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RESEARCH ARTICLE

Evaluation of summative assessment pattern for undergraduate pharmacology practical examination

Bharat Gajjar

Department of Pharmacology, Pramukhswami Medical College, Karamsad, Gujarat, India

Correspondence to: Bharat Gajjar, E-mail: gajjarbm@yahoo.com

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ABSTRACT

Background: The Medical Council of India (MCI) has stated the minimum standards in its regulations for the quality of Medical Education in India. It is observed that assessment of medical students, though an important aspect, does not follow in a uniform way by all medical colleges. **Aim and Objective:** To evaluate and compare summative assessment pattern for undergraduate pharmacology practical examination in all medical colleges of Gujarat state. **Materials and Methods:** This was a cross-sectional observational study. The heads of pharmacology departments of one medical college from each university of Gujarat state were sent by e-mail, a "Letter of intent" and their summative assessment pattern for undergraduate pharmacology practical examination was gathered. Data collected were evaluated and compared in the terms of contents (different practical modules with weight age of marks) and mode of assessment. **Results:** The data were discrete in nature, showing no uniformity. All the university conducts a practical examination of total 40 marks. The majority of the universities conducts theory viva of 15 marks and different practical exercises of 25 marks. The majority of universities takes two table viva of 15 marks each and then makes an average for viva. All the universities include prescription related exercises in the practical examination of 10 marks, but pattern of conduction is different. All universities had a different distribution of other exercises such as experimental pharmacology, adverse drug reaction reporting, P drug concept, spotting, and journal writing. **Conclusion:** Although the pattern of pharmacology practical examination in the universities of Gujarat State serves the objectives laid down in the MCI regulations; there is a wide range of variation in exercises and their marks. There is a need for making a common pattern, which can be implemented for uniform assessment throughout the state.

KEY WORDS: Summative Assessment; Pharmacology Practical Examination; Undergraduate Teaching

INTRODUCTION

According to Medical Council of India (MCI) Regulations (1997),[1] the broad goal of the teaching of undergraduate students in pharmacology is to inculcate a rational and scientific basis of therapeutics. For practical, the following skills are recommended. At the end of the course, the student should be able to: (1) Prescribe drugs for common ailments, (2) recognize adverse reactions and interactions of commonly used drugs, (3) observe experiments designed for the study of effects of drugs, bioassay, and interpretation of the experimental data, and (4) scan information on common pharmaceutical preparations and critically evaluate drug formulations.

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Educational assessment is the process of documenting, usually in measurable terms of knowledge, skill, attitudes, and beliefs. Assessment can focus on the individual learner,

the learning community (class, workshop, or other organized group of learners), the institution, or the educational system as a whole (also known as granularity).[2]

Summative assessment is generally carried out at the end of a course or project. In an educational setting, summative assessments are typically used to assign students a course grade. Summative assessments are evaluative.[2]

It is said that "Assessment drives learning". Although multifactorial and complex in nature, medical students' self-reported drive to study a subject is directly influenced by the weighting of the subject in the overall scheme of assessment.[3]

The summative assessment is carried out by the concerned universities. External examiners are appointed (not less than 50%) to conduct the examination.[1] It is necessary that the pattern of the practical examination should be uniform, in terms of exercises and their weightage, for uniform and fair assessment of students all over. This, in turn, will reflect in the uniform quality of students passed out. The society would also be benefited with the quality standard medical care.

However, it is observed that the summative assessment pattern is not uniform in all medical colleges. Therefore, this study was designed to evaluate and compare summative assessment pattern for undergraduate pharmacology practical examination in all medical colleges of Gujarat State.

MATERIALS AND METHODS

This project was of cross-sectional observational and analytical type. The project is approved by the institutional Human Research Ethics Committee (HREC) (Approval letter no: HMPCMCE/HREC/ER/2014/25, dated 6th October 2014).

Study Procedure

All the medical colleges of the Gujarat State were involved in the study. The heads of pharmacology departments of one medical college from each university of Gujarat State were sent by e-mail, a "Letter of intent". They were requested to provide with their summative assessment pattern for undergraduate pharmacology practical examination. They all were assured that the name of the college or university will not be disclosed at any stage of the conduction of the study.

Data gathered regarding examination patterns were evaluated and compared with each other, in the terms of contents (different practical modules with weight age of marks) and mode of assessment.

RESULTS

Letter of intent was sent to nine colleges, one college from each of nine universities of Gujarat. Out of these 9, 7 ($n = 7$) had responded by providing the information asked.

Total Marks

All the university in Gujarat conducts a practical examination of total 40 marks. Only in one university, exam is conducted for 50 marks, and then it is converted to 40 marks.

Broad Division of Viva and Practical Exercises

The majority of the universities conducts theory viva of 15 marks and different practical exercises of 25 marks leading to total 40 marks. In one university, it is as 14 and 26 marks, respectively. In another university, it is as 20 and 30 marks, respectively, and while conversion of these marks to total 40, viva weightage comes down to 16.

Evaluation of Viva Pattern

Different types of viva conduction patterns have been shown in Table 1. Majority of universities takes two table viva of 15 marks each and then makes an average marks for viva.

Evaluation of Different Practical Exercises

Prescription related exercises

All the universities include prescription writing, problem-solving exercise, and prescription audit (Criticism) exercises in the practical examination of 10 marks. Different prescription related exercises and its distribution has been shown in Table 2. Usually, all these exercises are taken as written exam only in all universities. One university conduct viva on these written exercises.

Other exercises

Distribution of another exercise such as experimental pharmacology, adverse drug reaction reporting, P drug has been shown in Table 3 with their marks range.

Spotting exercise

Out of seven universities, only four universities had this exercise. Out these four, three universities assigns 5 marks for spotting, and one university assigns 10 marks for spotting exercise.

Journal/Practical Book Marks

Out of seven universities, only one university assigns four marks for journal writing.

Table 1: Viva pattern in different universities of Gujarat state

Viva pattern	Two tables each of 15 marks, then making average	Two tables each of 7 marks. Total-14	Two tables each of 10 marks, Total-20 weightage-16
Number of university	5	1	1

Table 2: Distribution of prescription-related exercises in different universities

Parameters	Single prescription	Prescription writing major/minor	PSE	PA/criticism
Number of university	6	1	1	7
Marks range	2-5	1+4	4	4-6

PSE: Problem solving exercise; PA: Prescription audit

Table 3: Distribution of table work exercises in different universities.

Parameters	Number of university	Marks range
Graphs/experimental pharmacology questions	3	3-6
PV/ADR	2	2-3
LA/PDL	1	2
ADR/PV or LA/PDL	1	4
Clinical pharmacy exercise	5	5-10
FDC	1	3
LA/P-drug/FDC/PV/Dose calculation (any one)	2	10

PV: Pharmacovigilance, ADR: Adverse drug reaction,
LA: Literature audit, PDL: Promotional drug literature, FDC: Fixed dose combinations

DISCUSSION

The practical examination in the subject of pharmacology for undergraduate medical students is conducted through various exercises to assess different skills. These skills are required to practice medicine after graduation, independently. Good prescribing skills are very important for rational and scientific care of patients. ADR monitoring is important for patient safety.

Assessment drives learning. These skills need to be assessed in the summative assessment to ensure that students have acquired them completely and efficiently.

It is observed that the assessment pattern is not uniform, in terms of the exercises and their marks weightage, in different universities and thereby in different colleges. The quality of the students, passed out from different colleges is varied. Exit examination is being planned for medical graduates for "eligibility to practice" in the society. This can be one of the solutions for making uniformity, but again it is overall, covering all the subjects and limited to the theoretical knowledge.

The summative practical examination is conducted by the university, to which the particular college is affiliated. About 50% of examiners are invited as "external examiners" from other universities. These external examiners are usually not aware regarding the examination pattern of the college. This creates "assessment bias" between the internal and external examiners. Students may not be assessed appropriately. This creates a strong need of developing and implementing uniform pattern for the practical pharmacology examination. The limitation of the study is the heads of pharmacology departments of two medical colleges had not provided the required information. But probably, this limitation has not affected the conclusion of the study.

CONCLUSION

Although the pattern of pharmacology practical examination in the universities of Gujarat State serves the objectives laid down in the MCI regulations, there is a wide range of variation in the exercises and their weightage. There is a need for making a common pattern, which can be implemented for uniform assessment throughout the state.

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