ORIGINAL ARTICLE

Perceptions of First and Second Year Medical Students to Improve Structured Viva Voce as an Assessment Tool

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ABSTRACT

Objective: To determine the perceptions of 1st and 2nd year MBBS Students about structured Viva Voce

Methodology: This cross sectional study was conducted at Shalamar Medical and Dental College Lahore, on 92 students. Duration of study was from July to December 2018. A questionnaire (based on 5 point Likert scale) was generated in Google forms and link was shared with the participants. The analysis was done by using SPSS version 21, frequencies and percentages were calculated, and Chi-Square Test was applied.

Results: Out of total 92 students, 32% belonged to the 1st and 68% to 2nd year MBBS. Majority of the 2nd year students (50.8%) showed their satisfaction regarding fairness and coverage of wide range of critical areas by Viva Voce as compared to the 1st year students. Greater percentage of students from both years consider that viva voce covered wide range of critical areas and were satisfied with level of difficulty and logical sequencing of viva voce questions. More than half of the participants from both classes consider it a valid assessment tool. Majority of 1st (65%) and 2nd year (63.1%) students thought that this tool of assessment highlighted their weaknesses and significantly higher number of 2nd year students consider that viva can highlight their strengths regarding the topic.

Conclusion: Majority of students from both years showed their satisfaction regarding various aspects of Viva Voce. However, significantly greater number of 2nd year students were satisfied with the capability of Viva Voce in highlighting their strengths as compared to 1st year students.

Key Words: Assessment, MBBS students, response, viva voce

INTRODUCTION

Viva voce has been serving the purpose of oral assessment since 1815. Viva Voce is a Latin term, meaning "with the living voice[1]." More specifically, it is a compulsory component in the examination process in all Undergraduate Medical Colleges in Asian Countries like Pakistan and India[2,3]. Through Viva Voce, the examiner can assess the knowledge of the examinee with logical reasoning. This technique is also helpful for the assessor in order to judge the concepts in a particular subject alongwith its theoretical application, although at the same time subjectivity in the form of biases of the examiners is difficult to ignore[4-6].

Other skills and qualities of the student such as communication, body language, confidence level, and attitude can be assessed through face-to-face oral examination, which would otherwise not be possible to assess either through MCQs (Multiple Choice Questions), SEQs (Short Essay Questions) or LEQs (Long Essay Questions). Undoubtedly an objective Viva Voce can only be ranked the best in terms of its efficacy and usefulness[3].

Literature supports the notion that advanced cognitive abilities like critical thinking, decision making, and

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problem solving of an individual can be well recognized through Viva Voce, thus it is ranked as more difficult in comparison to written assessment[2]. High face validity alongwith flexibility is undoubtedly considered the strengths of Viva Voce[1].

On the other hand, subjectivity is considered the primary flaw with respect to conventional Viva Voce. Other drawbacks may include frequency of the questions in each viva sitting, their range of difficulty, and also the time granted to answer each question. Moreover, certain other related factors such as its inconsistent nature, low reliability and non-uniform behaviour, all are also considered as its major drawbacks[7].

Hence, according to the view point of global researchers, the traditional oral assessment has been criticized mainly because of its inconsistent approach to assess or evaluate an individual's knowledge[4,5,8]. The aim of the current cross-sectional research is to compare the perception of first and second year MBBS students of Shalamar Medical and Dental College, Lahore, regarding Structured Viva Voce as a method of assessment in the subject of Physiology through feedback questionnaire.

METHODOLOGY

This study was conducted at Shalamar Medical and Dental College (SMDC), Lahore from July to December 2018. The study was approved by the Institutional Review Board of SMDC (IRB Number 0167). It was a cross-sectional study conducted on the students of first and second year MBBS after taking informed written consent from the participants. Convenience sampling technique was used to collect data. For data collection, a self-designed structured eleven-item questionnaire was developed, for determining the effectiveness of Structured Viva Voce.

Each item in the survey form was ranked on a 5-point Likert scale, with responses ranging from "Very Satisfied" to "Very Dissatisfied". To establish content validity, expert validation of this questionnaire was done by a panel of experts (including both subject specialists i.e. physiologists and medical educationists) at The University of Lahore. Reliability of the items was established through pilot testing by the authors of the questionnaire.

The responses were taken by generating the questionnaire in Google forms; the link was shared with the 300 respondents (150 students of 1st year and 150 students of 2nd year MBBS class). Chi-square test (with p-value <0.05 considered statistically significant) was applied on the frequencies and percentages of the recorded data by using SPPS version 21. Here chi-

square test was used to compare the obtained results from 1st and 2nd year classes and p-value for each item showed the level of significance of that comparison.

RESULTS

The participants of the study were students of 1st (38%) and 2nd year (62%) MBBS, out of whom 47 were male and 45 were female students. Regarding fairness of the Viva Voce, majority of the 2nd year students (50.8%) showed their satisfaction as compared to 1st year students, some remained neutral while only few were dissatisfied. However, the results were not significant (Table 1).

Majority (59.75%) of the participants from second and first year MBBS were satisfied with the coverage of wide range of critical areas by Viva Voce, few (17.4%) students from both years showed dissatisfaction regarding this construct. The difference in the opinion in this regard is not significant (p-value 0.55).

Majority of students of both classes were satisfied with the level of difficulty of viva questions, the difference in the opinion regarding level of difficulty among both years was not significant (0.13). Time to answer the viva question was considered appropriate by majority of the students of both years. Difference in the opinion of 1st and 2nd year students was not significant (p-value 0.23).

Though more 2nd year students (21.0%) remained neutral as compared to 1st year (11.4%) yet majority of the participants of both classes considered that the viva questions were logically sequenced. Non-significant difference was found among students of both year (p-value 0.07) (Table1).

Almost similar response on each category of Likert scale was observed regarding efficacy of viva as an assessment tool from the students of 1st and 2nd year MBBS (p-value 0.68), because the similar percentage of students showed satisfaction (53%) and dissatisfaction regarding this construct.

Fifty seven and fifty eight percent of 1st and 2nd year MBBS students were satisfied with the validity of viva as an assessment tool respectively. More first year students (34.2%) were dissatisfied as compared to second year student (19.2%) however, the difference was non-significant (p-value 0.15) (Table 1).

Among first year students, 76.9% and 69% among second year students found Viva Voce a stressful experience while 11.4% first year and 14% second year students did not experience stress during Viva Voce. However the difference in the opinion is non-significant (p-value 0.78).

Table1: Comparison of Structured Viva Voce Feedback Responses of First and Second Year Medical Undergrads Through Five Degree Likert Scale Questionnaire

Efficacy of Structured Viva Ranked By 1st Year and 2nd Year Medical Undergrads Through Likert Scale Feedback Questionnaire First Year (35)

Sr. No.	Class (n)	First Year (35)					Second Year (57)					Chi Square Value (X^2)	Critical value	P-value
	Items	A=Very Satisfied n (%)	B = Somewhat Satisfied n (%)	C = Neutral n (%)	D = Somewhat Dissatisfied n (%)	E = Very Dissatisfied n (%)	A = Very Satisfied n (%)	B = Somewhat Satisfied n (%)	C = Neutral n (%)	D = Somewhat Dissatisfied n (%)	E = Very Dissatisfied n (%)			
1	It was fairest	7 (20)	12 (34)	8 (22.8)	6 (17.1)	2 (5.7)	7 (12.28)	29 (50.8)	5 (8.77)	10 (17.54)	6 (10.53)	6.34		0.175
2	Had covered wide range of Critical areas	11 (31.43)	16 (45.7)	4 (11.43)	4 (11.43)	0 (0)	13 (22.8)	25 (43.85)	7 (12.28)	10 (17.54)	2 (3.5)	3.02		0.55
3	Satisfied with difficulty level of questions	9 (25.7)	17 (48.57)	2 (5.7)	5 (14.28)	2 (5.7)	15 (26.3)	23 (40.35)	13 (22.8)	3 (5.26)	3 (5.26)	7.0		0.135
4	Appropriate time to answer each question	12 (34)	8 (22.8)	3 (8.57)	7 (20)	5 (14.28)	14 (24.56)	22 (38.6)	9 (15.78)	8 (14)	4 (7)	5.59		0.23
5	Had logical sequencing in questioning	10 (28.57)	12 (34)	4 (11.43)	7 (20)	2 (5.7)	10 (17.54)	30 (52.63)	12 (21)	4 (7)	1 (1.75)	8.55	9.49	0.07
6	Was an effective tool to assess knowledge	9 (25.7)	10 (28.57)	8 (22.8)	5 (14.28)	3 (8.57)	10 (17.54)	21 (36.8)	14 (24.56)	5 (8.77)	7 (12.28)	2.28		0.68
7	Was an valid tool to assess knowledge	6 (17.1)	14 (40)	3 (8.57)	10 (28.57)	2 (5.7)	9 (15.78)	25 (43.85)	12 (21)	7 (12.28)	4 (7)	6.73		0.15
8	Was stress-full	18 (51.43)	9 (25.7)	4 (11.43)	2 (5.7)	2 (5.7)	23 (40.35)	17 (29.8)	8 (14)	5 (8.77)	4 (7)	1.71		0.78
9	I was satisfied with it	7 (20)	12 (34.28)	4 (11.43)	6 (17.1)	6 (17.1)	9 (15.78)	26 (45.6)	12 (21)	5 (8.77)	5 (8.77)	5.47		0.24
10	Highlighted my weakness in subject	12 (34)	11 (31.43)	5 (14.28)	5 (14.28)	2 (5.7)	15 (26.3)	21 (36.8)	16 (28)	3 (5.26)	2 (3.5)	4.72		0.32
11	Highlighted my strength in subject	10 (28.57)	10 (28.57)	4 (11.43)	9 (25.7)	2 (5.7)	11 (19.3)	30 (52.63)	10 (17.54)	5 (8.77)	1 (1.75)	11.23		0.024*

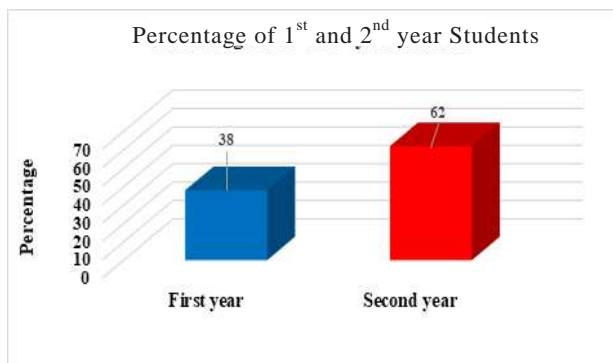p-value of = 0.05 is significant and shown with asterisk*

Figure 1: Percentages of First Year and Second Year Students Involved in the Study

The level of satisfaction regarding Viva Voce was higher among the second year students (61.3%) as compared to first year (54.2%) students. However, only 17.4% second year and 34.2% first year students were dissatisfied with this mode of assessment while, 21% second year and 11.4% first year students remained neutral (Table 1).

Majority of 1st (65%) and 2nd year (63.1%) students thought that this tool of assessment highlighted their weaknesses, 14.8% 1st year and 28% 2nd year students remained neutral and 11.1% while 20% 1st year and 8.7% 2nd year students did not agree with this. However, the difference isn't significant (p-value 0.32).

Seventy one percent 2nd year and 57% first year students consider that viva highlighted their strengths regarding the topic, only 17.5 students of 2nd and 11.4% students of first year remained neutral while 10.45 students of 2nd year and 13.4% students of 1st year did not agree with this. The difference in the responses of 1st and 2nd year students is statistically significant regarding this construct (p-value 0.02).

DISCUSSION

The primary objective of the assessment of students is to evaluate their learning and understanding of the academic content. The entire process of assessment comprises various tools of examination, in order to achieve maximum transparency and accuracy of assessment procedure. This is because every tool of assessment has its own drawbacks and strengths[4,5]. Various kinds of examination tools have been used to assess medical undergrad students over the years. These include short essay questions, long essay questions, Viva Voce, objectively structured oral assessment, and objectively structured clinical assessment. Each is used with specific intention to assess certain attribute in the student[9].

This study assessed the perception related to only one mode of examination i.e. Viva Voce, which is perfectly defined by Joughin as "Assessment in which a student's response to the assessment task is verbal, in the sense of being expressed or conveyed by speech instead of writing[1]". Conventional way of Viva Voce has been regarded as one of the compulsory parts in the final summative assessment, in all medical undergraduate institutes of Asia, more profoundly in India and Pakistan. This is primarily due to certain core strengths of viva voce, such as its high face validity, compliance, and

flexibility. Many other benefits have also been associated with oral assessment as high cognitive knowledge that can be assessed by this mode of examination. Similarly the attribute of attitude, confidence and interpersonal ability can easily be assessed through oral examination[10].

In accordance with global research, it has been suggested that in routine oral assessment the assessors are themselves confounders, due to many subjective traits, that can be ruled out from unstructured Viva Voce. Such traits are; the temperament of the examiner, his/her level of expectations, limitations, depth of knowledge in the related subject, accessibility in terms of time, and last but not the least the local environment of surroundings for Viva Voce[2].

A US study also declared that most of the medical schools/colleges in the US, had rejected the use of traditional unstructured oral assessment, mainly because of its weak validity and reliability. That is the reason that in the US, customary oral assessment has been limited only to exceptional and border-line undergrad students[11]. Another research on the same lines also suggested that 79% medical and 70% engineering students rated the Viva Voce as a strongly biased way of examination. They have built their opinion due to many subjective features of Viva Voce like its "halo effect", favouritism, varying difficulty level of questions from one student to another, and also the pattern of questioning[2]. In contrast, 54.3% 1st year and 63% 1st year MBBS students are satisfied with the fairness of the Viva Voce in our study.

A study on fourth year medical students of a public sector medical college from Islamabad, Pakistan found that 70% of their students agree that structure viva voce covered almost all the topics[3]. In the same lines, the present study revealed that 77% of 1st year students and 67% of 2nd year students agreed that structured Viva Voce covered a wide range of critical areas. The same study also claimed that their 97% students felt that the structured viva was less stressful. Contrary to this, our study explored that 76.9% of 1st year and 69.0% of 2nd year students found structured Viva Voce a stressful experience.

A paucity has been observed in previous literature in terms of perceptions of conventional as well as structured Viva Voce with respect to medical undergraduates[12,13]. Although our results were found to be consistent with the available data in this regard, as our studied group of medical undergraduates students also placed Viva Voce at moderate satisfactory level in terms of its effectiveness and not rated it at strongly satisfactory level on Likert scale. A previous study on

account of effectiveness of Viva Voce also suggested that using Viva Voce, only theoritical knowledge has used to be assessed, which has already been examined through written assessment[8].

Many previous studies have recommended the use of objectively structured oral examination in place of unstructured Viva Voce, which can help to reduce its subjectivity, but this can only be planned with the passionate contribution of a committed faculty[7,13].

Availability of time is the most important hurdle in the whole process of standardization for structured Viva Voce[14]. Time given to answer the viva question was considered appropriate by majority (62%) of the medical students of both years. A similar study from KSA in 2020 also displayed that majority (75%) of their medical students were satisfied with the time given to answer the question in their structured Viva Voce[15]. The same study revealed that 64% students were satisfied with the difficulty level of questions while in our study, 70% of students from both years were satisfied with the difficulty level of questions.

Objectives of medical curricula have been listed by Pakistan Medical and Dental Council and in general consensus, assessment must be aligned with these objectives, in order to reduce the factor of anxiety and prejudice from the minds of students and also to develop more motivation in them to focus on curriculum. However, in Pakistan the field of Medical Education as in its early stages, unable to implement structured standardized viva as a part of summative assessment in every medical undergraduate institute[16].

CONCLUSION

Majority of students from both years showed their satisfaction regarding various aspects of Structured Viva Voce. However, greater number of 2nd year students was satisfied with the capability of Viva Voce in highlighting their strengths as compared to 1st year.

Present study was conducted with a small sample size; with larger sample population, more realistic results can be drawn. Moreover, other items such as gender bias and any language barrier in the questionnaire should be included in future studies in the same regard, which were neglected in the current study.

Conflict of Interest: The authors declare that they have no conflict of interest.

Authors' contribution: AK: Wrote the results of the article, statistical analysis and critically revised the manuscript; AS: Helped in literature searching and wrote the introduction, discussion, did statistical analysis, and collected data.

REFERENCES

1. Ganji KK. Evaluation of Reliability in Structured Viva Voce As a Formative Assessment of Dental Students. Journal of Dental Education. 2017; 81(5):590-96.

2. Dhasmana DC, Bala S, Sharma R, Sharma T, Kohli S, Aggarwal N, Kalra J. Introducing structured Viva Voce examination in medical undergraduate pharmacology: A pilot study. Indian J Pharmacol. 2016; 48(Suppl 1): S52-S56.

3. Hashim R, Ayyub A, Fatima-tuz-Zuhra, Hameed S, Ali S. Structured viva as an assessment tool: perceptions of undergraduate medical students. Pak Armed Forces Med J. 2015; 65(1):141-4.

4. Dangre-Mudey G, Damke S, Tankhiwale N, Mudey A. Assessment of perception for objectively structured Viva Voce amongst undergraduate medical students and teaching faculties in a medical college of central India. International Journal of Research in Medical Sciences. 2016; 4(7):2951-54.

5. Kaur N, Manzoor S, Kaur S, Goyal A. Comparative evaluation of structured viva-voce examination and conventional viva-voce examination in ii mbbs students. Int J Med Sci Educ. 2019; 6:1-5.

6. Louis F. Small, Pretorius L, Walters A, Ackerman M, Tshifugula P. Students' perceptions regarding the objective, structured, clinical evaluation as an assessment approach. Health SA Gesondheid. 2013; 18(1):629-37.

7. Shaguphta T Shaikh. Objective Structured Viva Examination Versus Traditional Viva Examination in Evaluation of Medical Students. Anat Physiol. 2015; 5(3): 175.

8. Varuni de Silva , Hanwella R, Ponnamperuma G. The validity of oral assessment (viva) that assesses specific and unique competencies in a post-graduate psychiatry examination. SL J Psychiatry. 2013; 3 (2):16-19.

9. Shumway J.M. & Harden R.M. AMEE Guide No. 25: The assessment of learning outcomes for the competent and reflective physician. Medical Teacher. 2003; 25 (6): 569-84.

10. Rokade Shrikant A, Kate Deepali R. Structuring the unstructured: new dimension in viva assessment for anatomy. Int J Anat Res. 2017; 5(2.3):3976-82.

11. Torke S, Abraham R.R, Ramnarayan K and Asha K. The impact of viva-voce examination on students' performance in theory component of the final summative examination in physiology. J. Physiol. Pathophysiol. 2010; 1(1):10-12.

12. Ghosh A, Mandal A, Das N, Santanu K. Tripathi, Biswas A, and Bera T. Students' performance in written and viva-voce components of final summative pharmacology examination in MBBS curriculum: A critical insight. Indian J Pharmacol. 2012; 44(2): 274–275.

13. Imran M, Doshi C, Kharadi D. Structured and unstructured viva voce assessment: A double-blind, randomized, comparative evaluation of medical students. International journal of health sciences. 2019 Mar; 13(2):3.

14. Shah H K, Vaz F S, Motghare D D. Structured Oral Examination: From Subjectivity to Objectivity - An experience in Community Medicine. Journal of Educational Research & Medical Teacher. 2013; 1(1): 26-28.

15. Mallick AK, Mallick AK, Patel A. Comparison of Structured Viva Examination and Traditional Viva Examination as a Tool of Assessment in Biochemistry for Medical Students. European Journal of Molecular & Clinical Medicine. 2020 Dec 13; 7(6):1785-93.

16. Faisal Ghani Siddiqui. Final Year MBBS Students' Perception for Observed Structured Clinical Examination. Journal of the College of Physicians and Surgeons Pakistan. 2013; 23 (1): 20-24.