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ASSESSING TEACHING METHODOLOGY IN PHARMACOLOGY AMONG UNDERGRADUATE MEDICAL STUDENTS

Pharmacology

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ABSTRACT

Background: Pharmacology as a subject has scientific obligations and feedback from the students facilitates a change in preconceived notion about teaching. Improved teaching methodology is a prerequisite for education system to make students learn effectively.
Objective: To determine the opinion of second year MBBS students regarding the teaching of pharmacology, the best way of learning, understanding and application of the subject in clinical practice. **Methods:**This questionnaire-based cross-sectional study was conducted in the department of pharmacology in TVMCH among 150 second year MBBS Students. They completed the prevalidated questionnaire comprising 13 questions, by selecting the best suitable option. **Results:** Among 150 students,18% found CNS as most interesting followed by CVS (16%) and General Pharmacology(16%). Around 57% of students chose Lecture as the most interesting teaching method. Student's prefer Problem based learning (37%) as the most useful evaluation method. Majority (85%) study only during class tests. 41% of students want an orientation course in pharmacology in CRRI and 36% want few lectures in III MBBS. Drip setting(39%) followed by Prescription writing (34%) were the most interesting practicals. **Conclusion:** Pharmacology needs to be taught in III MBBS and in Internship period for regular updates in clinical pharmacotherapeutics. Problem based learning and interesting lectures would make learning pharmacology an interesting experience. These feedbacks may help in planning the curriculum to be more Learner centered and clinically oriented.

KEYWORDS

Pharmacology, Learning ,Teaching methodology, Evaluation

INTRODUCTION:

Pharmacology is a highly evolving medical subject, being both a basic and applied science forming the backbone of rational therapeutics. The primary objective of teaching pharmacology is to enable undergraduate medical students to take rational therapeutic decisions in clinical practice[1]. A meta-analysis of more than forty research studies suggests there is a strong relationship between student ratings and student learning[2].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 with few opining that teaching pharmacology course in medical schools has failed to keep pace with the rapid changes in medical practice[3-6] .It is an accepted fact that learner's view of their educational experience is valuable in assessing the effectiveness of courses and teaching methods[8]. Reviewing the teaching program regularly and modifications in the methodologies of imparting knowledge has become the need of the hour. The course assessment instruments like feedback may help to know about the advantages and disadvantages of teaching and assessment methods . In order to assess the strength of the pharmacology curriculum and students' learning experience in this setting, collection of the students' feedback was done so that necessary reforms can be implemented for the betterment of teaching/learning the subject.

Few studies are conducted in Indian setting related to the feedback of teaching methodologies and evaluation methods from second year medical students. So we have designed this study to get feedback regarding teaching methods and evaluation methods in pharmacology subject from second MBBS medical students in Tirunelveli medical college, Tamilnadu.

OBJECTIVE:

To determine the opinion of second year MBBS students regarding the teaching of pharmacology, the best way of learning, understanding and application of the subject in clinical practice.

MATERIALS AND METHODS:

STUDY POPULATION:

150 second year MBBS Students

STUDY DESIGN:

Questionnaire based Cross sectional study

STUDY PLACE:

Department of Pharmacology at Tirunelveli medical college, Tirunelveli.

STUDY PERIOD:

3 Months

INCLUSION CRITERIA:

Second year MBBS students in Tirunelveli medical college who are willing to participate.

EXCLUSION CRITERIA:

Second year MBBS students in Tirunelveli medical college who are not willing to participate.

METHODOLOGY:

The study was commenced after getting institutional ethical committee approval.Written informed consent was obtained from all participants after explaining the study details . The Second year MBBS students meeting the study criteria were included in the study. A total of 150 students were enrolled in the study.

A Cross sectional and a questionnaire based study was conducted at the department of pharmacology for second year MBBS Students in Tirunelveli medical college. Students were given prevalidated questionnaire containing 13 questions and they were asked to mark single best suitable option. Student's identity were not revealed in the questionnaire. Thirty minutes was allotted for completing the questionnaire. The questionnaire was based on previous studies undertaken on the evaluation of perception and feedback of teaching/learning in pharmacology[9-12].

STATISTICAL ANALYSIS:

Descriptive statistics was used for analysis of data and results were expressed as percentage.

RESULTS :

FIGURE 1
STUDENTS RESPONSE ON PREFERRED STUDY MATERIAL

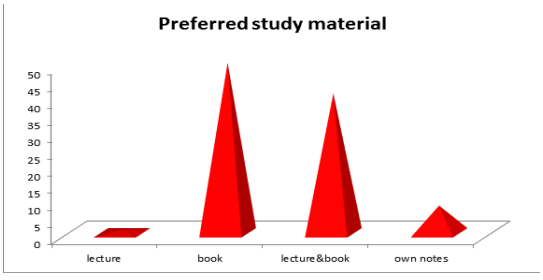

Figure 1 : Shows the preference of study materials by the students. Around 50% students prefer only textbooks and 41% students prefer both the combination of textbooks and lecture notes.Only 8% prefer own notes and 1% depend only on lecture notes.

FIGURE 2 INTERESTING TOPICS SELECTED BY STUDENTS

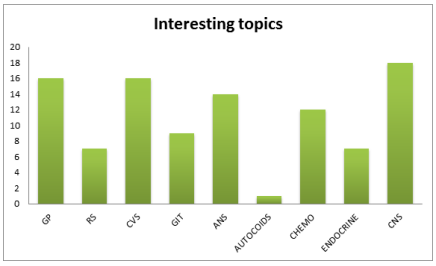

Figure 2: Shows the most interesting topics selected by students. Around 18% found CNS as most interesting followed by CVS (16%) and General Pharmacology(16%), ANS(12%),Chemotherap (12%), GIT (9%),RS(7%),Endocrinology(7%) and Autocoids(1%)

FIGURE 3 MOST INTERESTING TEACHING METHOD ACCORDING TO STUDENT'S RESPONSE

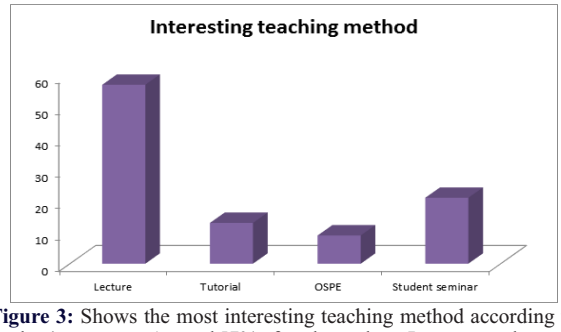

Figure 3: Shows the most interesting teaching method according to student's response. Around 57% of students chose Lectures as the most interesting teaching method followed by student seminars (21%),tutorials (13%) and OSPE(9%).

FIGURE 4 STUDENT'S RESPONSE ON USEFUL EVALUATION METHODS

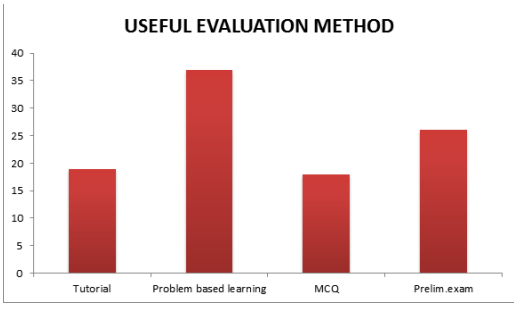

Figure 4 : Shows Student's response on usefulness of evaluation methods. Student's prefer Problem based learning(37%) followed by Preliminary exam(26%),Tutorials(19%) and MCQ(18%) as more useful evaluation method.

TABLE 1 STUDENTS RESPONSE REGARDING THEIR STUDY PATTERN IN PHARMACOLOGY

Table 1: Describes the Student's pattern of study in pharmacology.

PATTERN OF STUDY	STUDENTS RESPONSE
REGULAR	6%
ONLY DURING CLASS TESTS	85%
ONLY FOR FINAL EXAMS	11%

TABLE 2 STUDENTS RESPONSE ON PHARMACOLOGY BEING TAUGHT IN OR AFTER III MBBS

Table 2: Shows the student's response on pharmacology being taught in or after III MBBS.

ONLY FEW LECTURES IN III MBBS	36%
IN ENTIRE III MBBS YEAR	8%
ORIENTATION COURSE IN CRRI	41%
NO, ENOUGH PHARMACOLOGY	15%

TABLE 3 MOST INTERESTING PRACTICAL ACCORDING TO STUDENT'S RESPONSE

Table 3: Shows the most interesting practical according to student's response.

PRESCRIPTION WRITING	34%
DRIP SETTING	39%
PRESCRIPTION AUDIT	23%
EXPERIMENTAL GRAPHS	4%

DISCUSSION

Medical education system forms the base of building doctors and hence healthy society. It demands teachers teaching the best methods to produce quality doctors from students. Many psychometric studies have revealed the close association between students opinion and instructors effectiveness[4,7].

The present study has been designed in the form of a questionnaire with the objective to obtain the students perception regarding the utility of the prevailing system of teaching and to evaluate the benefits of the current methodologies.

Interest in particular subject can affect understanding of it. So now it is our role to make teaching/lectures more interesting and understandable for students.

In our study, around 54% students were having some information about the pharmacology subject and 46% students were having no idea of pharmacology subject before entering in second year comparable to a study done by Garg et al, wherein 65% of students do not have any idea about pharmacology before entering the second year. When asked about opinion of their seniors about the pharmacology subject, 77% students mentioned that it was useful and 23% students mentioned that pharmacology subject was boring. When asked about their opinion about pharmacology subject now, 89% mentioned that it is useful and 11% mentioned it is boring. Study done by chavda et al shows similar results wherein the opinion of seniors was that 78% opined pharmacology was useful and the opinion of students that the subject pharmacology usefulness is 91%.

Most of the students found CNS (18%),CVS (16%) and General pharmacology(16%) most interesting topic in pharmacology. Other students mentioned ANS(14%), Chemotherapy(12%),GIT (9%),Respiratory system (7%), Endocrine (7%), and Autocoids(1%) as most interesting topic in pharmacology.

The most interesting teaching method according to student's response was lectures(57%). 21% students found student's seminar, 13% mentioned tutorials and 9% likes OSPE as most interesting method of teaching pharmacology subject. These results are consistent with the study done by Muzaffar AP et. al reporting 76.1% of participants opined lecture as most interesting teaching method . Lack of interaction is considered one of the major limitation of the traditional lecture.[18,19]

In a study by Roy K Y et al,72.9% preferred case scenarios as part of the regular teaching schedule .Similarly in our study,majority of students (72%) mentioned that case study and treatment discussion should be included in regular teaching to make it more interesting and useful. 28% students mentioned group discussion as part of their regular teaching to make it more interesting and useful.

As much as 50% students mentioned that they preferred studying pharmacology in second year by text books, 8% by self prepared notes, 41% by combination of lecture notes and text books and 1% by lecture notes only. These results are comparable to the study by Mehta et al, wherein 40% students preferred combination of lecture notes and text books.

Only 4% students regularly study pharmacology.85% of students study only during internal tests/tutorials and around 11% students shall study only during final exams.

19% students mentioned they learn pharmacology by mugging and less understanding.81% students mentioned that they learn the pharmacology by understanding and grasping the subject.

In our study,88% students favored the discussion of topics like drugs

used in special conditions like liver/kidney dysfunctions, and paediatric pharmacology in lectures/practicals of pharmacology.

Around 93% students want to discuss drugs to be used in pregnancy and lactation, and 83% students want to learn drugs used in sexual dysfunction followed by geriatric pharmacology (81%) and dose calculations in paediatric and special situations(78%) Most of the students mentioned that pharmacology subject should be taught also in or after III MBBS, out of these 36% mentioned that there should be only few lectures related to newer drug and recent advancement in therapy. 41% mentioned that there should be orientation course of few days in internship similar to a study by Garg A et al. wherein 40% wanted to have an orientation course of a few days during internship. Chavda et al also show similar results. 8% mentioned regular lecture on drug therapy in III MBBS.15% mentioned no need of pharmacology teaching in and after III MBBS.

The most useful evaluation method in the preparation for university exams according to student's response was Problem based learning(37%). In a study by Padmanabha TS et al also, Problem based learning was the most useful evaluation method.28% students found preliminary examinations, 19% mentioned tutorials and 18% preferred MCQ as most useful evaluation method.

Our study shows 39% mentioned drip setting/ injection filling as most interesting practical 34% students mentioned prescription writing, 23% mentioned prescription audit, and only 4% mentioned experimental graph.

Although the knowledge of pharmacology is essential for physicians,it is perceived as dry and volatile by medical students 13 .There is an urgent need is to develop innovative learning modules both in classrooms, which in turn will foster more of interaction among students, kindle their enthusiasm, create vibrant learning environments and in turn help in recollection of topics [14,15].

Even the skillfully framed classes can become monotonous after few classes, so innovative modules should be incorporated in lectures to maintain both interest and increase the quality of student learning in Pharmacology. For each institution that embarks on curriculum improvement, careful consideration of these issues is necessary to ensure better understanding and clinical reasoning among students.

CONCLUSION:

Students consider problem based learning as the most useful evaluation method in preparing for university examinations. Lectures are still the most preferred teaching method for students. Students are of opinion that pharmacology is also needed in III MBBS and internship period, so that they may stay updated in clinical pharmacotherapeutics. These feedbacks may help in planning the curriculum and to improve the teaching for undergraduate students which is learner centered and more clinically oriented.

Questionnaire Age/Sex-

1. Did you know about Pharmacology before it was introduced to you in II MBBS?
a) yes b) no
2. What opinion did you gather from your seniors regarding Pharmacology?
a) Useful b) boring
3. What is your opinion now?
a) Useful b) boring
4. Which topics did you find most interesting?
a) General Pharmacology
b) Respiratory System
c) Cardiovascular
d) GIT
e)Autonomic Nervous system
f)Autacoids
g) Chemotherapy
h) Endocrine
i) Central Nervous System
5. Which of the following method did you find most interesting in second year?
a) Lectures b) Demonstrations /Tutorials
c) OSPE d) Students' Seminars
6. Would you like the following to be added as a part of regular teaching?
a) Case Studies and Treatment b) Group discussions
7. From where did you prefer studying Pharmacology?
a) Lecture notes only
b) Text books only
c) Lecture notes and Text books combined
d) Own notes after referring lecture notes, text books, seniors' notes, etc.
8. What is your pattern of study in Pharmacology?
a) Regular
b) Only during tutorials/ tests / exams
c) Shall study only for final exams.
9. Do you think the subject should be taught in or after III MBBS?
a) Only a few lectures on new drugs to be taken in III MBBS
b) No, enough of Pharmacology
c) Orientation course of few days during Internship
d) Yes, the subject should be taught in entire III year
10.Do you think the following special topics should be discussed in lectures/practicals?
a) Paediatric Pharmacology (Y/N)
b) Geriatric Pharmacology (Y/N)
c) Drugs in Pregnancy and Lactation (Y/N)
d) Drugs in liver/kidney dysfunction (Y/N)
e) Drugs used in sexual dysfunction (Y/N)
f) Calculation of doses in pediatric and special situations (Y/N)
11. What is your method of learning?
a) More mugging less understanding.
b) Understanding and grasping the subject
12. Rate the usefulness of each of the following evaluation methods in preparing for your university examinations?
a)Tutorial b) Problem based learning
c) MCQ d) Prelim exam
13.Which part of practical did you find most interesting?
a) Prescription pattern b) Drip setting/injection filling
c) Prescription audit d) Experimental graphs

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