Use Of Mini-Cex As An Effective Tool Of Assessment In Second B.A.M.S. Students In Rognidan

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Abstract : Background and Objectives: Mini-CEX method of assessment is widely accepted method which includes structured assessment of an observed clinical encounter, provides feedback to the student on skills essential to the provision of good clinical care, and improves the competencies expected & the confidence level of the student. There has been limited or negligible research in this area in the field of Faculty of Ayurved. Methodology: 45 students from 2nd BAMS students were included in the study. The standard nine point scale format was adopted for rating the students. Each student was assessed twice on real patients, with low or moderate complexity level. The cases were not repeated for the successive encounter. Each student was rated for the competencies; the time required for observation & providing feedback, the evaluators' & trainees' satisfaction using mini-CEX were noted. Feedback was obtained from the trainees after completing the entire task. Results: Total 81 encounters with 44 students against a planned figure of 90 were recorded giving a completion rate of 90%. The mean observation time was 22 minutes & feedback time was 08 minutes. The scores in medical interviewing, physical examination, communication & professional qualities, counselling skills, clinical judgement, organisation efficiency & overall clinical performance (p< 0.0001, paired t-test) show statistically significant change in the successive encounter. The satisfaction level of the students and the assessors achieved high score with the mean of 7.7/8.1 and 8.3/8.1 respectively. Feedback analysis from the faculty & trainees is as follows: Average 40% trainees were felt anxious being observed. The method helped the students to: be more attentive & regular in clinical postings, achieve the confidence level, improve interpersonal skills, & to analyse strengths and weak areas of the students. Conclusions: The mini-CEX is an effective tool of assessment in second B.A.M.S. students in Rognidan to improve the expected competencies in case presentation skills with confidence. [Deshpande M et al NJIRM 2013; 4(5) : 114-117]
Key Words: Mini-CEX, Assessment Of Clinical Competencies In Ayurved Faculty, Rognidan

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Introduction: Assessment form an integral part of teaching-learning-assessment cycle. The competencies based on all the three domains are evaluated in the assessments. Formative assessments provide feedback to improve the students while summative one proves ability of them. In the current situation, the students are not generally observed during their clinical assessments and the students are unable to present case with high confidence level, to cover all essential points & to achieve the competencies expected.

Mini-CEX method of assessment is a widely accepted method which includes structured assessment of an observed clinical encounter & provides feedback to the student on skills essential to the provision of good clinical care. The method when used in formative assessments improves the competencies expected & the confidence level of the student.

Overall Goal: to develop expected competencies in case presentation skills with confidence in second B.A.M.S. students using mini-CEX assessment tool in formative assessments.

Context of the study: Formative and summative assessment of medical students clinical skills is a critical component of medical education. As such, multiple tools have been developed to assess their clinical skills with actual patients, with one of the best studied being the mini-clinical evaluation exercise. Mini clinical evaluation, developed by the American Board of Internal Medicine, is used to provide formative feedback to trainees about their history taking, physical exam, counselling skills & interpersonal skills[1-3].In terms of Miller's pyramid, the highest level of assessment, i.e. does how, is possible using the method as the student is assessed while performing an actual clinical task assorted to him.

As stated by Ney, Erin M. Shea, et. al, Mini-CEX method of assessment is widely accepted method by both, the trainees & the assessors. Prior research has demonstrated the reliability, concurrent & predictive validity of scores when used in internal medicine residents and students.[4] As stated by T. Singh, M. Sharma ,Mini-CEX is an acceptable and practical tool for assessment of residents, it is low expertise, low resource-intensive method that does not require any special preparation and can be done in a natural patient care setting, providing authenticity to the assessment.[5]

As quoted by David A. Cook, Thomas J Beckman, Nine point scale (traditional mini-CEX scale), five point scale & other different length scales are available but very few have evaluated the accuracy. Although interrater reliability is similar for nine & five point scales, nine point scales appear to provide more accurate scales.[6]

A wide area of research has been covered in the faculty of modern medicine including the variety of levels of the trainees, speciality & super-speciality of the trainees, inter-rater reliability, accuracy of the method of assessment; evaluating the clinical skills of the students with various innovations in the traditional mini-CEX method. However there has been limited or negligible research in this area in the field of Faculty of Ayurved. The purpose of the present research was to use mini-CEX method as a better method of assessment in 2nd B.A.M.S. students in Rognidan and to develop an assessment module with mini-CEX for the trainees in the field of Ayurved.

Specific Objectives: To use mini-CEX method as an better method of assessment in 2nd B.A.M.S. students in Rognidan, which will help to develop the expected competencies in case presentation with confidence with 80% perfectness at the end of clinical posting in Rognidan

Material and Methods: Permission from the head of the Institute & from the Head of the department was obtained. Institutional ethics committee clearance certificate was obtained.

- In-house training on mCEX was given to the departmental staff.
- 45 students from 2nd BAMS (UG) were included in the study.
- The standard nine point scale format was adopted for rating the students.
- Total 45 students from newly admitted batch were posted for clinical training in Rognidan & included in the study.
- Clear idea of the research project and the assessment method was given to all the students and consent was taken from them.
- As they were totally unaware of the subject, introduction was given and the topics included for two months period of their posting were history taking & general examination of the patients as per the formats provided by MUHS.
- The students were trained practically with hands on training, demonstrations & with some VCDs available.
- Sufficient practice was given to them on real patients available in Seth Tarachand Ramnath Ayurved Hospital, which is the affiliated hospital to the college.
- The assessment was scheduled in the last week of every month so that every student will face two encounters & will be able to know the improvements they have achieved in the successive encounter.
- The checklists were made available to the assessors at the time of the assessments.
- The assessment was done on real patients from indoor patient dept. in the hospital after obtaining the consent of the involved patients.
- The patients selected were with low or moderate complexity level.
- Each student was rated for the competencies expected i.e. medical interviewing skills, physical examination skills, professionalism, counseling skills, clinical judgment, organization / efficiency & overall clinical competencies.
- The time required for observation & providing feedback was noted. The evaluators' & trainees' satisfaction using mini-CEX were also noted.
- No penalty was charged for a student not taking up the evaluation exercise.

Result: 81 encounters with 44 students against a planned figure of 90 were recorded giving a completion rate of 90%. Total 37 students completed their task of 02 encounters each, while 07 students faced single encounter only. The data recorded of the 37 students was taken for the statistical analysis.

The evaluators were professor, associate Professor & assistant professor. The complexity level was moderate. The mean observation time recorded was 22 minutes (range 15 to30 minutes) & the mean feedback time was 08 minutes (range 06 to 15 minutes).
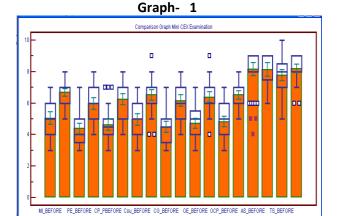
The significant change was observed in the ratings of the competencies in the second encounter than the first one. Paired samples t-test was applied to the data. The scores in medical interviewing, physical examination, communication & professional qualities, counselling skills, clinical judgement, organisation efficiency & overall clinical performance show statistically significant change ($p < 0.0001$) in the successive encounter (table 1). The level of satisfaction of the students and the assessors achieved high score with the mean of ($1^{st}/2^{nd}$ encounter) 7.7/8.1 and 8.3/8.1 respectively.

Table 1: Comparative Study Of The Scores Obtained In Various Competencies In Mini-CEX Encounters.

	N	Mean	SD	SEM	95% CI
Assessors' Satisfaction AFTER	37	8.135	1.2728	0.2093	8.000 - 9.000
Assessors' Satisfaction BEFORE	44	8.159	1.3630	0.2055	8.000 - 9.000
Clinical Judgement AFTER	37	6.162	1.0675	0.1755	5.000 - 7.000
Clinical Judgement BEFORE	44	4.500	1.1714	0.1766	4.000 - 5.000
Counselling Skills AFTER	37	6.514	1.0171	0.1672	6.000 - 7.000
Counselling Skills BEFORE	44	4.955	1.1999	0.1809	4.000 - 6.000

Communication, Prof. Qualities AFTER	37	6.243	1.0905	0.1793	6.000 - 7.000
Communication, Prof. Qualities BEFORE	44	4.614	1.1251	0.1696	4.000 - 5.000
Medical Interviewing AFTER	37	6.676	0.7092	0.1166	6.000 - 7.000
Medical Interviewing BEFORE	44	5.045	1.2932	0.1950	4.000 - 6.000
Overall Clinical Performance AFTER	37	6.514	0.8374	0.1377	6.000 - 7.000
Overall Clinical Performance BEFORE	44	4.818	1.0842	0.1634	4.000 - 5.000
Organisation Efficiency AFTER	37	6.378	0.9818	0.1614	6.000 - 7.000
Organisation Efficiency BEFORE	44	4.705	1.0692	0.1612	4.000 - 5.000
Physical Examination AFTER	37	5.973	1.0926	0.1796	5.000 - 7.000
Physical Examination BEFORE	44	4.386	1.1251	0.1696	4.000 - 5.000
Trainees' Satisfaction AFTER	37	8.189	0.8110	0.1333	8.000 - 9.000
Trainees' Satisfaction BEFORE	44	7.773	1.1178	0.1685	7.000 - S8.000

Graph- 1

Comparison Graph Mini CEX Examination

Table 2 : Feedback from trainees:

Questions	Strongly Disagree %	Disagree %	Undecided %	Agree %	Strongly Agree %
Mini-CEX is better than the previous in formative assessment	0	0	3.4	58.6	37.9
Mini-CEX will improve my interviewing skills.	0	0	6.9	31.0	62.1
Mini-CEX will improve my skills in clinical examination.	0	0	0	44.8	55.2
I received a positive feedback from my faculty for what I have done better.	0	0	0	75.9	24.1
I received a negative feedback & suggestions for improvement	0	0	8.3	33.3	58.3
I have achieved confidence for care presentation.	0	0	3.4	58.6	37.9
Mini-CEX will help in developing the student- Teacher relationship.	0	0	13.8	48.3	37.9
Mini-CEX will help in developing the student – patient relationship.	0	0	6.9	69.0	24.1
Satisfied with the entire encounters of mini – CEX examination.	0	0	6.9	62.1	31.0
I would like to face more encounters with this type of examinations	0	0	0	52.2	44.8

Discussion: I The analysis of the data proves that the successive encounters definitely help to improve the various deficient areas & the competencies lacking in the students. Immediate feedback boosts the students in correcting themselves & positive approach was taken by them. The method helped the students to be more attentive & regular towards the clinical postings. Some students realised that even the encounters had taught them new things.This method also helps to improve student-teacher & student-patient relationship as the method is used in real patient set up.All the students agreed to face this type of evaluation in future.Written case record format was obtained after completion of encounters, checked & the corrections were suggested to them. This helped them to improve the writing skills.

Feedback from the faculty: Mini-CEX is an effective tool in formative assessments where the students are able to receive their strengths & weaknesses, this definitely help in their improvement. Also the weak areas can be identified analysing overall effect of the total encounters & necessary action can be taken in future.

Conclusion: The mini-CEX is the effective tool of formative assessment in second BAMS students in Rognidan. The method helps to improve the expected competencies in case presentation skills with confidence.

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