

ORIGINAL RESEARCH

Study to Evaluate Attitude, Perception, and Feedback of Pharmacology Teaching-Learning Methodology Among Students Who Completed 2ND M.B.B.S in A Medical College

¹Dr. Deepthi Rani Bodda, ²Dr. Sachidananda Moorthy, ³Dr. Yavari Raghu Srinivas

¹Assistant Professor, Department of Pharmacology, Government Medical College Srikakulam, Andhra Pradesh, India

²Professor & HOD, Department of Pharmacology, Kona Seema Institute of Medical Sciences, Amalapuram, Andhra Pradesh, India

³Assistant Professor, Department of Physiology, Government Medical College, Srikakulam, India

Corresponding author

Dr. Sachidananda Moorthy

Professor & HOD, Department of Pharmacology, Kona Seema Institute of Medical Sciences, Amalapuram, India

Email: moorthy.dr@gmail.com

Received date: 21 January, 2024

Acceptance date: 17 February, 2024

ABSTRACT

Background: Pharmacology is one of the most important subjects which is ever-expanding and ever-changing like other branches of medical science. Although crucial for physicians, is perceived as dry and volatile by medical students. It is one of the most evolving branches in medical sciences and hence, not only concepts but also the teaching and evaluation methods need to be kept under continuous review. The course assessment instruments like feedback from students may help to know about the pros and cons of teaching and assessment methods. **Material & Methods:** The study was conducted after approval from the Institutional Ethics Committee (IEC), Maharajah's Institute of Medical Sciences (MIMS), Nellimarla. This was a cross-sectional study conducted in the Department of Pharmacology. Medical students who have completed their Pharmacology examination were surveyed with a pre-validated questionnaire designed for them. The questionnaire included questions on three main categories, i.e., teaching-learning methodology, their perception, and general questions. Suggestions were also asked regarding the quality of good pharmacology teachers and modifications needed in pharmacology teaching methods. **Results:** 56.4% felt pharmacology is very useful, practically important and interesting, 48.2% of students found chemotherapy as interesting topic. Only 8.7% study pharmacology regularly out of interest while 52.6% reads regularly because of tests/viva and interactive classes. 57.8% wanted to discuss drugs used in special conditions like kidney dysfunction etc. as special topics during class. 50 % found rabbit eye experiment as most interesting but less useful to prescription writing and criticism and correction. 69% liked power point presentation along with black board teaching. **Conclusion:** This study revealed the positive attitude and perception of students towards Pharmacology. Students gave feedback which helps in making the subject more interesting and useful for them by improving teaching learning methods

Keywords: Pharmacology, Teaching, Attitude, Perception, Feedback.

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-Non Commercial-Share Alike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

INTRODUCTION

Knowledge is to acquire, retain and use information for skill, Attitude is to react and interpret events and Good practice is progress of knowledge and technology executed in an ethical manner.⁽¹⁾ Pharmacology which is studied in II MBBS in India serves as a foundation stone for good clinical practice.⁽²⁾ It is one of the most important subject

which is ever-expanding and ever changing like other branches of medical science.^(3,4) Although crucial for physicians, it is perceived as dry and volatile by medical students.⁽⁴⁾

There are some changes in the form of demonstration of computer aided animal experiments, various dosage forms and drug delivery systems but these are inadequate.⁽⁵⁾ Hence, along with the concepts the

teaching methodologies and evaluation methods need to be kept under continuous review.⁽⁶⁾

To make teaching of Pharmacology more effective and useful, it is important to know students' perception about current curriculum and Teaching – Learning (T-L) practices to be able to make appropriate modifications in the same for enhancement of their knowledge and retention of Pharmacology.⁽⁵⁾

Many attempts have been made by various colleges all over India and abroad to make pharmacology teaching more interesting and relevant.⁽⁷⁾ A little emphasis has been given to clinical patient-related teaching, and newer teaching methods like problem base learning/microteaching and integrated teaching but are not advocated as part of regular teaching. There is strong demand from students for this newer teaching methodologies.⁽⁶⁾ The course assessment instruments like feedback from students may help to know about the pros and cons of teaching and assessment methods.⁽⁸⁾

There were not many previous studies reported from Andhra Pradesh. In view of this, the present study was conducted with the objectives of evaluating students perception about Pharmacology and their view about teaching methodologies used in Pharmacology using a pre-validated questionnaire among medical students (6th semester) who completed Pharmacology examination recently at Maharajahs Institute of Medical Sciences (MIMS), Vizianagaram, Andhra Pradesh, India.

METHODOLOGY

It was a cross sectional, open labelled questionnaire based study conducted in the month of June 2019, at Maharajah's Institute of Medical Sciences, Vizianagaram, Andhra Pradesh.

After taking oral consent, 6th Semester MBBS students who had just finished their Pharmacology University examination were surveyed with pre-validated questionnaire designed for them. Questionnaire was validated by pilot study on 15 students.

The questionnaire consisting of 28 questions having 4-8 options each was based on previous studies undertaken for undergraduate medical students and suitably modified for the present setting. It included questions on three main categories, i.e., teaching-learning methodology, evaluation methods and general questions. Suggestions were also asked regarding the quality of good pharmacology teachers and modification needed in pharmacology teaching methods.

Students were asked to mark the options whichever they felt was most appropriate. The students were asked to be truthful and unbiased in answering the questions and were told to mark more than one option if they found it necessary. Sufficient time was given to fill the questionnaire. They were asked not to reveal their identities in order to make them express freely.

The completed questionnaires were collected. Incomplete questionnaires were excluded and the data of remaining students were entered into Microsoft excel. Descriptive statistics were used for analysis of data. Frequency was expressed as percentage. All the procedures used in the study were approved by Institutional Ethics Committee, MIMS, Vizianagaram.

RESULTS

There were 75 female students and 39 male students who participated in the study (Fig 1). Majority of the students (70.43%) wanted the faculty members to make more use of Audio-Visual aids for effective Learning. Most of the students (69.2%) gave opinion that they found combination of both power point presentation and black board teaching as interesting way of teaching.

Out of 114 students, around 50% of students were somewhat aware and 44.7% were having no knowledge about Pharmacology before coming to second year MBBS. Regarding the question about the opinion of their seniors about Pharmacology, 33.3% of students felt that Pharmacology is useful but boring and 40.1% of students felt it is very useful, practically important & interesting. When asked about their own opinion with respect to their interest in Pharmacology it was noted that only 11.4% of students felt it was useful but boring and 66.9% of students found the subject very useful, interesting and practically important.

The students were asked to choose which topics they found interesting in Pharmacology, a least of 11.4% of them found General Pharmacology and majority 48.2% found Chemotherapy interesting and 41.2% of students felt it will be useful in future. As a reply to the question about how they rate Pharmacology in comparison to other MBBS subjects, 64.9% of them replied it as same as other subjects and only 23.4% felt Pharmacology is above all other MBBS subjects. 32.4% of students gave the opinion that they require regular lectures on drug therapy in 3rd MBBS and 36.8% felt they require few lectures on new drugs and recent advancement in therapy after they finish second year course.

Regarding teaching methodology in Pharmacology, 45.6% of students found Clinical Pharmacology as an interesting method following it by lecture in whole class (35%). The least interesting teaching methods were lecture in batches (5%), students seminars (3.5%) (Fig 2). Majority (57.8%) felt that incorporating case study and treatment discussion and quiz (34.2%) as a part of regular teaching will make Pharmacology more interesting (Fig 3). Half of the students (50%) preferred text book to study Pharmacology, some preferred (38.5%) teacher's notes and least (24%) from self - prepared notes. Only 13% students study Pharmacology before tests and exams. Most of the students (52.6%) study Pharmacology regularly because of tests, viva and interactive classes. When asked about their way of

studying the subject only 11.4% study by mugging and about 46.4% of students clearly told that they learnt Pharmacology both by understanding concepts and mugging up classifications.

Special topics such as drugs used in special conditions like kidney dysfunction, sexual dysfunction and emergency drugs were preferred (57.8%) by students to be included and discussed during lecture or practical classes in Pharmacology. 20.5% of students also requested to include recent advances in Pharmacology (Fig 4). It was quite interesting to note that 51.7% of students thought that Pharmacologists were respected as clinicians and 10.5% did not agree to that fact. Class tests (41.2%), internal exam (32.4%) and MCQs (30.7%) were the most favoured evaluation methods among the students for preparing towards university examinations (Fig 5).

As a reply to the question regarding their interesting classes during practical hours, rabbit eye experiment (49.1%), clinical problems (26.7%) and prescription writing (24.5%) were preferred by students. Majority felt prescription writing (68.9%) is most useful in future. The least interesting practical classes were of experimental graphs (21%), CCRs (17.8%) and spotters (6.25%) (Fig 6).

57% of students gave the opinion that one and half year is adequate for second professional MBBS teaching, while a few (6.1%) felt 2 years is required for the same.

Approximately 46% strongly agree that conceptual knowledge of general principles of Pharmacology will be useful in clinical practice. While only 33.3% strongly agree that knowledge of ADRs and Pharmacovigilance will promote Rational Drug Utilization (Table 1).

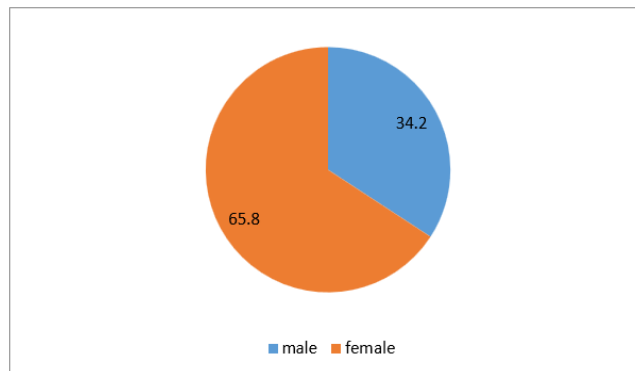


Figure 1: Pie chart showing gender Distribution

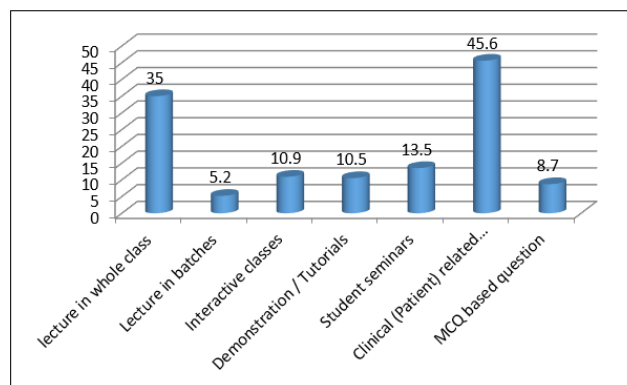


Figure 2: Teaching methods found interesting by students; expressed as percentage

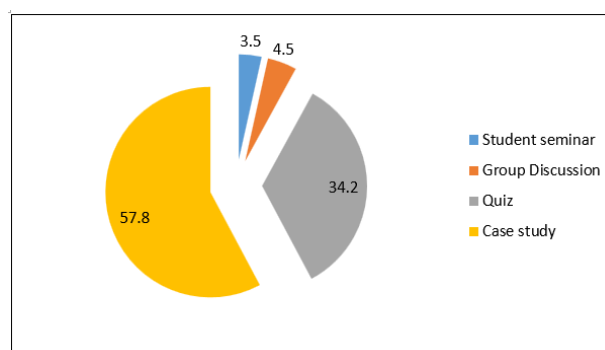


Figure 3: Teaching methods needed to be incorporated into curriculum; expressed as percentages

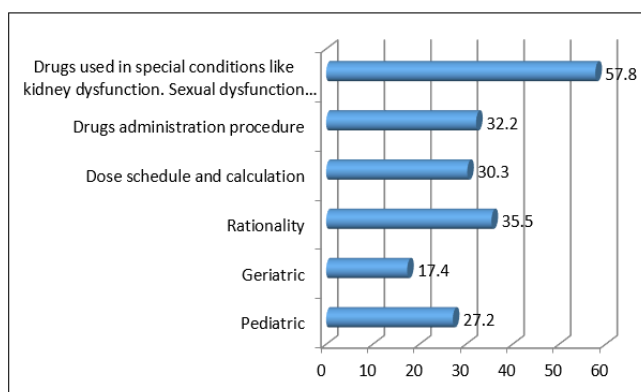


Figure 4: Special topics needed to be discussed in pharmacology teaching; expressed as percentages

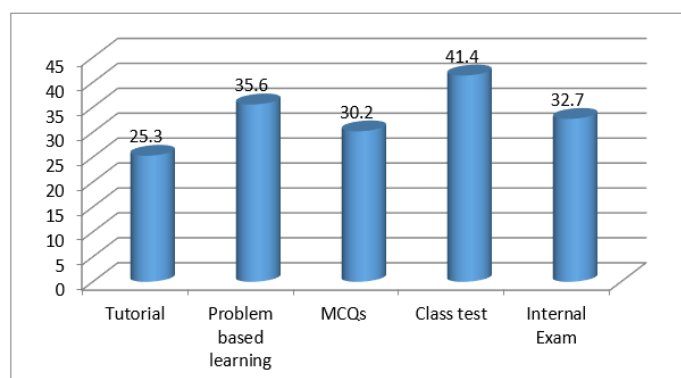


Figure 5: Evaluation methods preferred by students in preparation for their university exams; expressed as percentages

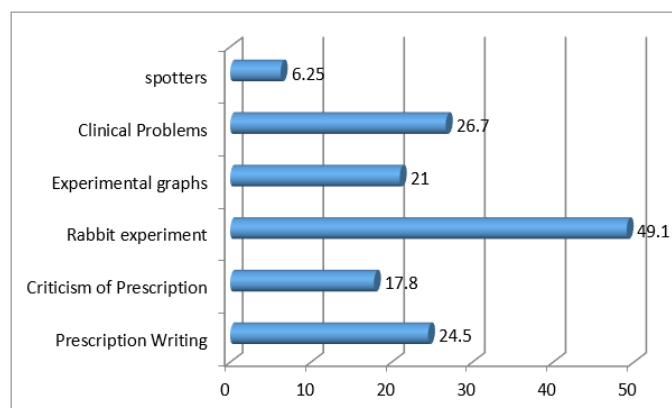


Figure 6: Practical methods found interesting by students; expressed as percentage

Table 1: Perception Of Pharmacology

SL.No	Questionnaire	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	Conceptual knowledge of General pharmacological principles will be useful in clinical practice	1.7	-	3.5	32.4	45.6
2	Knowledge of ADRs & Pharmacovigilance will promote RDU	1.7	-	8.7	38.5	33.3
3	Prescription writing exercises are interesting & clinically relevant	1.7	-	5.2	29.8	45.6

DISCUSSION

Like any other branch of medicine, Pharmacology is progressing by leaps and bounds. Consequently, reforms in the concepts of teaching methodologies and evaluation methods need to be kept under continuous review.^(2,7) In view of this, the present study was conducted to determine the attitude, perception and feedback of teaching - learning Pharmacology using a pre-validated questionnaire among medical students (6th semester) who have completed Pharmacology examination recently by Department of Pharmacology at MIMS, Vizianagaram.

Students suggested many ways that could be incorporated in conventional pharmacology teaching to make the subject more interesting and understandable. There is a need to conduct subject orientation program before the students enter into medical education as most of the students were totally unaware of the subject; while a few of the entrant students had somewhat knowledge about pharmacology⁽⁶⁾.

In a study conducted by Dutta S *et al.*, majority of students feel that problem based learning and prescriptions are extremely useful in clinics. Same results were obtained in this study regarding students opinion of clinical related teaching.⁽⁸⁾

The percentage of students who wanted group discussions to be introduced, in J K Bajaj *et al.* study (72%) was much more than that of our study and reported by Vibha R *et al.*⁽⁵⁾.

Students felt General Pharmacology as least interesting topic and Chemotherapy as most interesting topic. Hence, least interesting topics need to be emphasized more to draw attention of the student by utilizing their suggestions like use of proper AV aids and interactive teaching.

In this study, students have additionally asked for conducting few lectures on new drugs and recent advances in the therapies even after completion of 2nd year. They have also requested to include special topics such as drugs used in special conditions like kidney dysfunction, sexual dysfunction and emergency drugs to be discussed during lecture or practical classes in Pharmacology. Hence, few lectures on recent therapies and special topics may be incorporated in this programme for the benefit of the students.

Some studies reported the inability of doctors in writing rational prescription and it is suggested that there should be incorporation of some training of clinical pharmacology in the internship⁽⁵⁾.

Only 33.3% strongly agree that knowledge of ADRs and Pharmacovigilance will promote RDU. This reflects their lack of knowledge about the subject and its importance. Hence, they need to be sent to the hospitals for ADR reporting.

According to them, the qualities of good pharmacology teachers include good presentation, clarity in speech and expressivity and repetition of

drug names. Efforts can be taken in this direction through discussion and seeking guidance from senior experienced faculties.

The results obtained may not be applicable to all the medical students because these findings are based on a single centre study from Andhra Pradesh.

CONCLUSION

This study revealed the positive attitude and perception of students towards pharmacology. Students gave feedback which helps in making the subject more interesting and useful for them by improving teaching learning methods. But single time feedback which is a limitation of our study may not be sufficient to arrive at a concrete conclusion.

ACKNOWLEDGEMENT

We acknowledge second year MBBS students of 2016 batch of MIMS, Vizianagaram for participating in this project.

REFERENCES

1. Vijayarani Kannaiyan DS, K.Jaiganesh. A Study on Evaluation of Knowledge, Attitude and Practice of Pharmacology in Second MBBS Students. International Journal of Contemporary Medical Research. June 2016;Volume 3(Issue 6):2454-7379.
2. Rani V, Tekulapally K, Padmavathi V, Simpson G. Second year medical students perception about pharmacology and teaching methodologies used: A questionnaire based cross sectional study. Indian J Basic Appl Med Res. 2016;5:238-45.
3. Chavda N, Yadav P, Chaudhari M, Kantharia N. Second year student's feedback on teaching methodology and evaluation methods in Pharmacology. National Journal of Physiology, Pharmacy and Pharmacology. 2011;1(1):23.
4. Banderao PV, Bagewadi HG, Zahid SH. Attitude and perceptions of fifth term medical students of Gulbarga Institute of Medical Sciences, Kalaburagi, regarding teaching methods and their learning in pharmacology. National Journal of Physiology, Pharmacy and Pharmacology. 2018;8(5):631-4.
5. Jagminder Kaur Bajaj PG, Satinderjit Singh. Students' Perception of Pharmacology and Teaching - Learning (T-L) Methods Used in Pharmacology. Int J Med Res Prof. 2018;4(2):152-55.
6. Bhosale UA, Yegnanarayan R, Yadav GE. Attitude, perception and feedback of second year medical students on teaching-learning methodology and evaluation methods in pharmacology: A questionnaire-based study. Nigerian medical journal: journal of the Nigeria Medical Association. 2013;54(1):33.
7. Manjunath S, Nagesh R, Srinivas T, Someswara G. A study on the evaluation of medical students' perception and feedback of teaching-learning of pharmacology in a medical college. International Archives of Integrated Medicine. 2015;2(9):102-10.
8. Dutta S, Kilabati Devi N, Das R, Das A, Meena Devi N. A questionnaire based study to evaluate the perception, attitude and feedback of second year undergraduate students with respect to their pharmacology teaching methodology. International Journal of Research in Medical Sciences. 2017;5:3994.