ORIGINAL ARTICLE

Assessing the Long Case in Undergraduate Medical Students: Development of Structured, Feasible, Valid and Reliable Tool.

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ABSTRACT

Objective: To develop structured, feasible, valid and reliable tool in assessing long case in undergraduate medical student.
Study Design: Qualitative Action Research.
Place and Duration: IIMCT, Aug, 2012 to Oct 2013.
Materials and Methods: An action research approach was used. Problems of un-structured examination in long case were identified. Delphi technique with the senior faculty was used to identify the components of the assessment tool. Final draft of the tool was sent to medical educationists for their input.
Results: A structured tool (SLICE) for examining the holistic approach of student towards managing a patient was developed and was found to be reliable (Cronbach alpha 0.87) and valid.
Conclusion: SLICE is a feasible, valid and reliable tool to assess long case in undergraduate medical students in our setup.

Key words: *long case, assessment, reliability, clinical competence.*

Introduction

The origins of long case can be traced back to mid-19th century in Cambridge, when it was first used to assess the clinical skills. According to Pilgrim, the long case is integral to the bio-psychosocial approach, which has had a significant influence on British psychiatry since the 1970s when it became established as psychiatric orthodoxy.[1]

In the traditional long case, candidates are given uninterrupted and unobserved time, usually 30±45 minutes, to interview and examine a patient, selected from the wards or outpatients and untrained for examinations.[2] Long case assessment is used for assessing history taking skills, general physical examination, and relevant regional examination, making a provisional diagnosis and defending it. It then involves suggesting the relevant investigations and appropriate treatment for the patient, concluding with follow up. The whole exercise is done on a single patient. This provides the examiner with the opportunity to assess a candidate holistically on single patient from the diagnosis to the treatment of the patient. In reality, this is the actual situation which is faced by the doctor.

It is not an easy task to find an appropriate tool to assess a skill. Long case is arguably a valid and educationally valuable test.[3] There is now certain evidence that in all measurements of clinical

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competence, candidates perform variably across tasks.[3, 4] The long case attempts to assess the integrated interaction between the doctor and a `real' patient. This is in contrast to OSCE where different stations may check all these skills for different diseases or problems, but still lack the practical scenario, where a doctor has to diagnose and treat a single patient and not different components of management in different patients.

Long case assessment is considered by many of the medical educationists as a talk of the past. Due to the subjectivity, poor validity and feasibility, the unstructured long case went out of favour and has been taken over by OSCE. OSCE is being used for assessment of clinical competence[5], however to assess a student holistically[6] about the management of a single patient, as in real life, a more real clinical encounter is required.[7]OSLER (objectively structured long examination record) is a valid and reliable tool to assess a long case. Osler has been used for more than over a decade for both undergraduate and post graduate examinations. The standard time to assess a student with this tool is 25-30 minutes. In our setup, a class in a medical college consist of 100-200 students. These students in final year MBBS are usually examined by 2 examiners (an internal and external).Using OSLER, either less number of students are examined in a day by 1-2 examiners or many examiners are needed to test same number of students. This is a considerable feasibility issue. We also observed that converting the grades to scores was a cumbersome activity by the faculty. To address the time, learning curve and add direct observation of clinical skills in a single test, there was a need for a tool that is objective, easy to learn and score and time bound. For this purpose, structured long

interview and clinical examination was designed.

Materials and Methods

An action research approach was used. In this approach, the current issues or problems faced at the workplace are addressed. The study was carried out at IIMC-T from August 2012 to October 2013. The issue was first recognized at the platform of the assessment committee of IIMC-T, where it was pointed that all clinical departments were using different formats for assessing the long case. This was resulting in lot of subjectivity and dissatisfaction among students. The time to assess students in a long case was also variable. The assessment time varied from 5-20 minutes. Moreover due to lack of a structured format, the examiner was at free will to inquire the examinee according to his likes and dislikes leading to bias in assessment.

To design the tool, Delphi technique was used. Serial meetings were held with the senior clinical faculty members who were involved in conducting the long case examination. Common themes were identified. The final draft of the tool which was designed by the authors was sent to 05 medical educationists and 20 students of medical education pursuing masters in

Annex 1:

STRUCTURED LONG INTERVIEW and CLINICAL EXAMINATION (SLICE)

Student Name: **Student Roll No:**

MARKS AND TIME DISTRIBUTION

Task	Marks	Time in minutes
HISTORY PRESENTATION	20	3
EXAMINATION	15	4
DEFENDING PROVISIONAL DIAGNOSIS	15	2
DEFENDING RELEVANT INVESTIGATIONS	15	2
DEFENDING MANAGEMENT	35	5
Total	100	16

DEFENDING PROVISIONAL DIAGNOSIS

Making a provisional diagnosis and providing relevant points to defend it	10	Excellent 10	Confidently defends all the relevant points
		Good 8	Confidently defends most of the relevant points
		Fair 6	Defends most of the relevant points but lacks confidence
		Borderline 4	Is not able to defend some points relevant to diagnosis
		Un satisfactory 2	Contradicts himself in cross questioning
		Poor 0	Is not able to make a provisional diagnosis
Providing a list of relevant D/D and excluding them logically	5	Excellent 5	Confidently provides a list of all relevant D/D and excluding them logically
		Good 4	Confidently defends most of the relevant D/D and excludes them logically
		Fair 3	Defends most of relevant D/D and excluding them logically but lacks confidence
		Borderline 2	is not able to defend relevant D/D and excluding them logically
		Un satisfactory 1	Contradicts himself in cross questioning
		Poor 0	is not able to defend relev ant D/D and excluding them logically

medical education to highlight deficiencies in the tool. Eventually the tool (SLICE) was finalized. Initially it was used at the end of clinical rotations before employing it at the end of Final year MBBS which is a high stakes examination.

Results

The developed instrument is attached as Annex 1 and Annex 2. The instrument was used in both formative and summative Assessment. In case of formative assessment, it was used to assess long case of final year students at the end of their surgical rotation and immediate feedback was provided based on this tool.

As a part of summative assessment, it was used at the end of complete rotations in Surgery and Allied, Medicine and Allied, Gynaecology and Obstetrics and Paediatrics to assess long case.

It was found to be feasible, valid and reliable tool. Mean completion time of assessment was 12 minutes. It was also found to be easier to be taught to the examiners. Face validity was considered high whereas content validity was rated low by the examiners. Cronbach alpha was found to be 0.87.

Please use the following format to award marks to the students:

HISTORY PRESENTATION

Component to be assessed	Marks	Marks obtained by the student	
Presenting complaints in chronological order with relevant, comprehensive, history of presenting complaints in orderly manner	15	Excellent 15	Follows the sequence as mentioned
		Good 12	Orderly manner is not observed
		Fair 9	Presentation is not comprehensive
		Borderline 6	Presentation is not relevant
		Un satisfactory 3	Presenting complaints not in chronological order
		Poor 0	Completely disordered without any logic
Presentation skills 1. Correct medical terminology 2. Assertive, 3. Audible , 4. Paucity 5. Eye contact	5	Excellent 5	Observes all five
		Very Good 4	Observes all four
		Good 3	Observes all three
		Average 2	Observes all two
		Un satisfactory 1	Observes only one
		Poor 0	Observes none

EXAMINATION

Performs General Physical Examination 1. Takes consent 2. Check Vital signs 3. Check e yes for (pallor/jaundice) 4. Palpate Lymph nodes 5. Checks Oedema (Ankle/Sacral)	5	Excellent 5	Performs all the mentioned tasks
		Good 4	Performs only four
		Fair 3	Performs only three
		Borderline 2	Performs only two
		Un satisfactory 1	Performs only one
		Poor 0	Performs none
Performs specific examination on Patient Relevant regional examination Orderly Pain free examination, Correct clinical methods, Narrates the positive findings	10	Excellent 10	Performs according to the mentioned criteria
		Very Good 8	Examination is not orderly
		Good 6	Does not narrate positive findings
		Borderline 4	Examination is not pain free
		Un satisfactory 2	Clinical methods are not correct
		Poor 0	Does not examine the relevant regional examination

Discussion

Deciding a tool which is ideal to assess clinical competence of medical undergraduate students is an arduous task and still very debatable.[9]

Gleeson developed the objective structured long examination record (OSLER) where the presentation is structured to increase the observations made by examiners on the candidate's approach to the case.[10,11] However in a scenario, where an examiner cannot give more than 10-15 minutes to a student, it difficult to use OSLER. Here either a modification of the existing tool or development of new tool is required.

Reliability of the long case is as good as an OSCE [12] or short case [13], if it is done on the principles of assessment. These principles are good validity, reliability, feasibility, acceptability and educational impact. Structured Long Interview and Clinical Examination has been developed keeping these principles in mind. It has an easy learning curve. It has better acceptability for students. It has a good educational impact. Its face and predictive validity is high, however its content validity is low.

SLICE has been designed keeping in view the ease of assigning marks to student. Each segment from history taking to follow up of the patient has been compartmentalized and rubrics added. This has been done to structure the assessment. However the marking has been kept easy as compared to other similar tools available.[6,8] The complexity of grading the student in an individual segment and then decoding it, has been avoided.[8] The time factor has also been taken into consideration. The SLICE has been developed to assess a student in duration of 16 minutes; however, we have found the mean time to be 12 minutes. This is in contrast to other tools which required 20-30 minutes to complete the assessment. [8] For the ease of examiners, SLICE has been divided into main components; the main marking sheet (annex 1) and the detailed assessment sheet (annex 2). Once the examiner has mastered the tool from the detailed assessment sheet, he can easily grade or mark the student using the main sheet only.

The reliability of a tool which is reproducibility of the test scores is an important pillar of the assessment tool. The reliability of the SLICE has been found to 0.87 which is at par with OSLER and OSCE.[14,15]

Observation of history taking in a long case appears to measure a useful and distinct component of clinical competence over and above the contribution made by the presentation. This has not been added at this stage but suggestions have been made to incorporate asking relevant questions in history from the patient under observation. The deficiency of direct observation has been overcome by observing the relevant general physical and regional examination and explaining the diagnosis and follow up to the patient by the examinee.

The tool is still in its infancy. It has been employed for both formative and summative assessment and low and high stakes examination in our university, but further evaluation of the tool is required at national and international level. Detailed statistics on concurrent and construct validity are needed to further validate the tool.

This has to be kept in mind that it will always be difficult to achieve an ideal tool to assess holistic approach of a student in managing a patient. As said by Mr. Gleeson, "The perfect method for long case clinical assessment has yet to be established" [8], however the efforts should go on and till then SLICE represents a suitable tool , modified and developed according to the contextual needs in assessing long case.

Conclusions

Pros:

- Well Structured
- Feasible, valid and Reliable
- Easy to conduct and score
- Examiner training easy

Points which need improvement:

- Validity and reliability to be tested at national and international level
- Electronic SLICE to be designed

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