Original Research Article

COMPARATIVE EVALUATION OF STRUCTURED VIVA-VOCE EXAMINATION AND CONVENTIONAL VIVA-VOCE EXAMINATION IN II MBBS STUDENTS

Navpreet Kaur[1], Sami Manzoor[2*], Sharanjit Kaur[3], Anmol Goyal[4]

1. Professor, Department of Pharmacology, Gian Sagar Medical College & Hospital, Rajpura, Punjab, India,
2. Assistant Professor, Department of Pharmacology, Government Medical College, Anantnag, J&K, India,
3. Associate Professor, Department of Pharmacology, Dr Y.S. Parmar GMC, Nahan, H.P., India, 4. Assistant Professor, Department of Community Medicine, Gian Sagar Medical College & Hospital, Rajpura, Punjab, India

*Corresponding author – **Sami Manzoor**

Email id – samimagray070@gmail.com

ABSTRACT

Background: Viva-voce examination is an important tool for student assessment. The traditional or conventional viva-voce examination (CVE) is often perceived to be associated with subjective bias. At the same time, it does not meet the standards of parameters such as validity, reliability, and reproducibility. A structured viva-voce examination (SVE) can maintain a uniform pattern of questions and improve upon the conventional assessment tool of viva-voce. Aim & objectives: To compare the structured & conventional method of viva-voce examination for assessment of students in Pharmacology. **Materials and Methods:** This study was conducted in 2nd Prof MBBS students. Question cards with answer keys covering two topics- "Drugs acting on Respiratory system" & "Drugs acting on Gastrointestinal system." were prepared after validation from all the faculty in the Pharmacology department. The teaching-learning methods employed were didactic lectures and tutorials. The students (n=113) were assessed by two types of viva-voce examination with a crossover design after dividing them into two batches. The evaluation was done by feedback questionnaire and comparison of scoring by students when exposed to both SVE & CVE. **Results:** There was a statistically significant improvement (p<0.05) in scoring by students showing improvement with SVE. 85% faculty members & 84% students were satisfied with SVE. **Conclusion:** Results of this study suggest that SVE is perceived as a better assessment tool by both students & faculty and helped students in scoring better. It can be used alone or along with CVE as a tool for student assessment.

Keywords: Viva-voce examination, Assessment tool, conventional viva-voce examination (CVE), structured viva-voce examination (SVE).

INTRODUCTION

Student assessment is an important process which helps to evaluate and improve upon a teaching program and lay the foundation of newer educational concepts (**1**). After the completion of one and a half years of training in the subject of Pharmacology, MBBS students undergo final evaluation in the subject which consists of 2 theory papers and a practical examination including oral examination.

The oral examination which carries 20% marks in practical examination has the advantage of allowing direct contact between the examiner and the examinee & permits flexibility in questioning. Conventional viva-voce examination (CVE) is an important tool for the assessment of MBBS students, but this conventional method is often criticized for being very subjective & having poor validity and

reliability (**2**). At the same time, candidates appearing for the oral examination feel a level of anxiety and discomfort. Besides, the allocation of too short a time given to each student makes them dissatisfied. Most of the time, there are no guidelines given to the examiners about the number or type of questions and scoring/ marking criterion for each question. Also, the questions asked vary from examiner to examiner and may not cover the whole syllabi. As there is no uniformity of questions and their difficulty level, the assessment of the students based on these questions may not be fair (**3**). Besides this, some examiners may be biased and get influenced by the performance of predecessor students in a traditional oral examination.

Students experiencing anxiety during the traditional viva-voce examination can perform poorly as shown in a study by Holloway et al. (**4**). Variation in oral performance ratings can be attributed to the tendency for some examiners to be lenient and others to be stringent in their assignment of ratings. Such variations in the examiners' scoring pattern can significantly affect the pass/fail decisions of some examinees (**5**). Marks awarded to candidates by different examiners show poor reliability between scoring (**6**).

Keeping the above limitations of conventional viva-voce examination in mind, there is a need for improvement in the form of proper planning and clear guidelines to examiners for this method of evaluation. The oral examination should be conducted in a way that the candidate feels comfortable & non-threatened and gives his/her best performance. One step in this direction is Structured Viva-voce examination (SVE) which can bring uniformity to assessment & enhance student satisfaction (**7**). Conducting SVE is a resource-intensive work requiring lot of preplanning and proper training and orientation of the faculty.

METHODOLOGY

This study was carried out in the Department of Pharmacology at MM Medical College & Hospital, Solan, H.P. from December 2015 to March 2016. 113 students of 2nd Year MBBS participated in this study. After getting approval from the Institutional Ethical Committee, the students were enrolled voluntarily and written consent was taken from them. Two topics were selected for oral examination- 'Drugs acting on Gastro-intestinal system' and 'Drugs acting on Respiratory system'. These topics were taught one month apart; the teaching-learning methods employed were didactic lecture and tutorial. A session was taken for faculty and students to sensitize them about structured viva examination. For structured viva-voce examination, Question cards with respective answer keys were made for both the topics by faculty members of the Pharmacology department and they were validated by subject experts. Each Question card carried five questions, with each question carrying 2 marks. The oral examination for the first topic was conducted one week after the completion of the first topic and similarly for the second topic during next month. It was a crossover study design. There were two batches (A & B) of students according to the normal distribution of a practical class. For the formative assessment of the first topic, students of Batch A were assessed by SVE and Batch B by CVE. The data with scores obtained by the students was used for this study although keeping in view the ethical considerations, exposure of SVE and CVE was given to both batches by reversing the assessment method in the next class for the same topic. For the assessment of the second topic, the cross-over of batches was done. In this way, both the groups were exposed to both types of viva-voce examination for two different topics one month apart after a crossover. While conducting SVE, the student randomly selected one card from a box containing Question cards. Two minutes were given to each student to go through the questions before appearing before the examiner. Four examiners took viva voce individually for each topic during one session by either one type of oral examination. Five minutes were allotted for each student for each viva. It was ensured that the students did not interact with each other while the oral examination was underway. A total of four sessions were carried out, two for SVE and two for CVE. Feedback of students and faculty about both the methods was obtained on a Likert scale for evaluating this study. Students' scores for both types of viva were compared and statistically analysed by the unpaired t-test. Inclusion criteria: Only those students, who participated in both types of viva-voce examination (SVE & CVE) were considered for this study. Exclusion criteria: Some students who appeared in only one type of viva-voce examination (Either SVE & or CVE) were not included in this study.

This study was conducted as part of the formative assessment covering two small topics from the subject of Pharmacology. The results can be more comprehensive and conclusive if all the topics covering the whole syllabi of Pharmacology are included for the oral examination as part of

summative assessment. The students, performance in summative assessment during first-year MBBS was not compared with the performance in this formative assessment.

RESULTS

Statistical analysis of students' scores was done for both types of viva-voce examinations. The unpaired t-test was applied to compare students' performance in two batches. There was a significant difference ($p < 0.05$) in both groups showing better scoring with SVE. (Table 1)

A questionnaire (Likert scale) was prepared after prior validation from Medical Education resource faculty at the institute followed by a pilot test of questionnaire on a small sample of respondents. Feedback received on Likert scale showed that 84.95% of students (Graph 1) and 85% of faculty (Graph 2) were overall satisfied with SVE. Regarding the uniformity of the questions asked; 78.76 % students were satisfied with SVE. 81.41% students perceived satisfaction with regard to syllabus coverage and 69.02 % students were satisfied with respect to time allotment for SVE.

DISCUSSION

Assessment in medical education is done in the form of examination conducted at periodic intervals to assess the level of knowledge of students and based on their performance, they are promoted to the next level. Many attempts have been made to make the assessment more objective and reliable rather than subjective. The oral examination is an important assessment tool which enables the examiner to assess the student in almost all fields of cognitive domains **(8)**. Some educationists have tried to introduce innovative methods of assessment so that the limitations of conventional viva examination can be overcome. **(9)**. In this study, the statistical analysis of students' score for both types of viva-voce examinations to compare their performance showed significant improvement in result ($p < 0.05$) showing better scoring with a Structured viva-voce Examination for majority of the participants. Overall student satisfaction with SVE was 84.95%; 78.76 % students were satisfied regarding the uniformity of the questions asked; 81.41 % of students perceived satisfaction with regard to syllabus coverage and 69.02 % of students were satisfied with respect to time allotment for SVE. Similarly, faculty feedback also provided positive feedback, with 85% faculty members satisfied with SVE. The results of this study are similar to the study done by Vankudre et

al. with respect to overall student and faculty satisfaction **(10)**. A similar study by Verma et al showed a statistically significant difference in students'marks, showing structured viva is more reliable & uniform method of assessment of students **(11)**. A study by Shenwail and Patil showed by student's response that Structured oral examination is more reliable, coverage of syllabus is more, explored the subject more, minimized the luck factor and more comfortable than traditional oral examination. Level of anxiety or fear among the students is also less in this method of oral examination. Uniformity of questions makes SOE a fair assessment tool **(3)**. A study done by Khilnani et al. has suggested that for implementing structured oral examination, orientation and training of examiners in assessment strategies is necessary. The questionnaire should be standardized and validated before its implementation for summative assessment. The participants in one study have expressed the opinion that structured viva-voce examination keeps the focus on the desired topic without deviation **(12)**. Puppalwar et al, in their study on Objectively structured viva-voce, have found it to be reliable but to build upon its validity, they suggest further studies of a similar kind on a large scale **(13)**. In their Review article, Rahman & Rahman have also advocated that implementation of the Structured Oral Examination system will help to evaluate medical students properly and will help in the development of medical education **(14)**.

CONCLUSION

In the present study, students and faculty perceived structured viva-voce examination to be a good method of assessment and feasible. This study also suggests that SVE is a better tool of student assessment than CVE. It helps to create a conducive atmosphere and a non-threatening environment. With the provision of equal duration of time for each candidate and uniformity of questions asked, it reduces subjectivity and enhances satisfaction levels among students and faculty alike. Although SVE is more resource-intensive work and requires prior planning; with proper training of faculty; this can prove to be a useful assessment method. Implications/Recommendations: SVE can be used alone or along with CVE to enhance satisfaction among students & faculty and bring objectivity to oral examination. It can be made a regular feature of formative and summative assessment in medical education. Initial inputs for creating validated Question cards for various topics will require more effort and time on part of the faculty; but once

implemented in the department, it will lead to streamlining of conduct of oral examination and departmental output will ultimately be increased manifold.

REFERENCES

1. Tabish SA. Assessment Methods in Medical Education. Int J Health Sci. 2008 Jul;2(2):3–7.
2. Oumachigui A. "Oral Examinations". Medical Education, Principles and Practice.1995;139-143.
3. Shenwai MR, Patil B. Introduction of Structured Oral Examination as A Novel Assessment tool to First Year Medical Students in Physiology Journal of Clinical and Diagnostic Research. 2013 Nov,7(11): 2544-47.
4. Holloway PJ, Hardwick JL, Morris J, Start KB. The validity of essay and viva voce examining technique. Br Dent J. 1967, 123(5): 227-32.
5. Mark Raymond, Lynn C. Webb, Walter M. Houston. Correcting PerformanceRating Errors in oral examinations. Eval Health Prof. 1991, 14 (1), 100-22.
6. 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):25-7.
7. Gor SK, Budh D, Athanikar BM. Comparison of conventional viva examination with objective structured viva in second year pathology students. Int J Med Sci Public Health. 2014; 3(5): 537-9.
8. Bloom BS, Engelhart MD, Furst EJ, Hill WH, Krathwohl DR. Taxonomy of Educational Objectives, Handbook I: The Cognitive Domain. New York: David McKay Co Inc. 1956.29-34.
9. Shaikh S Objective Structured Viva Examination Versus Traditional Viva Examination in Evaluation of Medical Students. Anat Physiol 2015, 5:3 DOI: 10.4172/2161-0940.1000175.
10. Vankudre AJ, Almale BD, Patil MS and Patil AM. Structured Oral Examination as an Assessment Tool for Third Year Indian MBBS Undergraduates in Community Medicine MVP Journal of Medical Sciences. 2016;Vol 3(1), 33-6.
11. Verma A, Mahajan N, Jasani K, Patel J Evaluation & Comparison of Result: Conventional Viva Vs. Structured Viva. GRA - Global Research Analysis. 2013 May Volume : 2 (5); 188-9.
12. Khilnani AK, Charan J, Thaddanee R, Pathak RR , Makwana S, and Khilnani G. Structured oral examination in pharmacology for undergraduate medical students: Factors influencing its implementation. Indian J Pharmacol. 2015 Sep-Oct; 47(5): 546–50.
13. Puppalwar PV, Rawekar A, Chalak A, Dhok A, Khapre M Introduction of Objectively Structured Viva-Voce in Formative Assessment of Medical and Dental Undergraduates in Biochemistry Journal of Research in Medical Education & Ethics. 2014, Volume : 4, (3) 321-5.
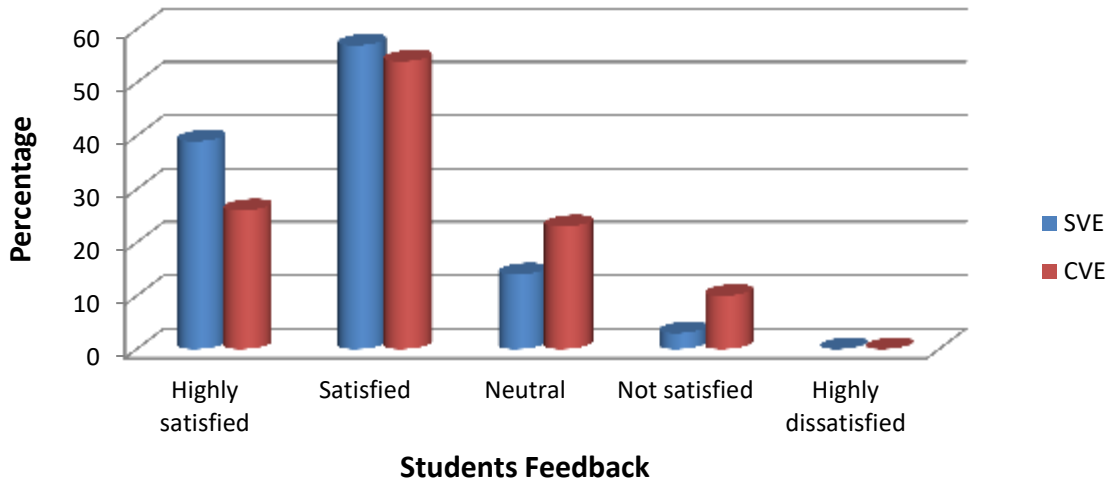14. Rahman H, Rahman MA. A Review on Structured Oral Examination (SOE) Dinajpur Med Col J. 2016 Jan; 9(1) 113-7.

Table 1- UnPaired samples Test for students' score

UnPairedT test for student's Score								
Variables	Mean	Std. Deviation	Std. Error Mean	95% Confidence interval of the Difference		t	Df	Sig. (2-tailed)
				Lower	Upper			
Batch A (SVE GIT)	5.72	1.64	0.21	0.39	1.5	2.9	111	0.004
Batch B (CVE GIT)	4.79	1.69	0.23					
Batch A (CVE Respiratory)	6.21	1.35	0.17	1.17	2.35	5.9	111	<0.05
Batch B (SVE Respiratory)	4.45	1.79	0.24					

CVE- Conventional viva-voce Examination; SVE- Structured viva-voce Examination

Graph 1: Students perception for viva-voce examination

Y-axis: Percentage (0 to 60)
X-axis: Students Feedback — Highly satisfied, Satisfied, Neutral, Not satisfied, Highly dissatisfied

Legend: SVE, CVE

Graph 2: Faculty perception for viva-voce examination

Y-axis: Percentage (0% to 45%)
X-axis: Faculty Feedback — Highly Satisfied, Satisfied, Neutral, Not Satisfied, Highly Dissatisfied

Legend: SVE, CVE