



ASSOCIATION OF STUDENTS' PERFORMANCE IN THEORY COMPONENT AND PRACTICAL/VIVA COMPONENT OF FINAL EXAMINATION IN PHYSIOLOGY.

Dr Nida Nowreen*

Lecturer, Department of Physiology, GMC Srinagar, J&K, India. *Corresponding Author

ABSTRACT

Background: All around the world medical educators have used many methods for assessing learners most of which have been quite successful. In the undergraduate medical education system in India, curricular guidelines of Medical Council of India lay emphasis on methods of assessment of both knowledge and skills. The summative assessment or final examination consists of written papers, oral examination and practical exercises. Oral examinations are believed to be less reliable compared to written as they are essentially subjective in nature. Keeping this in view this study was conducted with an aim to find out the association of students' performance in theory and practicals/viva of final examination in physiology.

Materials and Methods: This record-based observational study was carried out in the Department of Physiology, G.M.C. Srinagar. Marks obtained by students (n=291), in two batches i.e.2016-17 and 2017-18, in written and in practical plus viva components of the final summative examination in physiology were collected from the academic section. Correlation between the percentage of marks in theory and practical was assessed by Pearson's correlation coefficient.

Results: No significant relationship was found in percentage of theory marks and percentage of practical marks in the two batches

Conclusion: Our study showed a lack of significant correlation between students' performance in written and practical/viva examination. These findings demonstrate the subjective nature of oral examinations.

KEYWORDS :

INTRODUCTION

Assessment forms an integral component of learning and teaching process.¹ These assessment methods should be such that they provide insight into actual performance, as well as the capacity to adapt to change, find and generate new knowledge, and improve overall performance.² All around the world medical educators have used many methods for assessing learners most of which have been quite successful.³

In the undergraduate medical education system in India, curricular guidelines of Medical Council of India lay emphasis on methods of assessment of both knowledge and skills. These are assessed in formative assessment and the more decisive summative assessment. The summative assessment or final examination consists of written papers, oral examination and practical exercises.⁴ The written examination is a useful evaluation system that tests students' ability to recall facts and also assesses cognitive functions such as interpretation of data and problem solving skills.⁵ The conventional practical examination consists of actual performance of experiments. Oral examinations is a general encounter between a candidate and one or more examiners.⁶ Oral examinations are believed to be less reliable compared to written as they are essentially subjective in nature, afflicted with 'halo effects', 'errors of central tendency', a general tendency toward 'leniency' and 'errors of contrast'.⁷ Very few studies have tried to explore the relationship among current assessments methods with each other. Keeping this in view this study was conducted with an aim to find out the association of students' performance in theory and practicals/viva of final examination in physiology.

MATERIALS AND METHODS

This record-based observational study was carried out in the Department of Physiology, G.M.C. Srinagar from October to December 2018. The subject physiology has been given a maximum of 200 marks. Out of this 160 marks are for final summative examination and 40 for formative assessment. The final examination consists of a theory portion consisting of two written papers plus a grand viva and a practical part consisting of two practical sessions. In order to pass, a candidate must obtain 50% marks in aggregate with a minimum of 50% marks in written and viva together and a minimum of 50% marks in practical examination.⁴ Marks obtained by students (n=291), in two batches i.e.2016-17 and 2017-18 in written and practical plus viva components of the final summative examination in physiology were collected from the academic section. Anonymity was maintained. The data thus obtained was entered and percentages, mean were calculated in Microsoft Excel and the statistical parameters were analyzed using SPSS version 20.0.

RESULTS

Marks obtained by students in theory and practicals/viva were converted to percentages and mean of the percentages was calculated. The mean percentage of practicals was higher as compared to theory. Correlation between the percentage of marks in theory and practical was assessed by Pearson's correlation coefficient. No significant relationship was found in percentage of theory marks and percentage of practical marks in the two batches.(Table 1)

Table 1: Relation of Percentage of Theory and Practical/viva Marks.

S.No	Batches	Mean % in theory	Mean % in practicals	r	p-value	
1	2016-17	52.90	60.41	0.104	0.213	NS
2	2017-18	51.83	61.52	0.117	0.155	NS

NS=non significant

DISCUSSION

This study examined the relationship between performance of students in written and practical/viva examination. The results of our study showed a lack of significant correlation between students' performance in written and practical/viva examination (P>0.05). These findings demonstrate the subjective nature of oral examinations. The findings of this study are supported by a study conducted in the subject of pharmacology that also reported a lack of significant association between performance in written and in practical examination among students.⁷ Another study found a partial association between written and viva-voce marks of students.⁵

It has been well established that the viva session if carried out in appropriate manner, is an effective tool of assessment that can measure the candidate's knowledge, clinical skills, attitude and communication, skills all at the same time.⁸ Oral exams also have the potential to measure the student's achievement in course outcomes not restricted to knowledge, but related to individual's professionalism, ethics, interpersonal competence and qualities.⁹ Oral examinations are an appealing option because of their high face validity, their flexibility, and the possibility that the measure aspects of clinical competence that are perhaps not tapped in written examinations. But the reliability of this method may be affected by many factors, such as the anxiety of the candidate, inconsistency of the rater, and various situational factors.⁶ One way of reducing these limitations can be the use of oral examination in combination with OSVE (Objective Structured Viva Examination).

It has been made mandatory by Medical council of India for all medical colleges to establish medical education units (MEUs) in order to

enable faculty members to avail medical education technology (MET) for teaching through faculty development programs, since July 2009. The Medical Council of India (MCI) has also suggested that competency-based learning must be implemented in all the medical colleges. 'CBME (Competency Based Medical Education) is an approach to ensure that the graduates develop the competencies required to fulfil the patients' needs in the society. It deemphasizes time-based training and promises greater accountability, flexibility, and learnercenteredness.¹⁰ Modifications are a must in the existing format of examination so that it may provide better assessment of these competences. Multiple assessment methods are necessary to capture all or most aspects of clinical competency and any single method is not sufficient to do the job. For knowledge, concepts, application of knowledge ('Knows' and 'Knows How' of Miller's conceptual pyramid for clinical competence) context-based MCQ, extended matching item and short answer questions are appropriate. For 'Shows How' multi-station OSCE is feasible. For performance-based assessment ('does') mini-CEX, DOPS is appropriate.^{11,12} Another important aspect is strengthening of formative assessment as studies have shown a positive relationship between a comprehensive well designed formative assessment and final summative assessment.¹³

Small sample, cross sectional nature and collection of data from a single institute are some limitations of this study.

CONCLUSION

Our study showed a lack of significant correlation between students' performance in written and practical/viva examination demonstrating the subjective nature of Practical/viva examinations.

REFERENCES

1. Norcini JJ. Peer assessment of competence. *Med Educ* 2003; 37:539-43.
2. Fraser SW, Greenhalgh T. Coping with complexity: educating for capability. *BMJ* 2001;323:799-803.
3. Epstein RM. Assessment in medical education. *N Engl J Med* 2007;356:387-96.
4. Medical Council of India. Regulations on graduate medical education, 1997 (amended up to July 2017). Available at www.mciindia.org/documents/rulesAndRegulations/GME_REGULATIONS.pdf (accessed on 24 march 2018).
5. Ghosh A, Mandal A, Das N, Tripathi S, Biswas A, Bera T. Students' performance in written and viva-voce components of final summative pharmacology examination in M.B.B.S curriculum: A critical insight. *Indian J Pharmacol* 2012;44(2):274-5.
6. Torke S, Abraham RR, Ramnarayan K, 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):10-2.
7. Patel BS, Kubavat A, Piparva K. Correlation of student's performance in theory and practical of final summative pharmacology examination in M.B.B.S curriculum: A critical insight. *Nat J Physiol Pharm Pharmacol* 2013; 3:171-175.
8. J. Vankudre, B. D. Almale, M. S. Patil, and A. M. Patil. Structured oral examination as an assessment tool for third year Indian MBBS undergraduates in community medicine. *MVPJMS* 2016, 3(1), 33-36.
9. Harden RM. Developments in outcome based education. *Med Teach* 2002;24:117-20.
10. Frank JR, Mungroo R, Ahmad Y, Wang M, De Rossi S, Horsley T. Toward a definition of competency-based education in medicine: A systematic review of published definitions. *Med Teach* 2010;32:631-7.
11. Tabish SA. Assessment methods in medical education. *Int J Health Sci (Qassim)*. 2008;2(2):3-7.
12. Miller GE. The assessment of clinical skills/competencies/performance. *Acad Med*. 1990;65(9):S63-67.
13. Nowreen N, Ahad F. The Relationship between Performance of Students in Internal Assessment and Final Summative Assessment in the Subject of Physiology in a North Indian Medical College. *Int J Physiol*. April-June 2019;7(2),175-78