MULTIPLE CHOICE QUESTIONS AND OTHER METHODS OF EVALUATION IN ANATOMY: A COMPARATIVE STUDY

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HOW TO CITE THIS ARTICLE:

Anand Mishra. "Multiple choice questions and other methods of evaluation in anatomy: a comparative study". Journal of Evolution of Medical and Dental Sciences 2013; Vol2, Issue 37, September 16; Page: 7086-7089.

ABSTRACT: Multiple choice questions (MCQs) are a popular method of assessment due to its sheer advantage of ability to evaluate a lot of candidate in a short span of time. **AIMS & OBJECTIVE:** However due to different varieties of MCQs available there seems to be lacunae in the scoring pattern of MCQ in comparison to other methods of evaluation. **METHODS:** 100 MBBS students were taken and marks obtained in MCQs, written and practical assessment were evaluated and percentage of each was calculated. **RESULTS:** The marks obtained in MCQs were significantly higher as compared to written and practical scores. **CONCLUSION:** MCQs are scoring as compared to other methods of assessment and pass marks in MCQs should be higher as compared to other methods of evaluation. Also Extended matching questions (EMQs) should be used in place of MCQs.

KEY WORDS: Multiple choice questions, evaluation, extended matching question.

INTRODUCTION: Today multiple choice questions (MCQ) constitute a time tested method of ready assessment of under graduate students the world over. MCQ are widely used for formative evaluation and for selection purposes, though less common for summative evaluation¹. The recent revision of the preclinical course to a one year curriculum and the introduction of MCQ in the undergraduate syllabus have brought this system of evaluation into limelight².

MCQ are popular for evaluating medical students the world over for its logical advantage of being able to test a large number of candidates in a short span of time with minimum human intervention. But it has been put to disrepute by the logic that it only tests cognitive knowledge but does not evaluate professional competence where knowledge can be integrated with skills and attitudes³.

Each MCQ has two parts –a stem and a response. The stem is the information presented to the students in the form of one or more statements. A response has two parts the distracters or alternatives presented in a question and the key or the correct answer².

MCQ have been classified into following types-

1. Single best response
2. True /false completion
3. Multiple response type
4. Reason Assertion type
5. Match the two columns
6. Pictorial type

A study was thus taken to see MCQ as a method of evaluation and to compare with other methods of evaluation like written and practical assessment.

MATERIALS AND METHOD: For the study, 100 1st year M.B.B.S students were taken. Four internal assessment exams and terminal exams were taken into account. Internal exams were conducted after part completion and terminal exam was conducted after the completion of one semester. All the exams were of 160 marks, out of which, MCQ were of 30 marks, written assessment of 70 marks and practical exam of 60 marks each.

Percentage was calculated of marks obtained in each examination and statistical analysis was done to test the level of significance of difference between marks obtained in each type of assessment.

RESULT: In all the exams conducted mean MCQ score was higher as compared to mean score in written and practical assessment. Mean MCQ score was highest in the third test. (Table 1)
Statistical analysis revealed that there is significant difference between MCQ scores and written and practical scores in all the five tests (Table 2)

DISCUSSION: MCQs are mainly designed to evaluate knowledge; well constructed MCQs can also assess higher order cognitive processing like interpretation, synthesis and application of knowledge rather than simply testing memory recalls³.

Over-reliance on written assessment can lead to unwanted consequences like dependency on written learning only. So to make any assessment fair and valid, the written test should be strategically mixed with MCQs and practical assessment so that important contents are evaluated in the exam⁴.

In our study students fetched higher percentage of marks in MCQ assessment as compared to other types and this difference was statistically significant. This may be attributed to cueing and guessing, especially in Single best response (SBR) and True and False (T/F) type of MCQ. Also the absence of any negative markings encouraged the students to rationally guess the answers where they are not very sure about the correct response. So, our study validates the earlier studies where it was found that students tends to generally score higher in the MCQ exams as compared to other exams⁵.

MCQs function much better for the purpose of ranking a student as compared to deciding for a pass or fail situation. Hence it is unwise to have the same pass marks for MCQs as compared to an essay question⁵⁻⁷.

An alternative to MCQ has emerged which is known as Extended matching question (EMQ) where the options are increased from 3-5 to nearly 20. These types of questions negate guessing of the right answer. They are more reliable, more discriminating, and allow testing time to be reduced as compared to other formats of assessment⁹⁻¹¹.

CONCLUSION: MCQs are more scoring as compared to other formats of assessment and so passing marks for MCQ and other type of exams should be different. Also MCQs should be designed keeping following things in mind.

1. It should be related to the subject
2. It should be the sampled from the whole syllabus
3. It should be free of construction errors.
4. It should not reuse the questions
5. Extended matching question (EMQ) should be given priority over normal MCQ

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	No. of students	MCQ		THEORY		PRACTICAL	
		Mean	S.D	Mean	S.D	Mean	S.D
1 ST TEST	97	66	17.2	47	15.8	55.2	12.2
2 ND TEST	98	61	12.2	48.2	16	52.4	11.1
3 RD TEST	97	82.3	19.6	65.4	17.8	62.3	19.2
4 TH TEST	95	65	10.8	51.3	16.5	54.6	12
TERMINAL	99	62	13.3	46.2	15.1	50.2	11.3

Table 1- Marks percentage obtained in different types of evaluation

		Std. Error	Z value	'P' Value	Inference
1 ST TEST	MCQ &Theory	1.66	11.44	<0.05	Significant
	MCQ &Practical	1.48	7.33	<0.05	Significant
2 ND TEST	MCQ &Theory	1.38	13.26	<0.05	Significant
	MCQ &Practical	1.19	10.67	<0.01	Significant
3 RD TEST	MCQ &Theory	1.75	8.17	<0.01	Significant
	MCQ &Practical	2.38	6.89	<0.01	Significant

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4 TH TEST	MCQ &Theory	1.40	6.72	<0.05	Significant
	MCQ &Practical	1.36	7.68	<0.05	Significant
TERMINAL	MCQ &Theory	1.14	10.50	<0.05	Significant
	MCQ &Practical	1.19	9.68	<0.05	Significant

Table 2- Statistical comparison between different types of evaluation

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Date of Submission: 01/09/2013.

Date of Peer Review: 02/09/2013.

Date of Acceptance: 10/09/2013.

Date of Publishing: 11/09/2013