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Original Research Article

Study on perception and effectiveness of structured viva among first year MBBS students

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ABSTRACT

Removing the rigidity from Traditional Viva (TV) and making it flexible and easy with structured viva (SV) can drastically boost students' preparedness to appear confident in exam so that their knowledge and performance can improve. This study was conducted to identify the perception of faculties and students about SV and to evaluate the effect of SV on performance of students. After taking permission from Ethical committee, all willing students of first MBBS (2020-21), Government Medical College, Surat were enrolled in the study and were divided into 8 batches among 8 faculties. Pre validated SV cards were prepared well in advance. At the end of viva the pre-validated Questionnaire was given to collect their feedbacks for SV. Unpaired Student's t test and paired t test was applied for statistical analysis. When calculated statistically, it was found that, except for lower limb, students achieved more marks with SV as compared to TV. When combined and compared, the total marks obtained by the students in SV were more than the marks obtained in TV. The results from students' perspective suggests that SV is a more precise and unbiased way of practical examination of viva. It is valid, reliable and not/less subjective. Overall, Time consumption, Ease of execution, Ease of understanding and Ease of assessment make the SV a very good and noticeable option to TV. Considering faculties' perception which was reflected as mixed responses, we can still create a good framework for installation of SV as a formative assessment method.

1. Introduction

Assessment of performance and knowledge of a medical student during one on one questioning i.e. viva has always been a matter of discussion and has always shown some scope of improvement from students' part and on examiners' part as well. Certainly in an overloaded curriculum students will pay attention to topics that they know will feature in examinations.[1]

Unfortunately, the fact that students can successfully answer examination questions on a topic is no guarantee that they will retain their knowledge of the subject. Assessments that are based on a one off factual recall are notoriously unreliable as indicators of real learning.[2] Before conduction of SV it is a must to get the questionnaire pre-validated and it should be kept in mind that the questionnaire is testing all the domains of the student.[3] The traditional viva examination is more subjective and has been reported to have lesser reliability, objectivity and validity.[4] SV should include predetermined questions basedon the syllabus with well-defined objectives rather than random questions personally formulated by examiners on their whims and discretion. It will reduce apprehension and anxiety regarding uncertainties in the viva and provide a comfortable environment.[5] Traditional method of examination gives the student a chance to present his communication skills which he is unable to do in Objective structured viva examination (OSVE). Communication skills

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are a must to develop for an upcoming doctor. A holistic approach towards the subject is difficult with OSVE. Different levels of cognition can be tested by OSVE in the specified time.[6] The present study intends to study the removal of rigidity from such examinations and make it flexible and easy to boost students' preparedness to appear confident in exams and thus improving their knowledge and performance as well.

2. Aim and Objectives

To identify and evaluate the effectiveness of SV as a formative assessment tool in the anatomy department, as well as the impact of SV on student performance as defined by their academic performance, by gathering feedback from faculty and students.

3. Methodology

It is a Cross sectional observational Study. All 250 students of the first M.B.B.S batch 2020-21 of Government medical college, Surat were sensitized about structured viva and written informed consent were taken for including in the study after receiving permission from IRB (Institutional Review Board). Students were divided into 8 batches among 8 faculties from the Anatomy Department. 4 batches appeared in traditional viva (TV) and the other 4 batches appeared in structured viva (SV). In this study each student was asked to choose 2 cards randomly from the tray. Each card had same "structured pattern" of questions regarding a particular topic. Students appeared for the upper limb viva, lower limb viva and head n neck part 1 and part 2 viva during given period of the study. Total 4 examinations were included in this study. Each student got the equal opportunity to face the both type of viva. In this viva, the pre validated questions were framed by a group of faculty members, mainly with the inputs from all those who had participated in the teaching process by keeping in mind the learning objectives of the contents. The probable answers to those questions were discussed among. Difficulty of the questions were strictly be kept at the undergraduate level and included only "must know" and "desired to know" types of questions mainly with the clinical implications. Respective faculty members had conducted viva with the checklist in their batches. Student t-test was used to compare the marks achieved in two types of viva. At the end, pre-validated questionnaire in the form of Likert's 5 point scales was given to get feedback from the faculties and students to interpret their perception about structured viva.

Data from questionnaires and viva scores were collected and entered into a Microsoft Excel spreadsheet. Based on the data to be examined, independent and paired student t-tests were utilized in SPSS software version 13. It was deemed statistically significant when the p value was 0.05. Questionnaire data was examined using the frequency distribution.

4. Results

Viva 1: Total number of students who appeared for upper limb viva was 250. By using an independent t test mean score and SD were derived. Total marks of both vivas were 5. The mean score (out of 5) for upper limb viva was 3.09 ± 0.70 for TV and 3.45 ± 1.04, for SV respectively (Table 1). The p value was 0.001which was statistically significant.

Viva 2: Total number of students who appeared for lower limb viva was 205. By using an independent t test, the mean score (out of 5) for upper limb viva was 3.47 ± 0.83 for TV and 3.21 ± 0.12, for SV respectively (Table 2). The p value was 0.08 which was statistically not significant.

Viva 3: For head & neck part-1 viva, 248 students appeared. In this, for TV and SV, mean score out of 5 was 3.03 ± 0.99 and 2.87 ± 0.71, respectively. The calculations were done by applying the independent t test (Table 3). The p value was 0.001which was statistically significant.

Viva 4: For head & neck part 2, number of students appeared was 248. In which, for TV and SV, the mean score out of 5 was 3.39 ± 1.22 and 3.32 ± 1.32, respectively. These were calculated by using the independent t test (Table 4). The p value was 0.001which was statistically significant.

Now out of 250 students, the number of students who appeared two times for TV and two times for SV was 204. All students who had missed at least one of 4 exams were excluded from the upcoming calculation. We considered only those students who appeared for both types of the viva four times in total i.e. two times for TV and two times for SV. So after comparing the marks of both types of viva for the individual student by applying the paired t test, the mean score of TV out of 10 is 6.28 ± 1.36 and mean score of SV out of 10 is 6.83 ± 1.88. Here the p value is <0.005 which was statistically significant (Table 5).

In order to summarize the aforementioned statistics, we may say that, with the exception of the lower limb viva, the mean results in SV were higher than the mean scores in TV in all four tests. When totaled up and compared, the students' scores in SV were higher than their scores in TV. This was done to support up the findings from the comparison of different part-by-part exams. Further to explain the usage of unpaired T test for comparison of SV and TV, we can consider both types of viva as a tool to evaluate students' performance and not comparing individual student's performance with her/his own in other type of viva. Whereas, by applying the paired t test, we compared the individual student's marks in both types of viva.

4.1. Student's response to questionnaire on SV

Students' Perceptions in the form of feedback about SV were taken. Out of 204 students who took up both types

Table 1: Comparison scores in TV and SV: upper limb

Exam	Type of viva	No of student (N)	Mean score	SD
Upper limb	TV	130	3.09	0.70
Upper limb	SV	120	3.45	1.04

Table 2: Comparison of scores in TV and SV: lower limb

Exam	Type of viva	No of student (N)	Mean score	SD
Lower limb	TV	98	3.47	0.83
Lower limb	SV	107	3.21	0.12

Table 3: Comparison of scores in TV and SV: Head & Neck 1

Exam	Type of viva	No of student (N)	Mean score	SD
Head & Neck 1	TV	120	3.03	0.99
Head & Neck 1	SV	119	3.39	1.22

Table 4: Comparison of scores in TV and SV: Head & Neck 2

Exam	Type of viva	No of student (N)	Mean score	SD
Head & Neck 2	TV	119	2.87	0.71
Head & Neck 2	SV	129	3.32	1.32

Table 5: Combined comparison ofscores in both types of viva

Exam	No of students (N)	Mean score	SD
TV	204	6.28	1.36
SV	204	6.83	1.88

Table 6: Students' responses to the SV (based on Likert Scale) N=170

S.No.	Statements	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1.	SV is "easy to understand" method for viva.	71(42%)	79(46%)	17(10%)	1(0.58%)	2(1.17%)
2.	Examiner's mood can Influence viva process.	39(23%)	61(36%)	35(21%)	24(14%)	11(6%)
3.	SV covered the entire topic as a whole.	35(21%)	68(40%)	42(25%)	20(12%)	5(3%)
4.	Questions were well organized.	29(17%)	105(62%)	15(9%)	5(3%)	16(9%)
5.	Questions were easy to interpret.	59(35%)	79(46%)	26(15%)	5(3%)	1(0.58%)
6.	Adequate time was allotted.	22(13%)	90(53%)	39(23%)	6(4%)	13(8%)
7.	SV reduces student to student bias in exam pattern.	36(21%)	59(35%)	49(29%)	13(8%)	13(8%)
8.	Less stressful than TV.	53(31%)	67(39%)	34(29%)	12(7%)	4(2%)
9.	SV can help improve confidence to appear in exam.	44(26%)	88(52%)	31(18%)	7(4%)	0
10.	SV should be used for all viva voce	64(38%)	47(28%)	42(25%)	10(6%)	7(4%)
11.	Examination experience is encouraging with SV.	42(25%)	76(45%)	44(26%)	6(4%)	2(1.17%)

of the tests, 170 responded to the feedback questionnaire. Percentage distribution were recorded to each statement in a below given table (Table 6).

4.2. Faculties' response to questionnaire on SV

Perceptions of 8 faculties were collected by using feedback questionnaires. Percentage distribution were recorded to each statement in a below given table (Table 7).

5. Discussion

The SV has been advocated for the practical assessment of preclinical and para clinical subjects. An attempt was made to test the feasibility and acceptability of implementing this method in the formative assessment by comparing it

Table 7: Faculties' responses to the SV (based on Likert Scale) N=8

S.No.	Statement	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1.	SVensures uniformity of questions for all students	4(50%)	2(25%)	2(25%)	0	0
2.	SV has the coverage of "must know" areas	4(50%)	2(25%)	2(25%)	0	0
3.	Satisfactory as long as the time management is concerned	0	4(50%)	2(25%)	2(25%)	0
4.	SV is monotonous	3(38%)	3(38%)	0	2(25%)	0
5.	SV lacks flexibility	2(25%)	3(38%)	3(38%)	0	0
6.	Students feel less stressed than TV	0	6(75%)	0	2(25%)	0
7.	SV reduces teacher's stress also	2(25%)	3(38%)	0	2(25%)	1(13%)
8.	Better tool to encourage learning than TV	0	3(38%)	2(25%)	2(25%)	1(13%)

with TV, and also by obtaining the students' and faculties' opinions with the help of a feedback questionnaire. 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] According to the findings from the viewpoint of the students, SV is a more accurate and objective method of practical viva examination. It is accurate, trustworthy, and less subjective. Additionally, SV appears to be simple to implement, keeps the students focused on the subject at hand, and, when properly constructed, can bring out the best in students in terms of confidence and calmness. There is no question of bias because all students completed a pre-validated questionnaire; if they know the answers, they are rewarded. The SV is a very good and noticeable alternative to TV in terms of time consumption, ease of execution, ease of comprehension, and ease of assessment. We can yet develop a solid foundation for SV installation as a formative assessment method by taking into account faculties' perceptions, which were represented in mixed replies. We can look for development and betterment in the execution of SV to break up the monotony, as suggested by certain faculty members in the feedback, so that the entire SV session is engaging and exciting for faculty members as well.

6. Conclusion

As suggested by the similar studies in the past and from the results derived from the present study, SV can be a very effective option that can be installed for formative assessment in the medical field. What actually matters is students' preparedness and readiness while taking up any minor or major exam. The SV can encourage students not only for appearing in exams but also for being in the best confident posture in the exam. SV can bring out the knowledge of most important "must know" areas. The viva thus becomes precise and easy to conduct. Having derived that, we can conclude from the students' feedback as well that SV can help students alleviate stress of exams and reduce the subjectivity from assessment. To sum up the mixed perception of faculties in feedback, we can seek for suggestions and advice from the experienced faculties so that SV can easily be advocated by faculties as well.

7. Source of Funding

None.

8. Conflict of Interest

None.

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