

## Second year student's feedback on teaching methodology and evaluation methods in Pharmacology

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### Abstract

**Objective-** To get feedback from second MBBS medical students regarding teaching methodology and evaluation methods in Pharmacology.

**Materials and Methods-** 107 second MBBS medical students selected randomly from all the second MBBS medical students who were studying at government medical college, Surat. They were approached with a prevalidated questionnaire containing 25 questions. Suggestions were also asked regarding the quality of good pharmacology teachers and modification in pharmacology teaching methods.

**Statistics-** Descriptive statistics was used and results were expressed as percentage.

**Results-** Most of the students mentioned CVS(22.55%) as most interesting topic in pharmacology. 54.72% students mentioned interactive classes with strict bilateral communication as most interesting method of teaching pharmacology. Most of the students (42.53%) favoured case study and treatment discussion. 37.36% students mentioned they study pharmacology because of regular tests and vivas. Students found tutorials, problem based learning and MCQ pattern of evaluation method is more useful than terminal and prelim exam for preparing university exams. Students found prescription writing and criticism of prescription more useful and interesting practical in pharmacology.

**Conclusion-** There is a need of more clinical orientation to the pharmacology teaching at undergraduate level.

KEY WORDS- Pharmacology, Feedback, Teaching methodology

## **Introduction**

Pharmacology, like other branches of medical science is ever-changing medical subject. Not only the concepts but teaching methodologies are also keeps on innovating. It is accepted that reviewing the teaching and evaluation methods by feedback from students and modification of methodologies accordingly is very important for the undergraduate medical teaching.<sup>[1,2]</sup>

Since quite some time we are following the modified teaching (TAL- Teacher assisted learning) programme which is also followed at other medical colleges with or without some modifications.<sup>[3,4]</sup> With a view to improvise we have decided to get the feedback of our teaching methodology and evaluation pattern. Few studies are conducted in Indian setting related to the feedback of teaching methodologies and evaluation methods from second year medical students <sup>[5]</sup>, we have designed this study to get feedback regarding teaching methods and evaluation methods in pharmacology subject from second MBBS medical students in Govt. Medical College, Surat.

## **Materials and Methods**

After obtaining the permission from the institutional ethics committee, investigator obtained list of all second MBBS students who were studying at government medical college, Surat. All students were approached from that 107 students turned up with form. Individual students were approached by one of the investigators with the questionnaire which contained 25 questions each question has 3 to 9 options. Suggestions were asked about the qualities of good pharmacology teacher, modification in pharmacology teaching methodology and scope of pharmacology. Questionnaire was based on previous study undertaken for undergraduate medical students <sup>[5]</sup> were suitably modified for the students. This questionnaire was validated by a pilot study done on 15 students.

## **Statistics**

Descriptive statistics was used for analysis of data. Frequency was shown as percentage.

## **Results**

Most of the students were having some information about the pharmacology subject before entering the second year (62.26%). 17.92% students were having no idea of pharmacology subject and 19.81% were knowing many things in pharmacology subject before entering in second year. When asked about opinion of their seniors about the pharmacology subject, 52.52% students mentioned that it is "very useful, practically important and interesting". 25.25% students mentioned that pharmacology subject is "useful and interesting". 21.21% mentioned "useful but boring" and 1.01% mentioned "interesting but useless". When asked about their opinion about pharmacology subject, 72.38% mentioned that it is "very useful, practically important and interesting" 19.02% believe that pharmacology subject is "useful and interesting". 3.80% mentioned "useful but boring" and 0.90% mentioned "boring and useless". Most of the students found CVS (22.55%) and ANS (18.51%) most interesting topic in pharmacology. Other student mentioned respiratory system (11.44%), CNS (10.77%), GIT (10.43%), GP (9.09%), endocrine (7.07%), chemotherapy (5.05%) and autocooids (3.37%) as most interesting topic in pharmacology. 16.31% students mentioned CVS, 14.45% mentioned ANS and respiratory system, 13.51% mentioned GIT, 11.42% mentioned General pharmacology, 8.39% chemotherapy, 6.29% autocooids and 5.82% mentioned endocrine as the most useful topic during clinical practice.

Most common sequence of topics according to interest of student in pharmacology is CVS, ANS, respiratory system, GIT, endocrine, autocooids, CNS, chemotherapy and general pharmacology.

Most of the students (54.72%) found interactive classes based on strict bilateral communication as most interesting method of teaching pharmacology. 11.32% students found student's seminar, 9.43% mentioned audiovisual aided lecture, 7.54% lectures in batches and demonstrations/ tutorials and 5.66% likes clinical pharmacology most interesting method of teaching pharmacology subject. Only 3.77% found whole class lecture as interesting method of teaching.

Most common sequence of choice/interest/usefulness of teaching method in pharmacology is interactive classes with strict bilateral communication, demonstration/tutorials, audiovisual aided lecture, clinical (patient related) pharmacology, MCQ based study, student seminars, lecture in whole class and lecture in batches.

Majority of students (42.53%) mentioned that case study and treatment discussion should be included in regular teaching to make it more interesting and useful. 25.37% mentioned quiz, 14.18% mentioned group discussion and 12.68% students mentioned student's seminar as a part of their regular teaching to make it more interesting and useful. As much as 32.26% students mentioned that they preferred studying pharmacology in second year by text books, 4.83% by self prepared notes, 1.31% by teacher's notes and majority 61.29% by combination of all. As much as 37.36% mentioned that they study pharmacology regularly because tests/viva and interactive classes. 32.97% mentioned that they study pharmacology regularly for gaining more knowledge. 20.89% because interest in the subject, 7.69% only during test and exams and 1.1% shall study only in final exam. 51.65% students mentioned they learn pharmacology by grasping the thing/ cramming/mugging/ understanding. 41.75% students mentioned that they learn the pharmacology by understanding the subject. 5.49% mentioned that their method of learning the pharmacology was grasping the thing and 1.1% thinks they never learn. 52.17% students favored the discussion of topics like drugs used in special conditions like liver/kidney dysfunctions, sexual dysfunctions, emergency drugs etc in lectures/practicals of pharmacology. 19.56% wants drug

administration procedure, 17.39% wants to learn drug schedule and calculations, 8.69% rationality and 2.17% students want pediatric pharmacology should be discussed in lectures and practicals. 49% students rated pharmacology teaching above all in all second year subjects. 32% rated pharmacology as average and same as others. Not a single student mentioned pharmacology as useless and unimportant subject. Most of the students mentioned that pharmacology subject should be taught also in or after III MBBS, out of these 25% mentioned that there should be only few lecture related to newer drug and recent advancement in therapy. 41.3% mentioned that there should be orientation course of few days in studentship. 28.26% mentioned regular lecture on drug therapy in III MBBS. 5.43% mentioned no need of pharmacology teaching in and after III MBBS. As much as 44.86% students mentioned that as compared to other subjects, pharmacology teachers are "most good and few average". 39.25% mentioned "all good and knowledgeable". 14.02% mentioned most average and few good. 1% mentioned all average. 58.88% students mentioned pharmacologist as expert therapeuticians and 13.08% denied this. 10% mentioned more better status of pharmacologist as expert therapeuticians.

The best sequence to study various topics in pharmacology suggested by students is General pharmacology, ANS, CVS, Gastrointestinal system, Respiratory system, Central nervous system, Endocrine system, Autocoids, Chemotherapy and others.

The usefulness of various evaluation methods in preparing the students for university examination rated by students in decreasing order were

Tutorial, Problem based learning, MCQ, Terminal exam and prelim exam. 32.05% students mentioned prescription writing as most interesting practical. 23.08% mentioned criticism of prescription, 15.38% mentioned drip setting/ injection filling and experimental graph. As much as 14.10% found practical related to emergency medicine as most interesting part of pharmacology practical. 44.82% mentioned prescription writing is most useful in future. 37.93% mentioned that practical related to emergency medicine, 8.62% mentioned drip setting/injection filling, 6.89% criticism of prescription and 1.72% mentioned experimental graph as the most useful topic in future. 55.14% students mentioned pharmacology subject should be taught for 1 and half year, 38.32% mentioned 1 year and 6.54% mentioned 2year.

Few of the qualities mentioned by students regarding the good pharmacology teachers are knowledge of the subject, good communication skill, ability to maintain rapport with the students and ability to make subject interesting. Important suggestions come out regarding the modification in pharmacology teaching curriculums are making subject more clinically oriented, having more interactive classes, more problem based learning and more MCQs.

## **Discussion**

In this study some students mentioned about not having any knowledge of pharmacology before entering second year. An overview of different subjects at the start of first year of MBBS may be helpful. It was observed some topic such as CVS, ANS are interesting topic and some topic such as endocrine, chemotherapy, autocoids are least interesting so effort can be done to make these topics more interesting and understandable. It was observed that interactive classes having bilateral communication were more popular amongst the students as compared to whole class lectures and lectures in small batches. Bilateral communication enhances the student's involvement in lecture which may affect their performance in exam positively<sup>[5]</sup>. Majority of students favors incorporation of more interactive classes, case study and group discussion and tutorial in regular teaching. Students' favors introduction of bed side training of clinical pharmacology during studentship which is also supported by other studies.<sup>[6]</sup> It is observed that students like to study

pharmacology by regular test/viva and interactive classes so by these way students understand the subject properly. Various studies mentioned about the inability of doctors in writing the rational prescription and it is suggested that there should be incorporation of some training of clinical pharmacology in internship.<sup>[7]</sup> For exam point of view student feel tutorials, problem based learning and MCQ are very useful so they should be included. It is observed that pharmacology should be taught with patient oriented approach and clinical case study are more useful then theoretical teaching. Demand of relevant modifications in the curriculum of pharmacology made time to time. <sup>[8]</sup> We believe during modifications these issues should be discussed.

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### **Appendix: Survey Questionnaire**

1. Did you know about pharmacology before 2<sup>nd</sup> MBBS?
  - a) NO
  - b) Somewhat
  - c) Yes, many things

2. What was the opinion of your seniors regarding Pharmacology?
  - a) Useful but boring
  - b) Useful and interesting
  - c) Interesting and useless
  - d) Boring and useless
  - e) Very useful, practically important and interesting
  - f) Other (specify)
  
3. What is your opinion regarding pharmacology now?
  - a) Useful but boring
  - b) Useful and interesting
  - c) Interesting and useless
  - d) Boring and useless
  - e) Very useful, practically important and interesting
  - f) Other (specify)
  
4. Which topic/topics did you find interesting?
  - a) General pharmacology
  - b) ANS
  - c) CVS
  - d) CNS
  - e) GIT
  - f) Respiratory system
  - g) Endocrinology
  - h) Chemotherapy
  - i) Autocoids
  - j) Other.....
  
5. Rearrange the above topics as per according to your interest/choice and usefulness in chronological order.
  
6. Which topic do you think will be useful in internship?
  - a) General pharmacology
  - b) ANS
  - c) CVS
  - d) CNS
  - e) GIT
  - f) Respiratory system
  - g) Endocrinology
  - h) Chemotherapy
  - i) Autocoids
  - j) Other.....
  
7. Which of the following method did you find most interesting in second year?
  - a) Lectures in whole class
  - b) Lectures in batches
  - c) Interactive classes (strict bilateral communication)
  - d) Demonstration/tutorials
  - e) Student seminars

- f) Audiovisual (computer/projector) aided lecture
  - g) Clinical (patient related) pharmacology
  - h) MCQ based study
  - i) Others (specify)
8. Rearrange the above topics as per according to your choice/interest/usefulness in chronological order.
9. Would you like the following topics to be added as a part of regular teaching to make it more interesting and useful?
- a) Student seminar
  - b) Group discussion
  - c) Quiz
  - d) Case study and treatment discussion
  - e) Other (specify)
10. From where did you prefer studying pharmacology?
- a) Text books only
  - b) Keys/handy books only
  - c) Teacher's class notes
  - d) Other notes
  - e) Self prepared notes
  - f) Combinations
  - g) Other (specify)
11. What is your pattern of study in pharmacology?
- a) Regular because of interest
  - b) Regular for gaining more knowledge
  - c) Regular because of tests/viva and interactive classes
  - d) Only during tests and exams
  - e) Shall study only for final exam
12. How did you learn pharmacology?
- a) By cramming/mugging
  - b) By understanding
  - c) By grasping thing
  - d) By combination
  - e) Can never learn
13. Do you think the following special topics should be discussed in lecture/practical of pharmacology?
- a) Pediatric pharmacology
  - b) Geriatric pharmacology
  - c) Rationality

- d) Dose schedule and calculation
  - e) Drug administration procedure
  - f) Drugs used in special condition like kidney dysfunction, sexual dysfunction, emergency drugs
  - g) Other (specify)
14. How do you rate pharmacology in comparison to other MBBS subjects?
- a) Useless, not important
  - b) Above all in subjects
  - c) Average, same as other
  - d) Other (specify)
15. Do you think that the subject should taught in or after 3<sup>rd</sup> MBBS?
- a) Yes, regular lecture on drug therapy in 3<sup>rd</sup> MBBS
  - b) No, enough pharmacology
  - c) Orientation course of few days during internship
  - d) Only few lecture on newer drugs/and recent advancement on therapy.
16. How do you regard pharmacology teacher as compared to other?
- a) All average
  - b) All below average
  - c) Most average few good
  - d) Most good few average
  - e) All good and knowledgeable
  - f) Other (specify)
17. Do you think pharmacologists are respected as expert therapeuticsians?
- a) Yes
  - b) No
  - c) More better status
  - d) Not known
18. What changes/modification should be done to make pharmacology more interesting/approachable/understandable and practicable?
19. What is the best order to study in pharmacology?
- a) General pharmacology
  - b) ANS
  - c) CVS
  - d) CNS
  - e) GIT
  - f) Respiratory system
  - g) Endocrinology
  - h) Chemotherapy
  - i) Autocoids



- j) Other.....
20. Rate the usefulness of each of the following evaluation methods in preparing you for your university professional examination.
- a) Tutorial
  - b) Problem based learning
  - c) MCQ
  - d) Terminal exam
  - e) Prelim exam
21. Which part of practical did you find most interesting?
- a) Prescription writing
  - b) Drip setting/injection filling
  - c) Emergency medicine
  - d) Criticism of prescription
  - e) Experimental graphs
22. Which part do you think most useful in future?
- a) Prescription writing
  - b) Drip setting/injection filling
  - c) Emergency medicine
  - d) Criticism of prescription
  - e) Experimental graphs
23. How much time, according to you, would be adequate for second professional MBBS teaching?
- a) 1 year
  - b) 2 year
  - c) 1 and half year
24. According to you what should be the quality of good pharmacology teacher?