



Introduction of Student Oral Case Analysis (SOCA) to Assess Student's Performance in Pre-clinical Setting in Faculty of Medicine, Mataram University

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ABSTRACT

Background: The competence-based curriculum that integrate different knowledge and skills to produce certain competencies requires proper assessment. In clinical setting, Student Oral Case Analysis (SOCA) has been widely used to assess student's performance; however, the evidence in preclinical setting with more students is still limited

Objective: To describe the implementation of SOCA in pre-clinical setting

Method: The study is a descriptive study. Every student participating in Metabolism and Energy Block were included in the study. SOCA was used to assess student's performance in the following manner: 1) developing dietary plan for normal individual, 2) developing dietary plan for patient with nutritional disorder (under-nutrition), and 3) developing dietary plan for patient with organ disorders (kidney, heart and liver) and metabolic disorders (diabetes and hypertension). Each student was assessed in 20 minutes : 5 minutes for the scenario, 5 minutes for explanation with a simple flowchart, 10 minutes for answering 4-5 questions. Evaluation components was on the presentation (40%), the answers (50%) and general performance (10%). The score was from 60 to 100 : frequent inaccuracy and guesses (60-69), occasional inaccuracy (70-79), generally accurate, no guess (80-89), exceptionally complete (90-100). A semi-structured interview was conducted to explore student's perception on SOCA.

Result: Participants were 61 students. Sixty (98.36%) students passed SOCA (cut-off point: 70). Fifty two (85.24%) students perceived that SOCA had helped them understand the topic, transforming basic medical science to clinical setting. Forty nine (80.33%) students also mentioned that the motivation to study was enhanced through SOCA.

Conclusion: SOCA in FMMU helped students in topics understanding and increased study motivation.

Keywords: SOCA, competence-based curriculum

Medical education has shifted to problem-based learning paradigm. Lecture that used to be the main learning activities, now simply act only as instructional class assignment or introduction to learning objectives. Tutorial as main learning activity enhanced student's ability to orally present their opinion.

The introduction of competence-based curriculum that integrate different knowledge and skills to produce certain competencies requires proper assessment. In many medical schools,

Student Oral Case Analysis (SOCA) is one of the instrument to assess student's performance in clinical clerkship. Oral case presentation is vital in medical career, i.e. to present a case, and to explain the disease to a patient or their family.^{1,2}

SOCA has low psychometric indicators with low reliability and validity. These criticisms are justified if the objectives are to produce relatively homogeneous products for diverse trades or professions. But these same

characteristics may be quite powerful to promote diversity of student performance; active discussion may serve as a powerful incentive to go beyond mere competence and to demonstrate flair.³

It is possible to increase the reliability using several rather than single oral examination⁽²⁾.

SOCA has been widely implemented in clinical clerkship in many medical schools in Indonesia but implementa-



tion in pre-clinical setting is poorly documented. In 2007 The Faculty of Medicine Mataram University has introduced SOCA to assess student's performance in preclinical setting in the fifth block Metabolism and Energy.

This study described the implementation SOCA in pre-clinical setting.

METHODS

Participant's characteristics

The participants consist of 61 students: 43 (70.49%) female and 18 (29.51%) male in Metabolism and Energy block. All participants fulfilled 75% attendance in all learning activities in Metabolism and Energy block to qualify SOCA.

Examiner's characteristics

Examiners were tutors of Metabolism and Energy block; consist of 5 persons and 3 additional examiners. All examiners were trained as SOCA examiner. The training was technical on how to examine using existing instruments

PROCEDURES

Development of SOCA protocol

SOCA protocol was developed as a part of Metabolism and Energy block. Modifications was needed to adjust SOCA in clinical clerkship setting to a pre-clinical setting,. Real case in clinical setting was modified by case scenario (bedside presentation is not applicable in pre-clinical setting) and 'SOAP' (subjective, objective, assessment, plan and prognosis) presentation in clinical setting is modified by a short scheme / flowchart. In this study, students were asked to develop a dietary plan.

SOCA's implementation

Students were divided into three groups, each group underwent SOCA in three different days. SOCA's examiners were all five tutors in Metabolism and Energy block plus three other examiners. All were trained as SOCA examiners. Different scenarios were used in different days. Each student underwent 20 minutes of SOCA and 5 minutes interval. The time allocation were summarized in table 1.

Table 1. SOCA Time allocation

| Time | Time allocation |
|----------------------|--|
| The first 5 minutes | Read the scenario carefully |
| The second 5 minutes | Develop dietary plan in a short scheme / flowchart |
| The last 10 minutes | Answer 4 to 5 questions |
| 5 minutes interval | Transition to next group |

SOCA was used to assess student's performance in: 1) developing dietary plan for normal individual, 2) developing dietary plan for patient with nutritional problem (under-nutrition), and 3) developing dietary plan for patient with organ disorders (kidney, heart and liver) and metabolic disorders (diabetes and hypertension). Students were randomly entered the room and chose one scenario in closed envelope.

Scenarios were short stories of a patient's case. Students presented a dietary plan in a short scheme / flowchart drawn in plain paper, followed by 4 to 5 oral questions from examiner. The drawn scheme, the oral presentation and the answers were assessed.

Components of assessment were presentation (40%), answering questions (50%) and general performance (10%). The scores were from 60 to 100 : frequent inaccuracy and guesses (60-69), occasionally inaccurate (70-79), generally accurate, no guess (80-89), exceptionally complete (90-100).

Table 2. Components of assessment

| Components of assessment | Score (60-100) |
|---------------------------|----------------|
| Presentation (40%) | |
| Answering questions (50%) | |
| General performance (10%) | |
| Total | |

Four tutorial rooms and one classroom were used. Each tutorial room was occupied by one student and one examiner. One examiner examines 3 students and then replaced by another examiner to examine 2 students; five students were examined in one day. One classroom was used to quarantine students who have undergone SOCA, to eliminate interaction be-

tween pre and post SOCA students. A semi-structured questionnaire was conducted to explore student's perception of SOCA

RESULT

Implementation of SOCA

Introduction of SOCA in pre-clinical setting at FMMU was started in Metabolism and Energy block. SOCA was held in May 26 – 28, 2008. Sixty (98.36%) among 61 students passed the exam (cut off: 70). One student underwent remedial SOCA a week later because of sick leave.

Objectivity of SOCA was increased through several efforts: 1) Random student's queue 2) Random scenario 3) Drawn scheme as part of assessment 4) Examiners trained as SOCA examiner.

Perceptions of students

Fifty two (85.24%) students perceived that SOCA helped in transforming basic medical science to clinical setting. Some students changed their learning strategy by reading more learning resources weeks before, and by practicing SOCA assessed by peers. Forty nine (80.33%) students also mentioned that motivation was enhanced through SOCA.

Implementation of SOCA increased anxiety among students, but finally students felt excited and relieved. Some of their comments: "So relieve after the exam, I thought it is going to be hard, but I can make it!", "I am very anxious on what is going to be, but I am satisfied for what I've learned.", and "I imagine I can implement my knowledge to a real patient." One student is really tired and think SOCA is unnecessary, has not enough time to prepare; and the ringing bell during



SOCA was disturbing. One examiner was criticized as has low objectivity. The limitation was a low lecturer : student ratio (17 : 211).

DISCUSSION

Five criteria for determining the usefulness of a particular method of assessment: 1) reliability (measurement accuracy and reproducibility), 2) validity (whether the assessment measures what it claims to measure), 3) impact on future learning and practice, 4) acceptability to learners and faculty, and 5) costs (to individual trainee, institution, and society)(4). Reliability was enhanced by providing assessment's instruments. SOCA can be performed repeatedly.

SOCA could not be used as a single component, SOCA at FMMU was one of assessment methods used in Metabolism and Energy Block. Impact of SOCA partly has been explored in student's perception regarding SOCA implementation. Prospective study is needed to assess future impact of SOCA. Cost of SOCA is quite high due to development of SOCA's protocol, large human resources need and time consuming.

In conclusion, SOCA has been successfully implemented to assess student's performance in pre-clinical setting in Faculty of Medicine, Mataram University, with positive impact in helping students to construct their

understanding of the topic, transforming basic medical science to clinical setting and in enhancing study motivation.

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