



STUDENTS' FEEDBACK ON THE CURRENT TEACHING METHODS IN PHARMACOLOGY AND SUGGESTIONS RECOMMENDED

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Article Received on 10/08/2021

Article Revised on 31/08/2021

Article Accepted on 21/09/2021

ABSTRACT

Objective: To elicit the opinion of students regarding the current teaching methodologies and inviting suggestions, and to compare how the thinking has changed over the last 15 years in pharmacology teaching methods. **Material & Methods:** A questionnaire was designed and assigned to second year medical students who were due to appear for their final examination. The students were asked to tick the option (s) which they felt was or were appropriate and were allowed to offer their own suggestions in some questions. **Results:** One hundred and forty students participated in this questionnaire based study. Ninety six (68.5%) students wanted case based approaches and treatment to be added as a part of regular teaching. About 59% students wanted the teachers to introduce problem based learning/ case based approach methods in teaching program and almost half the students wanted the teacher to discuss MCQs after every lecture. One third (32.8%) students opined that seminars were not interesting and similar number thought that they are of no use in future. Ninety four students believed that pharmacologists can become rational practitioners in the future. **Conclusion:** This study reflects the mind-sets of students' regarding the current pharmacology teaching methods and the results of this study urge to introspect and improve the methods of teaching to inculcate more students' interest and better understanding of the subject for safe and rational medical practice in the near future.

KEYWORDS: pharmacology, case-based study, problem based learning.

INTRODUCTION

Pharmacology is one of the most important subjects in medical curriculum which is progressing rapidly by fast pace. Consequently newer methods are being used at various colleges to teach pharmacology, each having pros and cons.^[1] It takes years to master a new teaching method after due test time. The important objective of pharmacology teaching is to provide information regarding rational therapeutics for easier decision making in medical practice.^[2]

Many reforms have been made in the existing teaching modalities to make pharmacology more interesting. Most of the universities now recommend more short answer questions and therapeutic problems. Clinical vignettes are being discussed to make the subject more clinical-oriented and practical.

Questionnaire based studies are useful in reading the minds of students and can reveal a lot of information and suggestions. We at Goa Medical College had conducted a study on students' opinion on the prevailing teaching methods in pharmacology 15 years back in 2004.^[3]

Current students differ in their ways and approach and they often decry the way pharmacology is taught and assessed. Reforms in the teaching of the subject are the need of the hour. Hence we thought of eliciting the opinion of students regarding the current ways of teaching and inviting suggestions, and to compare how the thinking has changed over the last 15 years as far as the pharmacology teaching is concerned.

MATERIALS AND METHODS

An anonymous questionnaire based study was conducted in the fifth semester medical students who were due to appear for their IInd MBBS examination, after obtaining approval from the Institutional Ethics Committee. The questionnaire comprised 25 items (appendix I), with each question having a range of 2-8 options. The students who participated in the study were asked to tick the option (s) which they felt was or were appropriate for the particular question. There were few questions in which the students were allowed to offer their own suggestions in addition to the available options. The completed questionnaires were collected and analysed for their opinions regarding

the prevailing teaching methods in pharmacology subject and further changes recommended or opined.

The results of this present study were compared with a similar questionnaire based study that was conducted 15 years back in similar group of medical students (IInd MBBS 2004 batch) in pharmacology department of our institution. The questionnaire items as mentioned earlier were similar to the original questionnaire study (which consisted of 23 items) done in 2004, except that a few new questions (as in question no. 25: Do you believe pharmacologists can become rational practitioners) were added and options for some of the questions were either included (as in option (f) for question no.8 :Use of power point presentations) or excluded (Use of OHP), which were either relevant or irrelevant respectively to the current scenario of pharmacology teaching methods.

STATISTICAL ANALYSIS

Data gathered from the questionnaires was analysed and expressed as frequency, percentages and tables wherever applicable.

RESULTS

Few students did not attempt some of the questions, whilst in some questions as expected more than one option was ticked. One hundred and forty students due for IInd MBBS examination participated in the questionnaire based study to determine students' opinion on the trends in pharmacology teaching. About 73.5% (105) students had little knowledge about pharmacology before it was introduced to them in the second year of MBBS course. About 42% (59%) and 35% (49) students gathered seniors' opinion about the subject that, it was very important in medical practice, and also interesting but cramming was needed, respectively. Eighty four (60%) students thought that the subject is important in medical practice and only 39 (27.8%) students felt that it was interesting but a lot of cramming is required.

One third (32.8%) students opined that seminars were not interesting and similar number (31%) thought that they are of no use in the future. One fifth (19.2%) students were of the opinion that experimental pharmacology was not interesting and many (26.4%) thought they are of no use in the future. Tutorials were reported of no use in the future by 17% of the students. Most of the students found gastrointestinal system (59), cardiovascular system (37), and general pharmacology (34) interesting and also most of them agreed that all the topics are useful for future practice.

About 59% (83) students wanted the teachers to introduce problem based learning or case based approach methods in the teaching program and almost half the students wanted the teachers to discuss multiple choice questions after every lecture (45%). Inclusion of more clinical pharmacology (26.4%) as well as more group discussions (20.7%) were the other reforms suggested to be made in the teaching program by students. A large

proportion (68.5%); 96 of students wanted case based approaches and treatment to be added as a part of regular teaching. Fifty (35.4%) students opined that they wanted clinical pharmacology sessions to be introduced as a part of the regular teaching schedule.

Only six (4.2%) students reported that they religiously take down all class notes. While preparing for examinations, 40.7% (57) of the students pointed out that they refer to lecture notes of certain staff members only, irrespective of the topics taken by them. About 52.8% (74) students preferred studying pharmacology from lecture notes and textbooks combined. About 10% (14) students reported that they prefer reading from textbooks only, as they don't take down class notes and on the other hand similar proportion of students preferred referring exclusively to power point presentation lecture notes while studying for pharmacology examinations. Fourteen (10%) students reported that they prefer studying exclusively from textbooks only, as they are more interesting, and understand very little during class lectures.

Almost half the students (47.8%) studied pharmacology only during tutorials /tests/examinations and about 40.7% (57) studied the subject regularly, either because of the interest in the subject (8.5%) or, due to test/ viva/ tutorials (19.2%) or, for gaining more knowledge on the subject (12.8%). Only 8.5% (12) students opined that they shall study only for the final examinations. Eighty six (61.4%) students agreed that their grasping power of the subject was good, 39 (27.8%) said that only cramming helps, whilst 7 (5%) thought they could never learn.

Students' opinion on the quality of pharmacology lectures were as follows.

- More than half the class (105/150) said some lectures are interesting and some boring. About 19 (13.5%) said that most were boring and few interesting.
- Eleven (7.8%) students opined that the lectures were always interesting and only one student was of the opinion that pharmacology lectures are always boring.
- More than 50% students opined that pharmacology lectures should be more clinically oriented and that they would want more case based approaches for common clinical conditions as reforms to be incorporated in the lectures.
- Twenty three students suggested that only important topics should be covered and power point presentations should be made use of during lectures.
- Only 12 (8.5%) students opined that there is no need for any reforms in the present lecture pattern of pharmacology subject.
- About 69 (50%) students rated pharmacology at par with other IInd MBBS subjects and 66 (47%) rated pharmacology subject above other subjects in all aspects.

- Overall, as many as 54.2% rated pharmacology subject at par with MBBS subjects, about 41.4% stated that it was one of the most important subjects in the medical curriculum and only one student was of the opinion that pharmacology was only theoretical, and not much useful in clinical practice.

Students' opinion on whether the subject should be taught in or after IIIrd MBBS are as follows.

- Almost half the students (67) agreed on a few lectures on drug therapy in IIIrd MBBS (final year), 57 (40.7%) wanted to have an orientation course of few days during internship, and 30 (21.4%) students thought only a few lectures on new drugs should be taken in the final year.
- Thirteen (9.2%) students were of the opinion that the subject should be taught for entire IIIrd MBBS and

only 10 students opined that it should be taught only in IInd year of MBBS as it stands now.

- Majority (74.2%) students were satisfied with the present pattern of marks distribution, although 29 (20.7%) said that more marks should be assigned to pharmacology.
- Most of the students felt that special topics like paediatric pharmacology, geriatric pharmacology, drugs in pregnancy & lactation, drugs in liver & kidney dysfunction, drugs in sexual dysfunction, drug schedules, calculations of doses in paediatric & special situations should be discussed separately either in practical/ lecture class.
- Drugs in pregnancy and lactation was the highest reported special topic by 116 (82.8%) students to be discussed separately during lecture/ practical class (Table 1).

Table 1: Students opinion about special topics.

Special topics	Frequency /Proportion of students in favour
Drugs in pregnancy & lactation	82.8% (116)
Paediatric pharmacology	77% (108)
Drugs in liver & kidney dysfunction	75% (105)
Drugs in sexual dysfunction	73.5% (103)
Drug schedules	70.7% (99)
Calculation of doses in paediatric & special situations	70.7% (99)
Geriatric pharmacology	68.5% (96)

The students had diverse opinions regarding the qualities of a good pharmacology teacher. Most of them opined that they should be knowledgeable and able to simplify complicated drug concepts aptly, more clinically oriented, lively and student friendly. More than 50% agreed that most of their teachers have the above mentioned qualities. When asked about how they regard pharmacology teachers as compared to others knowledge wise, 43.5% (61) students said some teachers are more knowledgeable than others.

Student's opinion on whether pharmacologists are respected as expert therapeuticians, for which 35.7% (50) students agreed and 30.7% (43) opined that they ought to be respected. Ninety four (67%) believed that pharmacologists can become rational practitioners. More than half the students (56.4%) did not consider pharmacology as a subject of specialisation after MBBS course and 37.8% considered it as a specialisation branch after MBBS, whilst some of them were still not sure of choice of their subject as post graduate specialisation.

DISCUSSION

Pharmacology is one of the most important subjects in medical curriculum. Studying pharmacology will certainly help the students in rational therapeutic practice as suggested by de Vries et al^[4] and Mohammed et al.^[5]

Questionnaire based studies reveal students mindset as they are free to express their opinions without any hesitation. Our study results are on expected lines. One striking result was the use of seminars. One third opined

that seminars were not interesting and another one third said they are of no use in future. This finding is consistent with other studies^[6] including one conducted by us 15 years back.^[3] This dislike for seminars has not changed over the years. More attempts have to be made to make them interesting and attract students' minds.

Around 68% students wanted clinical based learning. Considering the current scenario, it was expected that more number would opt for this method. This number is less as compared to earlier studies by Manjunath et al (2015)^[7] and Jai Krishna et al (2015)^[8] where 98% and 73% were for case based study learning. In a study by Dawane et al (2014), 80% students demanded for session of clinical pharmacology and case based studies in their curriculum.^[9]

Understandingly, half the class wanted multiple choice questions (MCQs) after every lecture. This must be following the introduction of NEET for postgraduate entrance examination where evaluation is done through MCQs. It is interesting to note that more than half number of students prefer reading the subject from lecture notes and textbooks combined. Only 10% don't take down class notes at all. Although lecturing is one of the most commonly used teaching methods for undergraduates and seems to a significant method to provide information, it does not promote thinking and deep learning.^[10] Many studies have criticised lectureship and have prompted the need to start innovative methods in teaching pharmacology at various colleges.^[11,12]

Pharmacology is a subject which needs application in practice. It has to be properly assimilated in the minds of students. It is disheartening to note that almost half the students read it only during tutorials or tests, and only 40% studied the subject out of interest. This concept should change and the students ought to read the subject regularly to perfectly understand the intricacies, so that they apply it rationally during medical practice in future.

It is satisfying to note that most of the students showed interest in learning special practical topics like paediatric pharmacology, geriatric pharmacology, drugs in pregnancy & lactation, drugs in liver & kidney dysfunction, drugs in sexual dysfunction, drug schedules, and calculation of doses in paediatric and special situations. They want them to be discussed separately as practicals or lectures. This point should be given a thought and more focus should be given in teaching these practically oriented topics more efficiently.

Our current study results were compared to the results of a similar study conducted by our department 15 years back in 2004. General trends were similar in both studies. Interestingly in 2004, a whopping 89% said they take down all notes. In comparison, in the current study only 4.2% showed interest in taking down all notes. This shows the lack of interest in classroom teaching by the current generation who prefer more short discussions or case based approaches which would discuss more practical aspects of pharmacology. The earlier students were interested in clinically oriented lectures, an option which reflects in the current study. Only 51% opined for clinically oriented lectures as compared to 81% in 2004.^[3]

Pharmacology teachers ought to be well versed and interested in the subject to make the subject more interesting. Most of the students opined that they should be knowledgeable and able to explain the concepts clearly. More than 50% students opined that most of their teachers had the qualities.

The medical council of India has now instituted competency based training program in all subjects. It is the right time for all of us to incorporate clinically oriented objectives and introduce more problems based and case based learning to orient the students to the rigors of clinical practice.

A study conducted by Jayakaran et al^[13] in 2010 involving interns has meritorious interns' interest in introduction of bedside training of clinical pharmacology during internship, which is also supported by studies by Kela and Mehta (1993)^[14] and Han and Maxwell (2006).^[15] Although this seems a good idea, it may not be possible to put it in practice as interns are posted in various departments on rotation.

It has been observed that the traditional pharmacology teaching apparently is not able to inculcate interest in the minds of students of present generation and new teaching

methods have to be evolved to generate interest and facilitate understanding of the subject.^[16] Dawane et al (2014) conducted a comparative study of different teaching methods to teach cardiac pharmacology and order of preferred teaching method was tutorials > lectures > case study > seminars.^[9]

Our study reflects the mindset of students regarding current pharmacology teaching. It is the need of the hour to introspect and improve the methods of teaching for generating more students' interest, and better understanding of the subject for rational medical practice in future.

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