

Original Research Article

Assessment of Objective Structured Viva Examination (OSVE) as a tool for formative assessment of undergraduate medical students in Forensic Medicine

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Abstract: In theory paper assessment of knowledge is made whereas oral examination and practical examination are utilized to assess the skill of students. The traditional oral viva examination can be called unstructured one, as there is no fixed pattern, no Time duration, and no fixed number of questions. This study was conducted to assess Objective Structured Viva Examination (OSVE) as a tool for formative assessment of undergraduate medical students. In this cross-sectional study, seventy-four students were exposed to different stations of viva as well as Objective Structured Viva Examination (OSVE). A comparison was made of the student's performance was compared in both Objective Structured Viva Examination (OSVE) and traditional viva examination (TVE). Feedback was also gathered from the students about the same. Two sample independent 't' Test was applied to test the difference in the mean values of two groups. The mean scores out of 30 were 21.4 ± 4.5 for TVE and for OSVE the mean scores out of 30 were 24.7 ± 5.8 , respectively. The difference was found to be statistically highly significant. 49 (79%) rated OSVE easier than TVE, 6 (9.7%) stated that it was the same as TVE, 7 (11.3%) found OSVE more difficult. Forty-six (74.2%) of the students felt that OSVE is less time consuming as compared to the TVE. 45 (72.6%) of the students were of the opinion that OSVE had a broader coverage of the content, 11 (17.7%) felt that TVE covered the course better, while the remaining 6 (9.7%) were uncertain about it. 53 (85.5%) of the students OSVE was objective and unbiased as compared to TVE, 9 (14.5%) were uncertain. Objective Structured Viva Examination (OSVE) is a better tool than traditional oral viva examination (TVE) for formative assessment of undergraduate medical students. In the current scenario, TVE can be supplemented with OSVE i.e. combination of both the methodologies can be used to achieve better results.

Keywords: Student, Assessment, Tool, Objective Structured Viva Examination, Perception, Feedback, Medical College

INTRODUCTION

Assessment drives learning. Examination conduction is done intermittently to assess the level of knowledge of students. In theory paper assessment of knowledge is made whereas oral examination and practical examination are utilized to assess the skill of students [1]. The traditional oral viva examination (TVE) can be called unstructured one, as there is no fixed pattern, no Time duration, and no fixed number of questions. Even the questions asked to different examinees are not the same. Traditional viva has been compared with newer method like objective structured practical examination and objective structured clinical examination. In these studies investigators have found

that the structured methods correlate better with overall student performance [2, 3].

There are continuous attempts to make assessment more objective and reliable rather than subjective. One step in this direction is the Objective Structured Viva Examination (OSVE) described in 1975, by Harden *et al.*; at the Dundee University, for assessment in clinical subjects, which has been a useful tool in this regard [4]. The OSVE had been introduced as a reliable approach to assess the students. It is a flexible test format based on a circuit of 'stations'. At each station, a specific leaning objective is tested [5]. The OSVE has been widely used for formative and

summative assessment in various medical disciplines worldwide, including the non-clinical disciplines [6].

So it was decided amongst faculty members that for the betterment of assessment system they will take the initiative. It would not only prove better tool for assessment of skills of students but also the analytical & problem solving ability of the students. Therefore this study was planned with an objective to access Objective Structured Viva Examination (OSVE) as a tool for formative assessment of undergraduate medical students.

MATERIALS AND METHODS

The present cross-sectional study was planned and executed by the Department of Forensic Medicine in collaboration and consultation with the Medical Education Department of a tertiary care teaching institution of northern India. In this study, all the medical undergraduate students currently studying in the second year were included in this study.

Seventy-four students were exposed to different stations of viva as well as Objective Structured Viva Examination (OSVE). A comparison was made of the student's performance was compared in both Objective Structured Viva Examination (OSVE) and traditional viva examination (TVE). Feedback was also gathered from the students about the same.

As the OSVE was being conducted for the first time, the students were informed and briefed one week prior to examination regarding the plan for conducting the part ending practical assessment – by both Objective Structured Viva Examination (OSVE) and traditional viva examination (TVE). The OSVE was planned for 30 marks, viva voce of 30 marks.

After the examination, feedback was obtained from the students with the help of a self-administered questionnaire. Questions pertaining to the student's perceptions regarding OSVE compared to TVE, the difficulties they faced, and their opinions regarding inclusion of OSVE as an assessment method, were included.

The students were informed that their participation in the study voluntary. Anonymity of the students was maintained. The study adhered to the tenets of the Declaration of Helsinki for research in humans. Informed consent was obtained. Ethical committee approved the study. All the questionnaires were manually checked and edited for completeness and were then coded for computer entry. After compilation of collected data, analysis was done using Statistical Package for Social Sciences (SPSS), version 20 (IBM, Chicago, USA). The results were expressed using appropriate statistical methods. Mean and standard deviations were calculated. Two sample independent's' Test was applied to test the difference in the mean values of two groups. P value <0.001 was considered highly significant.

RESULTS

Out of eighty students, seventy-four took both the tests – TVE and OSVE. Data of 74 students was analysed in this study. Out of total, 51 were male students whereas remaining 23 were female students.

The mean scores out of 30 were 21.4 ± 4.5 for TVE and for OSVE the mean scores out of 30 were 24.7 ± 5.8 , respectively. The difference was found to be statistically highly significant. This showed that the mean scores for OSVE were better as compared to the TVE. (Table 1)

Table 1: Mean scores of study subjects for TVE and OSVE

Variables	Traditional Viva Examination (TVE)	Objective Structured Viva Examination (OSVE)	p-value*
N	74	74	<0.001
Mean scores	21.4	24.7	
Standard Deviation (SD)	4.5	5.8	
*Two sample independent 't' Test; Highly significant, <0.001			

Out of 74 students who took both the tests, 62 responded to the feedback questionnaire. In response to the question related to difficulty level, 49 (79%) rated

OSVE easier than TVE, 6 (9.7%) stated that it was the same as TVE, 7 (11.3%) found OSVE more difficult. (Figure 1)

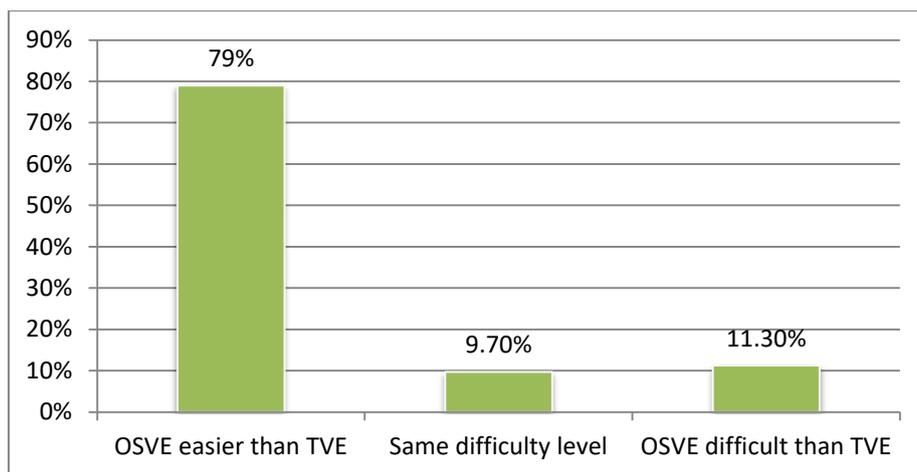


Fig-1: Bar chart showing responses of students towards difficulty level in OSVE and TVE

Forty-six (74.2%) of the students felt that OSVE is less time consuming as compared to the TVE. 45 (72.6%) of the students were of the opinion that OSVE had a broader coverage of the content, 11 (17.7%) felt that TVE covered the course better, while the remaining 6 (9.7%) were uncertain about it. 53 (85.5%) of the students OSVE was objective and unbiased as compared to TVE, 9 (14.5%) were uncertain.

DISCUSSION

The criterion of a good examination includes validity, reliability, objectivity, practicability, relevance, and promotion of learning, power to discriminate between students, relaxed environment and a positive student feedback [7]. As all the students were exposed to both the types of examinations, TVE and OSVE, the student's perspective regarding both methods of examination could be generated and gathered. OSVE examines the student in cognitive aspects like recall and interpretation. TVE also rely on the communication skills of the student.

We observed that the mean scores scored by students for OSVE were better as compared to the TVE. The mean scores out of 30 were 21.4 ± 4.5 for TVE and for OSVE the mean scores out of 30 were 24.7 ± 5.8 , respectively. Another study from Maharashtra is also in concordance with our observations [8]. Better performance with OSVE can be explained as the atmosphere during traditional oral examination is often threatening where as in OSVE questions were specific, the fright of facing the examiners was not there and the students could put in their best.

In this study 74.2% of the students felt that OSVE is less time consuming as compared to the TVE. Time consumption by OSVE is less than TVE. Different levels of cognition can be tested by OSVE in the specified time. Traditional method of examination gives the student opportunity to present his/her

communication skills, which he/she is unable to do in OSVE. Communication skills are a vital to shape student into a doctor. A holistic approach towards the subject is difficult with OSVE [9].

If we are to discontinue any method we must be aware of the possible consequences on learning [10]. The OSVE-like OSCE is associated with "achieving" style of learning but not with "meaning" or "reproducing" style of learning [11]. The OSVE complements other methods of assessment. It allows us to directly observe the student, give similar questions to all students, check on minute details in order to standardize and focus our evaluation, to be more objective and unbiased in marking [12]. On the other hand our conventional methods allow for an in-depth analysis of the subject, with more interaction between the examiner and the student. The examiner's professional judgment and experience can make the examination a learning exercise as it provides an instant feedback to the student [13, 14].

This study has several strengths. First, to our knowledge, assessment of Objective Structured Viva Examination (OSVE) as a tool for formative assessment of undergraduate medical students in Forensic Medicine has not been investigated much. Very few similar studies are available in the literature. Feedback is cornerstone for improvement. As far as teaching learning improvements are concerned, findings of this study can be utilised for the same. All students faced a pre-validated questionnaire hence no question of discrimination. The study has some limitations as well. This study was conducting among just eighty students. Study with bigger sample size and preferably involvement of other centres is warranted.

CONCLUSIONS

On the basis of findings of this study, it can be concluded that Objective Structured Viva Examination (OSVE) is a better tool than traditional oral viva

examination (TVE) for formative assessment of undergraduate medical students. In the current scenario, TVE can be supplemented with OSVE i.e. combination of both the methodologies can be used to achieve better results.

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