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Oral Structured Examination

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PERCEPTIONS OF ORAL STRUCTURED EXAMINATION:A MOVE FROM SUBJECTIVITY TO OBJECTIVITY

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ABSTRACT

Objective: To determine the student and examiner perceptions regarding structured viva in comparison with conventional viva as a method of assessment.
Study Design: Quantitative survey.
Place and Duration of Study: Anatomy Department of Foundation University Medical College, from July 2014 to Oct 2014.
Material and Methods: A quantitative survey was conducted after introducing structured viva voce replacing traditional viva in the first and second year MBBS students. A total of 234 students and 12 examiners selected by simple random sampling filled a questionnaire regarding their perceptions. Their responses for each item were recorded on a like rt scale of 1 to 10. The total score for both types of viva were calculated. The mean of total score with SD for structured and conventional viva were calculated. The statistical significance between means scores of the two vivas were calculated using paired sample t-test.
Results: It was found that 88.0% students, and 83.3% examiners preferred structured viva as compared to the conventional viva. The mean scores for structured & conventional viva regarding uniformity of assessment time, structuring of questions, confidence in correct judgment, decreased biases, decreased stress level, uniform coverage of topics, continuity of chain of thought, increase in thinking time and student friendliness were significantly greater for structured as compared to conventional viva. The mean overall score for structured viva was 67.55 ± 15.02, and for conventional viva was 49.42 ± 17.27 with a statistical significance of p=0.001. The mean scores perceived by students and examiners for structured viva were not statistically significant.
Conclusion: Structured viva was more acceptable by the students as well as examiners due to its increased objectivity and less biases.

Keywords: Biases, Objectivity, Structured, Viva voce.

INTRODUCTION

In the last few decades, medical education has undergone an immense change, with introduction of modern teaching methodologies and accompanying modification in tools of assessment[1]. The main objective behind these modifications in the curriculum is to train students to become safe clinicians and to develop attitudes which come up to the expectations of the society[2]. To ascertain this, the teachers assess their students in all the three domains of learning: cognitive, psychomotor and affective, for which multifaceted tools of assessment are deployed. Among these, is the use of oral examinations or viva voce. Viva voce supplements the written exam rather than replace it[3]. Conventional viva gives the examiner the opportunity to have an insight into the student's depth of knowledge of the subject and to judge his ability to defend his opinion. It also gives a chance to the examiner to assess higher cognitive skills and the power of expression of the student. More important of all, it gives the examinera "tailor made" flexibility for every student and a potential for testing higher cognitive skills[4,5].

Despite these benefits, viva voce is criticized for having low reliability which is due to its subjectivity and the multiple biases associated with it[6,7]. This decreased reliability and multiple biases[8] associated with viva lead to an increased

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pre viva stress which is more than the tension experienced with other forms of examination and make it less acceptable to the student. The modifications in this tool of assessment is necessary[1] otherwise, the newer strategies of learning and teaching will be ineffective[11].

Table-I: Perception of students to conventional and viva structured (score on a scale of 1 to 10).

	Variable	Structured Viva Mean ± SD N=234	Conventional Viva Mean ± SDN=234	Statistical Significan+ce
1	Uniform distribution of Time	7.79 ± 2.31	3.99 ± 2.65	p<0.000**
2	Structured Questions	7.74 ± 2.20	4.29 ± 2.42	p<0.000**
3	Confidence of being judged correctly	7.04 ± 2.42	4.71 ± 2.72	p<0.000**
4	Less chances of bias	7.27 ± 2.53	4.33 ± 2.55	p<0.000**
5	Less stress level	6.70 ± 3.17	7.19 ± 2.75	p=0.075
6	Standardized coverage of topics	7.81 ± 2.34	4.26 ± 2.48	p<0.000**
7	Maintains chains of thought	6.47 ± 2.77	4.77 ± 2.69	p<0.000**
8	More time to think before answering	4.88 ± 3.04	5.56 ± 1.35	p=0.024*
9	Less intimidating	6.09 ± 6.46	5.99 ± 2.49	p=0.816
10	More Student friendly	6.42 ± 2.82	4.79 ± 4.40	p<0.000**
11	Overall score (out of hundred)	67.55 ± 15.02	49.42 ± 17.27	p<0.000**

Statistical Significance: Significant: p<0.05*, Highly Significant: p<0.001**

Table-II: Perception of examiners to structured and traditional viva (score on a scale of 1 to 10) .

	Variable	Structured Viva Mean ± SD N=12	Traditional Viva Mean ± SD N=12	Statistical Significance
1	Uniform distribution of Time	9.08 ± 1.72	4.08 ± 1.67	p<0.000**
2	Structured Questions	7.33 ± 2.53	5.91 ± 2.96	p=0.261
3	Confidence of being judged correctly	6.25 ± 1.65	6.16 ± 2.36	p=0.884
4	Less chances of bias	8.08 ± 2.42	5.25 ± 2.76	p=0.041*
5	Less stress level	7.66 ± 1.77	5.41 ± 1.72	p=0.002*
6	Standardized coverage of topics	8.16 ± 2.16	5.25 ± 2.17	p=0.020*
7	Maintains chains of thought	7.50 ± 1.93	5.75 ± 2.30	p=0.037*
8	More time to think before answering	5.25 ± 1.35	6.83 ± 2.28	p=0.103
9	Less intimidating	6.41 ± 1.72	6.33 ± 2.46	p=0.924
10	More Student friendly	6.83 ± 2.48	6.00 ± 2.59	p=0.530
11	Overall score (out of hundred)	73.16 ± 14.08	58.00 ± 18.41	p=0.050*

Statistical Significance: Significant: p<0.05*, Highly Significant: p=0.001**

medical psychologists and teachers are in turn also apprehensive that this excessive stress, may even affect the performance of the student[9]. It is therefore advocated that improving the objectivity of viva voce and correcting the rating errors and biases in oral examinations are likely to convert it into an effective, reliable and more acceptable tool of assessment[10,1]. Such

The medical schools all over the world have adapted new learning strategies to attain the standards set by accrediting bodies; but without an accurate tool of assessment these strategies will prove to be ineffective[12].

In medical schools, the viva voce is a popular tool of assessment both at undergraduate and post graduate levels[13]. The oral viva voce

enables the examiners to assess the students in all five cognitive domains of Bloom's taxonomy[14].

Inspite of the widespread use of viva voce, its reliability is still questionable due to lack of rating standardization[7]. Literature claims that if objectivity of the viva is not increased, the marks may not truly reflect the competence of the student[4].

With this problem in mind, structured viva was introduced in the assessment which was intended to minimize the biases, increase the reliability and acceptability and yet encompass within it the benefits of an interactive discussion with the student. Following introduction of this model, the present study was conducted with the objective to determine the student and examiner perceptions regarding structured viva in comparison with conventional viva as a method of assessment. It is hoped that if such a model is found satisfactory; it may be used in the annual university examinations and in other subjects as well.

MATERIAL AND METHODS

The study was conducted at the anatomy department Foundation University Medical College from July 2014 to October 2014. It was a quantitative survey. The questionnaire was administered to 260 students and 12 faculty members, out of which 234 students and 12/12 faculty members responded.

The minimum sample size (students) was calculated as 201, using the software of sample size calculator. The accessible student population was 300, confidence level 95%, Anticipated population proportion: 0.5, Absolute precision required: 0.04, Relative precision: 0.08.Random sampling was done. In this college a hybrid system based modular curriculum is being followed. Before the introduction of structured viva, at the end of the module, the students were assessed by means of a theory paper, traditional viva and OSPE. The viva wasconducted in the conventional manner; in which the students were assessed by a single examiner. Different students were examined by different examiners. The examiner had the freedom to choose the questions from any part of the designated curriculum and also had the flexibility of time used for assessing the candidate. No uniformity of questions or time utilized was observed. After the viva, the examiner awarded the marks in a subjective manner.

Later, structured viva was introduced in the end of module exam of first year and second year replacing the traditional viva. For conducting, the structured viva, the curriculum was divided into four major potions A, B, C and D which were allocated to different examiners sitting at four separate stations. Each major portion of the curriculum consisted of threemain subdivisions i.e. i, ii and iii. For each subdivision, 10 questions were considered as must know, 10 as good to know, and 10 were meant only for exceptionally good students. The examiners were instructed to ask any two questions from each category and allocate marks accordingly. The same process was repeated for the remaining two subdivisions with the same examiner. Each examiner had 4 minutes to assess the student after which the bell rang and the student moved on to the next station where another examiner followed a similar pattern for the next part of the curriculum. The students had to appear before 4 examiners (A, B,C and D) for 4 minutes each. At the end of the viva, the score of each component of curriculum from the four different examiners was added and the final result was calculated.

It washoped that by following this process, a structured viva was conducted with uniformity of time and difficulty level of the questions and also the biases associated with a single examiner were reduced.

After the viva the students and examiners were briefed about the present study. After getting their consent, they were administered the questionnaire. The questionnaire consisted of 10 items regarding different aspects of the conventional and structured viva which were to be scored aslikert itemon a scale of 1 to10 (one

being the minimum and 10 being the maximum). All the scores of the 10 items were added to calculate the overall scale of each type of viva as assessed by each student/examiner with 1 as the minimum and 100 as maximum score. The data was analyzed; using SPSS version 20.Themean scores with SD for structured and conventional viva were calculated as perceived by the examiners and the students. The statistical significance between means of the two types of viva were calculated usingpaired sample t-test. Apart from these, the perception of the students and examiners to structured viva was analyzed by calculating the percentages and frequencies of responses to direct questionswith a "yes" or "No" option and statistical significance was calculated using Fisher's exact test. A *p* value of less than 0.05 was considered as statistically significant.

Table-III: Statistical Significance between perception of students and examiners to structured viva (score on a scale of 1 to 10).

	Variable	Structured Viva Mean ± SD: student perceptionn=234	Structured Viva Mean ± SD: Examiner perception n=12	*p* value
1	Uniform Time	7.79 ± 2.32	9.08 ± 1.72	*p*=0.059
2	To the point	7.74 ± 2.26	7.33 ± 2.53	*p*=0.529
3	Correct judgment	7.04 ± 2.46	6.25 ± 1.65	*p*=0.262
4	Less chances of bias	7.27 ± 2.53	8.08 ± 2.42	*p*=0.280
5	Less stress level	6.70 ± 3.17	7.66 ± 1.77	*p*=0.298
6	Uniform coverage of topics	7.81 ± 2.34	8.16 ± 2.16	*p*=0.612
7	Maintains chains of thought	6.47 ± 2.77	7.50 ± 1.93	*p*=0.208
8	More time to think	4.88 ± 3.04	5.25 ± 1.35	*p*=0.676
9	Less intimidating	6.11 ± 6.53	6.41 ± 1.72	*p*=0.865
10	Student friendly	6.42 ± 2.87	6.83 ± 2.48	*p*=0.625
11	Overall score	67.55 ± 15.19	73.16 ± 14.08	*p*=0.207

Statistical Significance: Significant: *p*<0.05*, Highly Significant: *p*<0.001*

Table-IV: Overall opinion of students and examiners to structured and traditional viva voce.

S.N	Opinions	Student n=234		Examiner n=12		Statistical Significance
		Frequency	Percentage	Frequency	Percentage	
1	Prefer structured viva	206/ 234	88.0	10/12	83.3	*p*=0.645
2	Clear Instructions were given	166/234	70.91	10/12	83.3	*p*=0.518
3	Precise Timings were observed	195/234	83.3	12/12	100	*p*=0.223
4	Language was clear	189/234	80.8	12/12	100	*p*=0.131
5	allocated time was well utilized	183/234	78.2	12/12	100	*p*=0.077
6	Organizational flow was good	189/234	80.8	12/12	100	*p*=0.131
7	Questions were according to table of specification	184/234	78.6	12/12	100	*p*=0.133
8	Overall satisfaction	181/234	77.4	11/12	91.7	*p*=0.472

Statistical Significance: Significant: *p*<0.05*, Highly Significant: *p*=0.001**

Cornbach alpha was calculated to assess the internal reliability of all the items.

RESULTS

A total of 234 students responded to the questionnaire. The mean scores for structured & conventional viva regarding uniformity of assessment time (p=0.000); structuring of questions (p=0.000); confidence in correct judgment (p=0.000); decreasedbiases (p<0.000); decreased stress level (p=0.075); uniform coverage of the topics (p=0.000); continuity of chain of thought (p=0.000); increase in thinking time of the student (p=0.024) and student friendliness of the system were significantly greater for structured viva as compared to conventional viva. Regarding less intimidating effect of the examiner the means were not statistically significant (p=0.816). The mean of overall score for structured viva was 67.55 ± 15.02, and for conventional viva was 49.42 ± 17.27 with a statistical significance of p=0.001(table-I).

Twelve examiners also responded to the questionnaire. The mean scores for their perceptions are givenin table-II. The statistical significance of the differences between the scores perceived by students and examiners is given in table-III.

A total of 88.0% of the students, and 83.3% examiners preferred structured viva as compared to conventional viva (p=0.645). Majority of students and examiners felt that the instructions given prior to the beginning of the structured viva were clear, precise timings were observed on different stations during the structured viva, the questions were well framed and clearly understandable, the time was properly utilized at all the stations, organizational flow between different stations and overall conduction of structured viva was satisfactory. The frequencies for feedback are given in table-IV. None of the frequencies were significantly different in the students and the examiners (table-IV).

The alpha value of internal reliability of the 22 item questionnaire was 0.694.

DISCUSSION

In the present study the viva voce was structured and made more objective. The results showed that there was a significant increase in the student's confidence inbeing judged correctly with less biases in the structured viva as compared to the conventional viva.

The present study showed a high level of stress among the students before the viva. This has also been confirmed by other studies which claim similar results[9]. Educationists are concerned about this high level of stress which has no educational value. It neither motivates the student nor provides useful information to the examiner. It has therefore been recommended that measures should be taken to reduce this unintended stress and by decreasing the biases associated with it[9]. However, in the present study making the viva more objective by structuring it did not significantly reduce the stress. This is probably because it was a new system and inspite of thorough briefing, the students were still apprehensive about it.

In our study, a vast majority of students preferred structured viva over traditional viva. Their opinion was due decreased biases and increased objectivity of the structured viva. This is in accordance with other studies which claim that 93% of vivas are biased[8]. More over the majority of the students in the present study claim that structured viva was more student friendly, to the point and better in terms of standardized questions and uniform coverage of the syllabus. This opinion reinforces other studies in which students share a similar opinion[15,6].

Multiple studies claim that students prefer a structured more objective exam as compared to the traditional exams[16] because it isuniform, fair, less stressful, and less biased. Infact, they recommended its continued use as an assessment tool[8,17].

Numerous studies and literature confirm the findings of our study that viva voce is a valuable

tool of assessment but recommend increased structuring. A cross sectional survey conducted at Rawalpindi Medical College by one of the authors of the present study also concluded that viva voce is well accepted by undergraduate medical students but standardization and increased objectivity was recommended to reduce the biases[18].

Educational psychologists are of the opinion that oral assessments have a good predictive value,therefore instead of discontinuing their use, ways should be identified to improve the reliability and validity of the oral assessment[19].

CONCLUSION

Structured viva was more acceptable by the students as well as faculty due to its increased objectivity and less biases.

CONFLICT OF INTEREST

This study has no conflict of interest to declare by any author.

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