Original Article

IMPORTANCE OF STRUCTURED VIVA AS AN ASSESSMENT TOOL IN ANATOMY

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ABSTRACT: Evaluation of students is a vital component of any educational process and it is necessary to improve the performance. Viva voce is an integral part of assessment of medical student. It is of utmost importance to evaluate the tool used to assess the students so that the competencies aimed to achieve in the learner, can be determined. In this study we compared the results of structural viva with an unstructured one in Gross Anatomy.

OBJECTIVE: Objective of this study is to compare the performance of 1st year medical students in structured viva of Gross Anatomy, in comparison to unstructured one.

DESIGN: Observational trial

MATERIAL AND METHODS: Anatomy viva was taken from first year MBBS students at ANMC, Islamabad by both structured and unstructured pattern. The domain selected to be tested were the nerves of upper limb. The specific pattern of structured and unstructured viva was formulated and results of both exams were analyzed and compared. The students were also asked for the feedback about the viva to assess the acceptability of the students.

RESULTS: On comparing the results there was statistically significant difference comparing the results of a structured viva with the unstructured one. The result showed that structured viva increases the objectivity and reduces subjectivity in marking, plus the students were overall satisfied and felt structured viva better than the traditional one.

CONCLUSION: The marks obtained by the students in conventional and structured viva showed that the structural viva is uniform and reliable method of assessment.

KEY WORDS: Structured viva, Traditional viva, Assessment tool

INTRODUCTION

The evaluation of students is an integral part of any educational process and is necessary to assess their performance. Since late 1990's, more emphasis has been placed on outcome based education and curriculum has become multidisciplinary to maintain the effectiveness of problem-cantered and competency-based medical education. [1] Oral examination is being used as a mode of assessment of medical students for years.

Oral examinations give the examiner the opportunity to explore student's depth of knowledge and their ability to express it in a precise manner. [2] Traditional viva examination which is still predominantly used in most of the medical schools as one of the assessment methods has some criticisms like lack of standardization, objectivity and reliability. Traditional oral examinations consist of a dialogue between a student and examiner, who asks questions to which candidate must reply. There may be considerable variation in the expectations of different examiners who may vary in their skill in assessing the student's abilities.[3]

The process involves many faculty members from respective departments. Hence there can

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be variations in the number of questions asked, difficulty level of the questions and the time allotted to each student. [4] In a traditional oral examination there is no limit of easiness or difficulty. The atmosphere during a traditional viva is often frightening. At times the dialogue takes the shape of confrontation than discussion. As studied by Holloway *et al,* (1967) there is an inverse relationship between anxiety and performance in oral examinations.[5] Questions asked may vary from examiner to examiner and may not cover the whole content. Most of the times the questions asked are of recall rather than those which test the problem solving and analytical ability of the students. As there is no uniformity of questions and their difficulty level, the assessment of students based on questions may be unfair.[6]

For these objectives to be achieved, the importance of an assessment tool with characteristics of validity, reliability, feasibility, and higher educational impact cannot be over emphasised.[7] These challenges can be resolved by structuring the oral examination to make it a better assessment tool. This can be done by replacing the traditional viva by structured oral examination. Although the implementation process is a bit onerous, but it can become an efficient assessment tool once in place. It is of utmost importance to evaluate the tool used to assess the students so that the competencies aimed to achieve in a learner, can be measured.[8]

In structured oral examination, as the question, answers and scores are noted by the examiners for each student, so a feedback can be given to them later, where they scored and where they did not perform well. The present study was undertaken with an aim of making structured viva from some selected topics in Anatomy as an assessment tool for 1st MBBS students.

MATERIAL AND METHODS

This study was conducted in Department of Anatomy Al Nafees Medical College in Feb' 2015. The study was given ethical exemption by the institutional ethical committee as it was an educational project and vivas are a routine part of student's assessment. 100 1st year MBBS students of Al Nafees Medical College from the Class of 2019 were involved in this study.

The students were selected by consecutive sampling (non probability). The total number of 100 students was divided by randomization into two equal groups of 50 each. Group I was selected for traditional viva and students of group II to a structured one. The domain selected to be tested were the nerves of the upper limb which included musculocutanous, median, radial and ulnar nerves. 8 faculty members separately conducted the viva one with a checklist and one without any checklist. Thirteen students were allocated to each faculty member.   The questions were constructed by a group of faculty members with inputs from all those who have participated in the teaching process keeping in mind the learning objectives of the content area. A final checklist of questions to be asked in the viva was prepared. The probable answers to those questions were also discussed. The process involved all the faculty members from Anatomy Department. Students were intimated about the viva structured pattern of viva well in advance. In the structured viva, all the faculty members conducted viva with the checklist. Total number of students who were present was 100. Marks obtained were written on a response sheet for each candidate. Student t test was used to compare the achieved marks in two types of viva. Feedback was taken from the students and faculty regarding their experience about the structured viva at the end of viva session by a questionnaire with open ended questions. Mean and standard deviation was taken out using SPSS version 20. P- value ≤ 0.05 was considered significant.

TABLE-1 Checklist of structured viva question prepared by the faculty members.

Structured Viva Question	Marks Key		
1) Enumerate braches of median nerve	Q 1	0.5	2 Marks
	Q 2	0.5	
	Q 3	0.5	
	Q 4	0.5	
2) Enumerate braches of radial nerve	Q 1	0.5	2 Marks
	Q 2	0.5	
	Q 3	0.5	
	Q 4	0.5	
3) Enumerate braches of ulnar nerve	Q 1	0.5	2 Marks
	Q 2	0.5	
	Q 3	0.5	
	Q 4	0.5	
4) To which cord does median, radial, ulnar and musculocutaneous nerves belong.	Q 1	0.5	2 Marks
	Q 2	0.5	
	Q 3	0.5	
	Q 4	0.5	
5) Important relations of musculocutaneous, median, redial and ulnar nerves	Q 1	0.5	2 Marks
	Q 2	0.5	
	Q 3	0.5	
	Q 4	0.5	
		Total	**10 Marks**

RESULTS:

The results of feedback showed that the anxiety factor was there whether viva is structured or unstructured. The examiners found it difficult to discriminate average and good performers in unstructured viva. Regarding the difficulty level 30%of the students found questions difficult while 70% found the viva questions very easy in unstructured viva. In structured viva the students found that it was a blend of easy and difficult questions. Range of marks obtained in unstructured viva was between 4-8 and 5.5-7 in structured viva. Number of passing students was 20&34 in unstructured and structured. The p value was 0.0076 by simple t- test which was statistically significant. 95% Confidence Interval of the Difference was almost same for both the groups.

DISCUSSION:

With the advances in medical education many strategies of teaching and learning are also revised .[9] Anatomy is a subject which has faced criticism by the medical educationists regarding the methods of teaching and learning. [10] Reliability of the viva examination is often questioned but according to some researchers reasonable reliability has been demonstrated with structured, standardized orals using hand-picked examiners.[11] The vivas conducted by the anatomists have been criticised for the low reliability and validity. Even the method of viva is now eliminated from the assessment of anatomy. [12] Over the years

the anatomists have tried to replace the traditional viva by the structured viva. They claim that the structuring will solve all the issues related to the low reliability and validity. [13] In this study it was seen that the element of fear was in both the structured and unstructured vivas. This is the factor which is highlighted the most by the critics of anatomy vivas. They claim that the element of fear reduces the productivity of the students but in some studies it has been seen that once the students know that the viva is structured then the element of fear is reduced.[14] Another study done in an Indian setup in Anatomy showed that students liked the structured viva over the traditional viva exam as it minimized the luck factor and reduced bias. The atmosphere during a traditional viva is often frightening. [15] At times the dialogue takes the shape of confrontation than discussion.[16]

Oral examinations are appealing because of their high face validity and also give confidence to the students to face the examiners.[17] In this study the examiners also found it difficult to discriminate between average and good performers in unstructured viva. In structured viva the difficult questions are already labelled and discrimination becomes easy. The unstructured viva proved to be difficult for some but majority found it easy while in structured viva they found a blend of easy and difficult questions. This factor the difficulty index actually is very important for assessment in Anatomy. It also effects the reliability of the exam and hence the oral assessments. The reliability of a method pertains mostly to the reproducibility of its results, that is, how often the same result is obtained.[18] The results between the structured and unstructured viva were statistically significant which highlighted the importance of construction of the oral exams. Making too easy or too difficult exams also puts a question mark on the reliability of the exam.

Assessment Designing is a complex task. While designing an assessment we have to keep in mind the level of students as well as the administrative and logistic issues.[9] Furthermore, the discipline to be assessed has its own specifications and we cannot apply one assessment method to all disciplines. [10]

CONCLUSION:

Structured viva can be more helpful in discriminating good from average performers in faculty member's opinion. The marks obtained by the students in conventional and structured viva showed that the structured viva is uniform and reliable method of assessment. The results of this study support the perception that structured viva can be a better alternative assessment tool to judge the understanding and knowledge of the undergraduate medical students. Introducing structured viva examination can effectively help them to overcome exam stress and achieve better results. Structured viva has better face validity as compared to unstructured viva.

Table 1: Feedback from the faculty members who conducted viva and the students

	Structured viva	Unstructured viva
Faculty feedback	n=4	n=4
Anxiety factor was there	Yes	Yes
Was it difficult to discriminate good and average performers	No	Yes
Students feedback	n=50	n=50
Anxiety factor was there	Yes	Yes
Questions were difficult or easy	All said mixture of difficult and easy questions (100%)	30% students said all questions very difficult 70% students said all questions very easy

n = Number of respondants

Table 2: Marks obtained by the students

	Range of Marks obtained	Number of passing students
Structured viva	5.5-7	34/50
Unstructured viva	4-8	20/50

Table 3: Mean, standard deviation and confidence interval of unstructured and structured viva

	N	Mean	Std Deviation	Std Error Mean	P- value	95% Confidence Interval of the Difference	
						Lower	Upper
Structured viva	50	7.5100	.76592	.10832	0.0076	-.05195	1.03195
Unstructured viva	50	7.0200	1.77270	.25070		-0.5515	1.03515

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2	Dr. Khadija Iqbal	Data Analysis, Results interpretation and statistical analysis
3	Dr. Sabah Rehman	Data analysis and scientic writing