this pilot study was carried out by direct observation of post-graduate students, in the department of Prosthodontics.

**Table 1:- Competencies demonstrated during Mini-CEX**

1. Medical Interviewing Skills: - Facilitates patients telling of story, effectively uses questions /directions to obtain accurate, information needed, responds appropriately to affect, non-verbal clues.
2. Physical Examination Skills: - Follows efficient, logical sequence, balances screening / diagnostic steps for problem, informs patients, sensitive to patient's comfort, modesty.
3. Humanistic qualities/ Professionalism: - Shows respect, compassion, empathy, establishes trust; attends to patient's needs of comfort, modesty, confidentiality, information.
4. Clinical Judgment: - Selectively orders / performs appropriate diagnostic studies, considers risks and benefits.
5. Counseling Skills: - Explains rationale for test / treatment, obtains patient's consent, educates / counsels regarding management.
6. Organization / Efficiency: - Prioritizes; is timely and succinct.
7. Overall Clinical Competence: - Demonstrates judgment, synthesis, caring, effectiveness and efficiency.

**Aim:**

To evaluate the feasibility and usefulness of the mini-CEX as an assessment and feedback tool in postgraduate students, in the department of Prosthodontics.

**Objectives:**

1. To introduce and pilot test mini CEX for evaluating post-graduate students in Dept. of Prosthodontics.
2. To train the faculty and post-graduates in the use of mini-CEX.
3. To evaluate postgraduate student and faculty response to the use of the mini-CEX, as an assessment and feedback tool.

**Methodology:**

Two evaluators and 20 postgraduates were selected for the mini- CEX assessment. Institutional Ethics Committee clearance was obtained. The students examined the patient who came for prosthetic treatment. Each student was observed by evaluator both for the counseling and for the therapy.

The evaluator evaluated students for 7 clinical competencies using the standardized mini-CEX form and gave the feedback to the student .The form used a standardized 9-point Likert-scale, with a ratings span from 13 (unsatisfactory), 46 (satisfactory), to 79 (superior). After the clinical encounter, the student immediately presented an assessment and plan, and the evaluator gave feedback. The scores did not contributed to the final grade, as the primary goal of the exercise was to provide "real time" constructive feedback. In addition, the students were also asked to give their relative feedback on the assessment given by evaluator and their experience with encounter.

**Results:**

The post-graduate students showed satisfactory results in 7 different competencies.

Encountered for	Data gathering, diagnosis and counseling		Therapy	
	Mean Value	S.D.	Mean Value	S.D.
Competencies				
Medical interviewing skills	4.21	0.7	4.5	0.76
Physical examination	4.5	0.65	4.57	0.76
Professionalism	4.57	0.76	4.71	0.83
Clinical judgment	4.86	1.03	4.64	0.84
Counseling skill	4.93	1	5.07	0.92
Organization	5.14	0.77	4.79	1.12
Overall clinical performance	5.36	1.01	5.5	1.16

From the above table, it was observed that the post-graduate students showed satisfactory performance in different clinical skills: Medical interviewing, physical examination, professionalism, clinical judgment and organization. Their patient's counseling skills and overall clinical competence was also better.

The students' feedback regarding the Mini CEX was also positive as they felt the overall exercise very useful to get a specific evaluation of their performance. It induced confidence and reduced examination fear amongst them.

### **Discussion:**

The mini-CEX combines the 'prove' and 'improve' function of assessment, by not only grading the performance of the post-graduate students, but also offering them a developmental feedback based on direct observation. It has been found to be effective for assessing medical students (2-4). The mini-CEX assesses residents in a much broader range of clinical situations than the traditional CEX, has better reproducibility, and offers residents greater opportunity for observation and feedback by more than one faculty member and with more than one patient (5). The long case or OSPE, need specific time allotment of about 1-3 hours. These assessments generally initiated by one or two examiners and require proper patient's setting. The basis of assessment is as per examiner's judgment which may vary sometimes. It is focused on student's presentation skills and its utility is by grading of performance.

Whereas mini-CEX assessment can be integrated into daily clinical activities, it is initiated both by student and teacher/ examiner and the time required is 10 -15 minutes for each encounter. Depending upon the number of trainees / students, number of encounters can be increased. Here multiple settings arrangement is possible i.e. student can be assessed in OPD, in their working area, while doing laboratory work, emergency room/ operating room. The most important part in mini-CEX is that the basis of student's assessment is as per examiner's judgment which is based on global rating scales. Also it is focused on by observing student's performance and accordingly grading is given. At the same time, teachers provide educationally and practically useful formative feedback to the students. The teacher can share some related practical experience with students, which helps the students to improve their clinical skills for future clinical / laboratory exercises.

In the present investigation, the post-graduate students' performance was seen to be satisfactory. They perceived the mini CEX positively.

However, as mentioned in earlier investigations in medicine careful evaluation of the circumstances of mini CEX assessment will help to improve the quality of the resulting information. Future research should address issues of rater selection, training, and monitoring which can impact rating accuracy (6).

### **Conclusion:**

Mini-CEX is a unique combination of formative assessment and feedback. Mini-CEX provided a reliable data and helped in learning from different perspectives. This ultimately induced confidence and reduced examination fear in postgraduates in Department of Prosthodontics.

### **Impact of the study:**

Though it was a preliminary investigation, the post-graduate students actively performed all the clinical tasks. The mini-CEX rating form helps the encounters during proper assessment of students work. The most important part is providing feedback to students. Initially the students were nervous after seeing the score, but after providing information related to the procedure and showing the importance of that procedure students showed positive approach towards it and assured for superior / best performance in future.

### **Limitations:**

In dentistry, especially in Prosthodontics, while treating the patients, there are multiple clinical as well as laboratory procedures. The success of any particular clinical procedure depends on the previous meticulous laboratory work. In clinical practical assessment, the student's laboratory work cannot be assessed.

### **Future plans:**

Considering the above limitations, there is a need to assess the separate laboratory work done by the students. This part can be assessed initially during their pre-clinical exercise schedule.

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