

PERCEPTION OF UNDERGRADUATE MEDICAL STUDENTS ABOUT DIFFERENT FORMATS OF ASSESSMENT IN SUBJECT OF PATHOLOGY

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Abstract:

Objective: To explore students' perspective on different methods of assessment in the subject of pathology at Central Park Medical College Lahore.

Background: In medical education, assessment is entering every phase of professional development. In Pakistan, medical undergraduates are assessed by four methods; MCQs, SEQs, Viva voce and OSPE. All of these methods help to assess the clinical knowledge and cognitive skills of the medical professionals.

Materials and methods: This study was conducted among third year (n=105) and fourth year(n=114) undergraduate medical students of Central Park Medical College. A questionnaire was distributed among the participants to find out the most preferred method of assessment in the subject of Pathology. The students were explained about the aim of study and 15 minutes were given to fill the questionnaire. The responses were analyzed by using percentages.

Results: This study revealed that according to participants, the most useful tool of assessment during a class test of Pathology is MCQs (54.3%) followed by SEQs (36.9%). Viva voce and OSPE were not preferred to a greater extent during a pathology class test (14% and 5% respectively), statistical difference between all four perceptions about tools proved to be significant as $p < 0.0001$. For University examination in the subject of Pathology, the least useful method of assessment according to participants is OSPE (52.3%). The second least beneficial option for a Pathology Annual University examination selected by the students was Viva Voce (24.4%) followed by SEQs and MCQs (14.2% and 9.1% respectively), statistical difference between all four perceptions about tools proved to be significant as $p < 0.0001$.

Conclusion: The findings of this study revealed that according to undergraduate students of Central Park Medical College, MCQs during a pathology class test can assess their knowledge in a better way as compared to other tools of assessment. On the other hand the students who have passed the university examination of pathology selected OSPE as the least useful tool of assessment during annual professional examination.

Key words: Assessment methods, medical education, university examinations, learning, cognitive skills,

INTRODUCTION:

Assessment and teaching methodologies are progressing day by day in order to achieve the intended goal.¹ Pakistan Medical and Dental Council (PMDC) has taken diverse steps to modify the medical curriculum to make it more consistent with that of international medical education standards.¹ Over the past many years, medical universities and post graduate training programs in Pakistan have made considerable

efforts to provide reliable, accurate and timely assessments of undergraduate medical students, post graduate trainees and practicing physicians. Researchers agree that reviewing the learning and assessment

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methods at regular intervals is mandatory so that policies can be modified to improve the medical education. Various tools such as student feedback help the faculty to have a detailed overview on the weaknesses and strengths of their teaching and effectiveness of the assessment methods.²In addition to this, feedback given by the students is considered to be the best and inexpensive way to bridge the communication gap between instructors and students and improve medical education techniques.³

Assessment is an essential component of the learning process in medical education. Students perceive assessment as an important motivating factor to drive their learning.⁴ The approach of students toward learning process is determined by the method of assessment selected by the health education professionals.⁵

The domains of assessment include testing cognitive skills, analyzing performances and assessment of attitudes.⁶ Assessment of cognitive skills include written tests like Multiple choice questions (MCQs) and Short essay questions (SEQs).⁶

Students mostly undertake a superficial approach when the focus of examination is on recalling of facts and figures whereas they are more likely to adopt a deeper approach when the assessment comprises of testing cognitive abilities.⁷ Students tend to learn mainly the material on which they are to be assessed.⁸ Studies show that the style of assessment which is adopted by the exam conducting bodies can influence student's choice of learning approaches in medical education.⁸

Multiple choice questions, short essay questions, Objective Structured Practical Examination and viva voce are the most common tools of assessment used in undergraduate medical education in Pakistan.⁵ MCQs are the most frequently used assessment method and are suitable for assessing detailed knowledge of the students.⁹ Moreover, MCQs are highly reliable, valid and easy to score.¹⁰ MCQs have a brainstorming effect and promote guessing which help the students to get a high score in examination.¹¹ In contrast to MCQs which have a cueing effect, essay type questions not only allow the students to recall the factual

knowledge but also allow them to use higher cognitive skills.¹² Short essay questions although time consuming, are relatively more subjective and can effectively assess problem solving skills of the students.¹³

In CPMC, student feedback is conveyed to the teachers in various meetings and discussion. However, a large-scale survey has never been conducted at our institution to obtain a feedback of students about the pattern of assessment in central park medical college. The objective of the present study was to obtain student feedback on assessment methodologies in subject of pathology at CPMC.

MATERIALS AND METHODS:

It was a cross-sectional study conducted on 3rd and 4th year MBBS students at Central Park Medical College Lahore. A total of 219 undergraduate medical students of third year (n=105) and fourth year (n=114) were given the questionnaire. 112 of the participants were female and 107 were male.

In Central Park Medical College the internal assessment of Pathology is conducted through monthly tests, OSPE and midterm examinations. Monthly tests are carried out every month comprising of MCQs, SEQs and a structured viva voce. Midterm examination consists of 65 MCQs, 14 SEQs, OSPE and a structured Viva voce. The internal assessment of the students is calculated as a cumulative percentage of all the test scores and midterm examination. The examination pattern of UHS comprises of 65 MCQs, 14 SEQs, OSPE and viva voce taken by external and internal examiners.

This study was aimed at finding out the perceptions of third year and fourth year students of Central Park Medical College about the pattern of assessment in subject of pathology. For this purpose a feedback performa was distributed among undergraduate medical students of 3rd and 4th year after a class test. The Performa specifically comprised of the questions regarding different modalities of assessment in the subject of pathology. It included statements about the most useful and least useful method of assessment in subject of pathology during class test and UHS

examination. The purpose and aim of this study was explained to participants. An informed consent was sought from the participants after a re-assurance that the data gathered by participants will remain confidential and the information will not be shared with any administrative authority of CPMC. This study was approved by the ethical review committee of Central park Medical College. The participants were given 15 minutes to fill the feedback after a class test.

Statistical analysis was done using IBM-SPSS v-21. Categorical variables were expressed in the form of frequencies and Chi-square was used to test the goodness of fit of data. A *P* value less than 0.05 was taken as statistical significance.

RESULTS:

The data was gathered and analyzed using percentages of the responses to find out the students perception and preferences about different modalities of assessment.

Table1: Most useful tool of assessment during a class test examination in subject of pathology.

Assessment tool	Responses	Total number of students	<i>P</i> Value
MCQs	54.3%	119	< 0.0001
SEQs	36.9%	81	
Viva voce	6.3%	14	
OSPE	2.2%	5	

Statistical difference between all four perceptions about tools proved to be significant as $p < 0.0001$.

Table 2: Least useful tool of assessment during a University of Health sciences examination in subject of pathology (according to students who have passed the university exam of pathology).

Assessment tool	Responses	Total number of students	<i>P</i> Value
MCQs	9.1%	20	< 0.0001
SEQs	14.2%	31	
Viva voce	24.4%	54	
OSPE	52.3%	114	

Statistical difference between all four perceptions about tools proved to be significant as $p < 0.0001$.

Table1: Most useful tool of assessment during a class test examination in subject of pathology.

Assessment tool	Responses	Total number of students
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Table2: Least useful tool of assessment during a University of Health sciences examination in subject of pathology (according to students who have passed the university exam of pathology).

Assessment tool	Responses	Total number of students
MCQs	9.1%	20
SEQs	14.2%	31
Viva voce	24.4%	54
OSPE	52.3%	114

DISCUSSIONS:

To understand the factors which drive the learning process and its outcomes, it is necessary to investigate the students' preferred mode of assessment. Previous studies indicate that differences in students' assessment preferences lead to differences in their academic performances.¹⁴ The style of assessment which students prefer, actually depict their preferred learning environment and their approach toward learning process which in turn affects their academic achievements.^{15,16} In medical education, it is very important to find out the students preferred method of assessment in order to help students score high in their professional examination. Many studies have been conducted to find out preferences of students in higher education but there is a lack of

research work related to investigate assessment preferences of medical students.^{15,16} This study was designed to find out the most favored method of assessment among undergraduate medical students of Central Park Medical College which in turn can help the students perform better in their university examinations.

In the current study it was found that students preferred MCQs (n=119) as the most useful tool of assessment during a class test of pathology followed by SEQs (n=81), whereas viva voce (n=14) and OSPE (n=5) were preferred least. This is in close agreement with the study conducted by Sharma and Mutalik in India who compared students' scores of MCQ and SEQ in an otorhinolaryngology examination and found that students scored higher in MCQs.¹⁷ In another study conducted on medical students at King Faisal University Saudi Arabia it was found that MCQ format was the most favored type of assessment.⁸ In a study conducted on 2nd year to final year MBBS students in Riphah International University Islamabad it was revealed that 90 % of the students are contended with MCQ format during assessment.¹⁸ In a study conducted by Ibrahim et al in 2015 it was found that medical students preferred MCQs for written assessment.¹⁹ Many studies have shown that students perform better in MCQ based assessment as compared to other methods. Pepple et al revealed in their study that during an institutional examination MBBS students performed better in MCQ than in the essay questions.¹²

Our study also reveals that according to the fourth year under graduate medical students who have passed the university exam for pathology, the least useful assessment tool in UHS pathology exam is OSPE. In contrast to our findings, a study conducted on BDS students of UHS showed that viva voce was the least preferred method of assessment as the students are in anxiety during examination and they fear to face the

examiner. However in the same study, OSPE was the best choice of assessment for BDS students which does not coincide with the findings in our study where MCQs are the most favored assessment tool.²⁰ Rafique and his coworker reported in their study that majority of the medical undergraduate students preferred SEQs as the best form of assessment which is contrary to the findings in our study.¹

In our study, undergraduate medical students have preferred MCQs for a class test of pathology over other methods of assessment. Also, only a minority (n=20) of participants think that MCQs are least useful tool in a university examination. Multiple choice questions can assess many study areas in a relatively short time having high reliability and can be graded with the help of computer. However, MCQs are difficult to write for examiners and can result in signaling towards the best answer.²¹

The second best option chosen by the participants for assessment in the subject of pathology is short essay questions (n=81). SEQs avoid cueing and have the ability to interpret diagnostic approach along with problem solving skills of the students. On the other hand, SEQs are time consuming to grade and their reliability depends upon the teaching skills of the instructors.²¹

The least preferred methods of assessment in Pathology chosen by the third and fourth year medical students are viva voce (n=14) and OSPE (n=5). Viva voce is often subjective, time consuming, require proper training of the examiners taking viva and has been reported to be gender and race biased. The current study shows that the students who have passed the UHS examination for Pathology stated OSPE as the least useful tool to assess them during a University examination. The time duration on each station of OSPE and setting may seem artificial and uncomfortable to the students which can affect their performance in university examination.²¹

It is a stated fact that assessment drives learning, however, assessment can have both negative and positive outcomes.²² The negative outcomes of assessment include the tendency for medical undergraduate to substitute superficial knowledge for deeper conceptual learning. To help the students to think critically and to develop their skills of making analysis and inferences, a change in the assessment culture and practice is required.²³ In this innovative era of health care system, the demand for change in learning and assessment practices has critically increased.²⁴ Therefore, some proper steps should be taken to fulfill this demand and subsequently help the medical students.

CONCLUSION:

From this study we can conclude that according to undergraduate medical students of Central Park Medical College the most useful assessment tool in subject of pathology is MCQs whereas the least useful assessment tool is OSPE. All of the assessment tools have their own advantages and flaws. The use of student feedback and advanced assessment techniques can help the health education professionals to overcome the flaws in any one method.

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CONFLICT OF INTEREST:

The authors have no financial relationship with any organization. The authors have no conflict of interest in the subject matter or materials discussed in this manuscript.

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