

**CURRENTLY PRACTICED ASSESSMENT METHODS FOR MEDICAL
UNDERGRADUATES: A TIME TO PONDER**

Archana Nimesh, Mohit Mehndiratta*, Rajarshi Kar, Seema Garg and Dinesh Puri

University College of Medical College Sciences and GTB Hospital, Dilshad Garden, Delhi.

***Corresponding Author: Dr. Mohit Mehndiratta**

University College of Medical College Sciences and GTB Hospital, Dilshad Garden, Delhi.

Article Received on 08/07/2017

Article Revised on 29/07/2017

Article Accepted on 20/08/2017

ABSTRACT

Background: Getting selected to study medicine requires high intellect and devoted preparation and only a few students make it through the selection process. However, considerable number of students performs poorly in examinations. Hence, through this study we wanted to probe whether assessment format has any bearing on the students' academic performance. **Method:** A questionnaire based feedback form was given to first year medical students of three consecutive academic batches. The questions were pertaining to the format of monthly/annual assessment test, the students' would prefer to have during their first professional examinations. The students were given an option to mention the reasons for the same. **Result:** First semester students' preferred multiple choice question (MCQ) based test format for monthly as well as annual examinations. Second semester students' responded equivocally with regards to the monthly test having almost same preference for MCQ format and 'combination of tests' format including objective, subjective and viva questions. However, regarding the annual examination, majority of the 2nd semester students wanted a 'combination of tests'. **Conclusion:** Newly joined medical students are habituated to solve MCQs for competitive entrance examinations. Thus, it's difficult to adjust with the sudden change in exam pattern in medical college. Therefore, monthly tests consisting predominantly of MCQs with gradual inclusion of other type of tests like viva, objective and subjective type questions for annual examination is more justified approach to expect an optimal academic performance and promote learning in depth.

KEYWORDS: Medical Education, Medical Students, Performance, Academic, Examination, Test.**INTRODUCTION**

The medical undergraduate course is considered to be highly esteemed academic course and a huge number of students apply every year for studying medicine. Getting selected as a student to study medicine calls for high intellect and a doted preparation by the students and only a few make it through the selection process. However, it has been observed that a considerable number of students (15%) perform poorly in academics^[1] though they have been selected for joining the course after being screened through highly competitive entrance examinations. Poor performance in exams does not necessarily mean poor competence of the students.^[2] The probable reason for the same could be that the syllabus in medical curriculum is bulky with tightly scheduled classes especially during first year. Besides this, the students have to take several assessment tests that account for their internal assessment marks. Students possessing adequate internal assessment marks are only allowed to appear for first professional examinations. Those students who secure inadequate marks in internal assessment tests are detained from taking the main examination. This creates stress amongst these students thereby intensifying the academic lag further. This paper explores whether assessment methods has any bearing on the academic

performance of the students. If it is so, then the probable reasons reasons for the same have also been explored and discussed.

OBJECTIVE

To assess questionnaire based feedback responses obtained from first year medical students pertaining to the type of monthly/annual assessment test that they would prefer in their examinations.

MATERIALS AND METHODS

The medical course in our country consists of 4 professional years and each year is further divided into 2 semesters except the 2nd professional year which has 3 semesters. In total there are 9 semesters of 6 months each. Hence, making up the course duration of 4.5 years with an additional mandatory 1 year of internship. This cross-sectional study was carried out on 1st and 2nd semester students of three consecutive 1st year medical undergraduate students after seeking approval from Institute's Ethics' Committee for human research. Four batches of students were enrolled for the study. Batch 1 and Batch 2 students belonged to 1st semester of two consecutive academic batches. However, Batch 3 and Batch 4 students belonged to 2nd semester of two

consecutive academic batches. After obtaining written consent for participation in the study from the students, a self-designed feedback questionnaire form (Table 1) was distributed to them. The questions asked in the feedback form were regarding the type of test they would like to have for their monthly test and annual examinations. In the feedback form, the students were given four choices to indicate their preference for test format. The students also had the option of choosing “can’t say” option against the questions (if they didn’t know or wanted to avoid answering the question). They also had the option of writing their own comments/reasons for choosing the respective choice. After obtaining the student’s feedback, the data was compiled and analysed. The comments written by students were also analysed so as to enable us propose certain measures that can be taken up to help students perform better in examinations.

DATA ANALYSIS

The responses obtained from the students were analysed and results so obtained were tabulated in the form of percentages (Table 2 and 3).

RESULTS

The data analysis with regards to the monthly tests revealed that majority of the students belonging to 1st semester opted for an MCQ based patterns in both the batches i.e. Batch 1 (58.7%) and Batch 2 (52.7%) (Table 2). However, the students wanting to have the monthly tests in the form of ‘combination of tests’ were comparatively less (Table 2).

Majority of the students belonging to 2nd semester of Batch 3 wanted their monthly test to be a combination of tests (59.5%) (Table 3). However, amongst 2nd semester students of Batch 4, almost same preference for combination of tests (40.6%) and MCQ based tests (43.6%) was seen regarding their monthly tests (Table 3).

The data analysis with regards to the annual theory test revealed that majority of the first semester students opted for an MCQ based pattern in both the batches i.e. Batch 1 (45.2%) as well as Batch 2 (50.6%) (Table 3). The results also revealed that majority of students belonging to 2nd semester opted for combination of tests in both the batches i.e. Batch 3 (58.8%) and Batch 4 (50.5%) (Table 3).

DISCUSSION

To assess the competency of medical students, written examination has been an inherent format wherein the subjective judgement of the teacher determines a student’s promotion to the next phase of education. In medical education, the hierarchy for clinical assessment should move from knows, through knows how and shows how, to does.^[3] However, the traditional written assessments tests measure the students’ ability to recall facts (knows), whereas there should be greater emphasis on the later stages of shows how and does.^[4] Ideally, the

assessment of competence should reflect the actual performance^[5] and not a virtual picture. A study has shown a poor relationship between assessment results in medical school and performance after graduation.^[2] Hence, considering the drawbacks of written tests, we took a feedback from the students regarding the test format they feel is best to evaluate them. Medical training for the doctors has got immense practical repercussions later on in their clinical practice. Hence, their competency should be appropriately tested by evaluating their performance through various test formats rather than resorting to the dictated traditional pattern of written exams and viva-voce exams. The concept of test enhanced learning has been well proven in studies available in literature.^[6]

From the results of our study, we have found that the students belonging to the first semester want their exam format to be predominantly MCQ based for their monthly as well as annual theory exams. The students of second semester have given an equivocal response with regards to the monthly test. Almost same percentage of students wanted monthly tests to be MCQ based and ‘combination of tests’. However, with regards to the annual theory exam, the 2nd semester students undoubtedly wanted combination of tests like MCQs, subjective, objective, OSPE, reasoning and assertion and viva voce questions.

On analysing the feedback forms further, it was observed that 1st semester students have mentioned in their comments preferring to have MCQ based tests in their monthly and annual theory examinations because these type of tests can help them score far better with respect to the existing pattern (written exams of long and short essay type questions). The students are in a constant stress to secure adequate marks in their monthly internal assessment tests in order to appear for the annual examinations. So, they find MCQ based format as a solution to score better marks. Some students have stated that they find it difficult to express their answers in words in the written subjective tests. They do not realise which points have to be emphasised more while writing essay type questions. Some students have had hand writing while some students find it difficult to express their answers in English language because their medium of teaching in school wasn’t English but rather the local language. These are the students who suffer the most in their written subjective tests as they are unable to express their answers effectively. We agree with the above mentioned problems faced by the students. Considering that language can be a barrier in the selection process of deserving students’ in the pre-medical entrance tests, the NEET exam (National Eligibility cum Entrance Test, the pre-medical entrance test at all national level) in our country (India) is currently being conducted in 8 different languages in addition to Hindi and English. But once the students gain admission to a medical course, the medium of studies is purely English and thus problematic for some students. Some students also

mentioned in their comments that MCQ based tests would decrease mugging up theory from books and notes while some mentioned that MCQs might help them prepare for their post-graduate entrance tests as well. Some students highlighted that MCQ based tests can cover more number of topics and test the deeper understanding of the concepts which is a major limitation of the subjective type tests. This has also been found in a study by Palmer EJ and Devitt PG.^[7] Dissatisfied with their current pattern of exams, the 1st semester students have requested us to change their test format to predominantly MCQ based.

However, our perspective is that the first semester students are habituated to solve MCQ based tests during their preparation for pre-medical entrance examinations. A sudden change in the exam pattern in medical colleges which is mainly objective/subjective and viva type tests makes them uncomfortable with an added stress of securing minimum internal assessment marks. Theoretical written assessment test have some undesirable effects like cramming for examinations^[8] and acquiring superficial knowledge rather than understanding the concept in depth. Moreover, the scheme for awarding assessment marks to students based upon written examination is not standardized yet. It is undoubtedly subjected to the examiners bias (subjective scoring).^[9] Multiple-choice questions have their own advantages like they can cover a large number of examination questions, administered in lesser time and be evaluated by a computer system. These factors make the administration of MCQ based examination to a large numbers of students in an easy and standardized way. The examiners mood, personal bias or favouritism for a particular student does get eliminated as well in an MCQ based test. Moreover, it happens many times while solving a multiple-choice question that a student answers a question correctly by recognizing the correct option though he may not truly know the correct answer. However, the student would not have been able to answer the question correctly in the absence of the given distractors (options) in the question. This is called cueing effect.^[10] Though students can sometimes perform better because of the cueing effect but it can be taken care of by designing the MCQs meticulously. A study in literature has shown that, performance of first year medical students was better in an MCQ based test format vs. long essay type questions (traditional format).^[11] Another study showed that, the students performed better in MCQ tests than in the short essay questions (SEQs).^[12] Therefore, we as facilitators of education can consider inclusion of MCQs in their tests to enable students secure better marks for internal assessment to be eligible to write their 1st professional examination.

On analysing results of the feedback forms for monthly test format, it was further found the percentage of second semester students in favour of MCQ based tests was almost same as for combination of tests. This is probably because students of second semester have got used to the

medical curriculum with passage of time. The comments of the students in the feedback form mention that a combination of tests would be better to test the knowledge in depth from various aspects of the topic rather than recall of knowledge. Viva-voce tests provoke students to read a topic in depth in order to answer the questions picked up from any portion of the topic. During viva-voce exam, the examiners tend to alter the difficulty level of the questions from student to student as per the student's capability. At times it is observed that the examiner ask viva questions from the topics that are more important or a student is comfortable with considering the fact that students cannot perform their best in all the exams at all times. Thus, in viva voce questions, an average student also has a good chance of passing the exams. But viva exams are subjected to personal bias too. Some students feel objective based questions in the form of reasoning and assertion evokes the thinking process and hence might test the students' knowledge better. Reasoning provokes critical thinking has been proven in literature.^[13] The other kind of objective questions the students wanted are 'fill in the blank' and 'match the following' type questions. These questions can help the students score better who are poor at solving MCQs and writing subjective essay type questions. Thus, amongst the second semester students, we found that mixed type of response was received with regards to type of tests the students wanted for their monthly tests.

On analysing the data in Table 3 regarding their annual examination, it was found that majority of the first semester students wanted MCQ based tests. The probable reasons for such preference have been discussed above. However, the response of the second semester students clearly shows that majority of students would like to have 'combination of tests'.

It is known that assessment drives the learning process however, assessment can have both desirable and undesirable consequences.^[14] Every test format has its own advantages and disadvantages. Infact, students have a tendency to study more thoughtfully when they anticipate certain examination formats and therefore changes in the format can shift their focus to clinical rather than theoretical issues.^[15] Therefore, we suggest that a combination of tests would be a more rational approach in assessing the competency of medical students.^[16]

From the results of the feedback analysis and our understanding of the students' comments, we think that it will be a rational approach to include MCQs in the monthly tests with more weightage of marks being given to MCQs over other type of questions as it can help students score better and maintain good internal assessment marks. The annual theory examination shall be a combination of various types of tests like MCQ, viva-voce, objective and subjective questions with almost same weightage of marks being given to all types

of questions. Since, students are habituated to solve MCQs at the time of seeking admission to medical course. A gradual shift towards combination of tests would be more rational. Annual examination is a very important examination that decides whether a student will be promoted to the second professional year or not. Also keeping in mind that all students cannot be best at any one particular type of test format, some are good at solving MCQs while some are good in answering subjective type questions. Therefore, a combination of tests in their annual exams will be a better option to help all students in overcoming their weaker aspects and yet perform their best. A study in literature by Wilkinson TJ and Frampton CM have also shown that students score maximum when combination of tests are used.^[17]

In fact in a medical school of New Zealand, the examination conducted for undergraduate medical students was changed from one that consisted entirely of written essay-type questions to one that included OSCE.^[18]

Such attempts to change the existing assessment methods have remain hindered by financial constraints, institutional policies and lack of expertise in designing new formats of examination. But there is compulsive need to improve the quality of our assessment methodology because if the assessment methods measure low cognitive level then it will decrease the validity of the exam and compel students to adopt surface learning approaches which is not desired to promote lifelong learning.^[19] Students' are inclined to imbibe a surface approach when assessment emphasis is on recall of factual knowledge whereas students are more likely to adopt a deep approach if assessment demands higher levels of cognitive abilities. In our medical college, we too are in the process of including MCQs, Spotting, OSPE (Objective structured performance evaluation) etc after the administrative approval.

CONCLUSION

The content and format of assessment of medical education program should follow specific goals. The various domains of competence should be assessed in an integrated, coherent, and longitudinal fashion. Educators should consider factors like the impact of assessment on learning, the potential unintended effects of assessment, the limitations of new methods and the prevailing method of assessment. Considering the results of feedback obtained from the students, we recommend inclusion of MCQs in the monthly tests with more weightage of marks being given to MCQs over other type of questions whereas annual examination shall be a combination of various type of tests like MCQ, viva-voce, objective and subjective questions with almost same weightage of marks being given to all types of questions for evaluating the competency of the students in the best possible way.

ACKNOWLEDGEMENT

We thank the medical students who participated in the study.

FUNDING SOURCE

The study didn't require any funding.

CONFLICT OF INTEREST

None declared.

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