

Original Research Article

Second year medical student's feedback and perspective on teaching methodology in Pharmacology in a tertiary care teaching hospital from India

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Abstract: Understanding current scenario of medical undergraduates regarding teaching as well as learning pharmacology and understanding its vital role in academics, clinics and research may greatly help in improving the teaching of this discipline. This study was conducted to evaluate medical students' opinions toward pharmacology teaching. 2nd year MBBS students of 5th term at Bidar Institute of Medical Science, Bidar who completed a self-administered questionnaire that inquired concerning their views toward pharmacology teaching were enrolled in study. The majority (69.35%), of the participants were male and 30.65% were females. Majority of them agreed that printed handouts are must before class (64.52%), physiology part must be discussed prior to the class (95.16%), preferred black board (BB) i.e. 90.33% over power point presentation (PPT) i.e. 20.97%, seminars should be allotted to interested students (69.35%); experimental(83.88%), problem based learning(91.93%), clinical pharmacology(77.42%) helps during clinical posting. Majority liked to discuss with clinical cases (98.38%), group discussion (90.32%) improves understanding and memorizing drugs was difficult (87.10%).The study reviewed the general perceptions of students regarding the pharmacology teaching. It needs concerted efforts to make learning pharmacology an interesting experience and to identify priority areas for such improvements.

Keywords:Pharmacology teaching; Students opinion, Medical undergraduate

INTRODUCTION:

Pharmacology being both a basic and applied science forms 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]. Although the clinical pharmacology exercises sensitize the students for a rational use of medicines (RUM), unfortunately these skills are not reinforced during clinical terms and so their practical application remains incomplete. Perhaps an inbuilt deficiency of integrated teaching across the medical course may also interfere in the achievement of desired objectives [2].

The subject is full of high factual information rather than therapeutic skills. It is accepted that the feedback from students serves as an effective tool in developing teaching methodology and evaluation methods in undergraduate teaching [3]. There is a growing awareness that learner's view of their

educational experience is valuable in assessing the effectiveness of courses and teaching methods [4].

Furthermore, reviewing the teaching program at regular intervals and modifications in the methodologies of imparting knowledge is a must. So, 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.

AIMS AND OBJECTIVES:

To find the perceptions of second year medical students towards an

1. Pharmacology teaching-learning technique
2. Its clinical usefulness and thereby adopt certain changes in future if necessary

MATERIALS AND METHODS:

Study design: observational cross sectional based questionnaire study

STUDY PLACE:

The study was carried out by the Department of Pharmacology at Government medical college, Bidar, Karnataka during June 2015.

STUDY POPULATION:

62 second MBBS medical students selected randomly from total 78 second year MBBS medical students of 5th term. Prior permission was obtained from the Institutional Ethics Committee (IEC). Selected students were given prevalidated questionnaire containing 16 questions were given to each student and they were asked to mark single best suitable option. Students were instructed not to reveal their identity in the questionnaire. Thirty minutes was the time allotted for answering the questionnaire? The questionnaire was based on previous studies undertaken on the evaluation of perception and feedback of teaching/learning in pharmacology and it was suitably modified for our fifth term medical students. The completed questionnaire was collected and data was analysed.

Assessment Scale - A 5-point Likert scale ranging from strongly agrees, agree, not sure, disagree and strongly disagree was used.

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

RESULTS:

Study findings are depicted in the form of tables & figures.

There was 43(69.35%) male students and 19(30.65%) female students who participated in the study.(table-1)

Majority of them agreed that printed handouts are must before class(64.52%), part of physiology must be discussed prior to the class(95.16%), preferred black board(90.33%) over power point presentation(PPT) i.e. 20.97%(figure-1) seminars should be allotted to interested students(69.35%); experimental(83.88%), pharmacy(69.36%), problem based learning(91.93%), Clinical pharmacology must be devoted more lecture hours(77.42%);(figure-2) clinical pharmacology before clinics (95.16%) and correlation(98.38%) helps during clinical posting, Majority liked to discuss with clinical cases(98.38%) and need to teach few topics in pre final , final year(59.68%),(figure-3) group discussion(90.32%) improves understanding but memorizing drugs was difficult(87.10%).(figure-4).

Table 1: Medical undergraduate’s feedback and perspective on teaching methodology in Pharmacology

Sl.no	Parameters Male:43(69.35%); Female:19(30.65%)	SA	A	NS	D	SD
1.	Distribution of handouts before lecture is a must	22.58	41.94	22.58	12.90	0
2.	Distribution of handouts before class may results in significant absenteeism	11.29	51.61	8.07	16.13	12.90
3.	Physiology of particular topic is mandatory before discussing the drugs	70.97	24.19	3.23	1.61	0
4.	All classes in pharmacology must be in power-point	9.68	11.29	12.90	37.09	29.03
5.	Black board teaching is the best method	59.68	30.65	4.84	3.23	1.61
6.	Experimental pharmacology is useful in clinics	30.65	53.23	12.90	3.23	0
7.	Pharmacy experiments is useful in clinics	16.13	53.23	29.03	1.61	0
8.	Problem based learning and prescriptions are extremely useful in clinics	54.84	37.09	8.06	0	0
9.	Seminars must be allotted to interested students in every semester	17.74	51.61	12.90	12.90	4.84
10.	Clinical pharmacology must be devoted more lecture hours	24.19	53.23	22.58	0	0
11.	Pharmacology is very important before going to clinics	66.13	29.03	4.84	0	0
12.	Unless pharmacology is simultaneously learnt along with clinical condition, it would be difficult to correlate the drugs with the disease.	74.19	24.19	0	1.61	0
13.	It would be appropriate if some topics are taught during the prefinal or final year to achieve objective no.12	16.13	43.55	33.87	6.45	0
14.	Self study helps in better understanding and remembering	14.52	33.87	25.81	20.97	4.84
15.	Group discussion helps in better understanding and remembering	53.23	37.09	6.45	3.23	0
16.	Memorizing and remembering pharmacology is difficult	45.16	41.94	9.68	1.61	1.61

SA-Strongly agree; A-Agree; NS-Not Sure; D-Disagree; SD-Strongly Disagree (All results are in percentage- %)

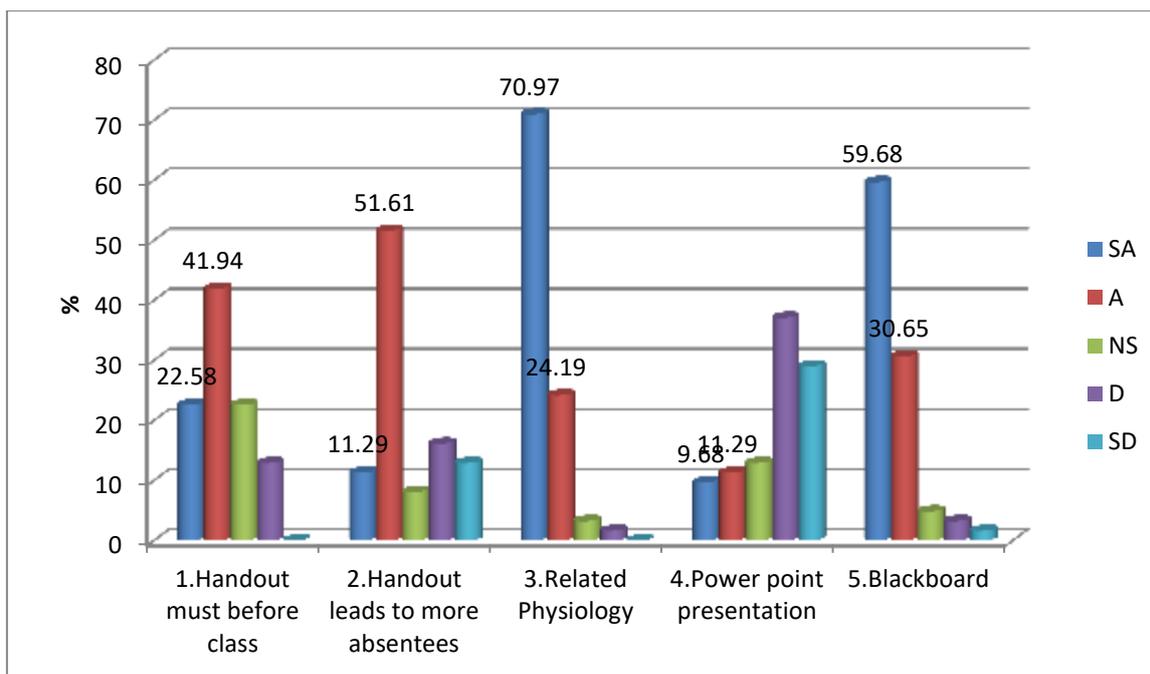


Fig 1: (Parameters-1 to 5)

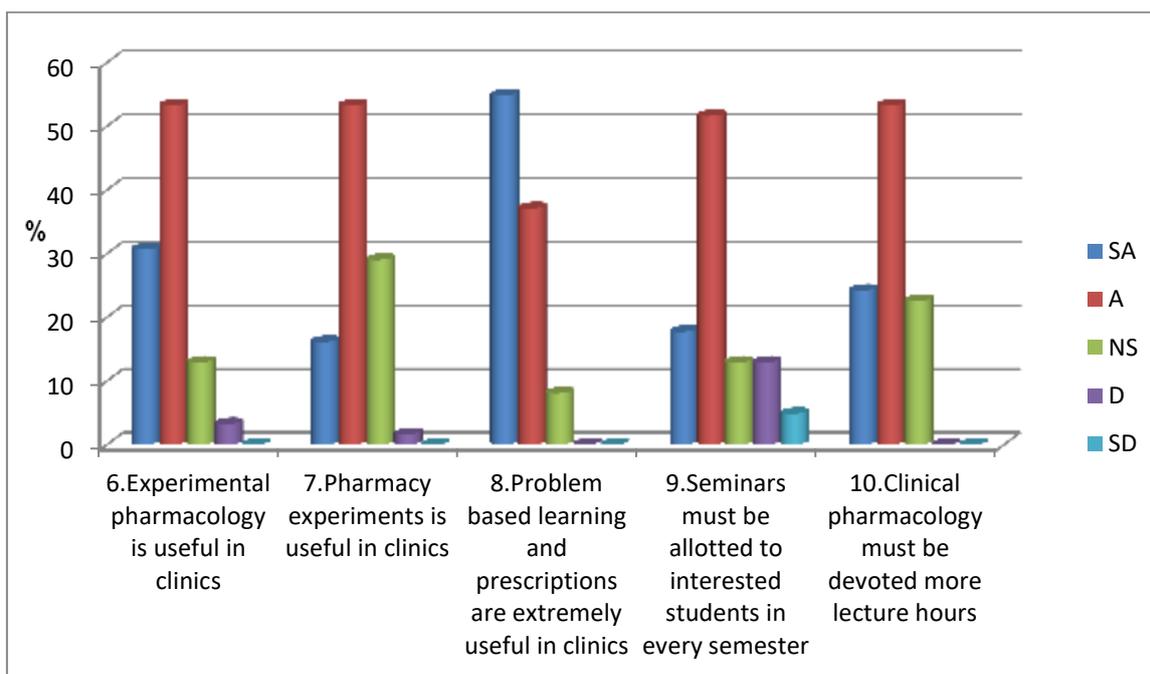


Fig 2: (Parameters-6 to10)

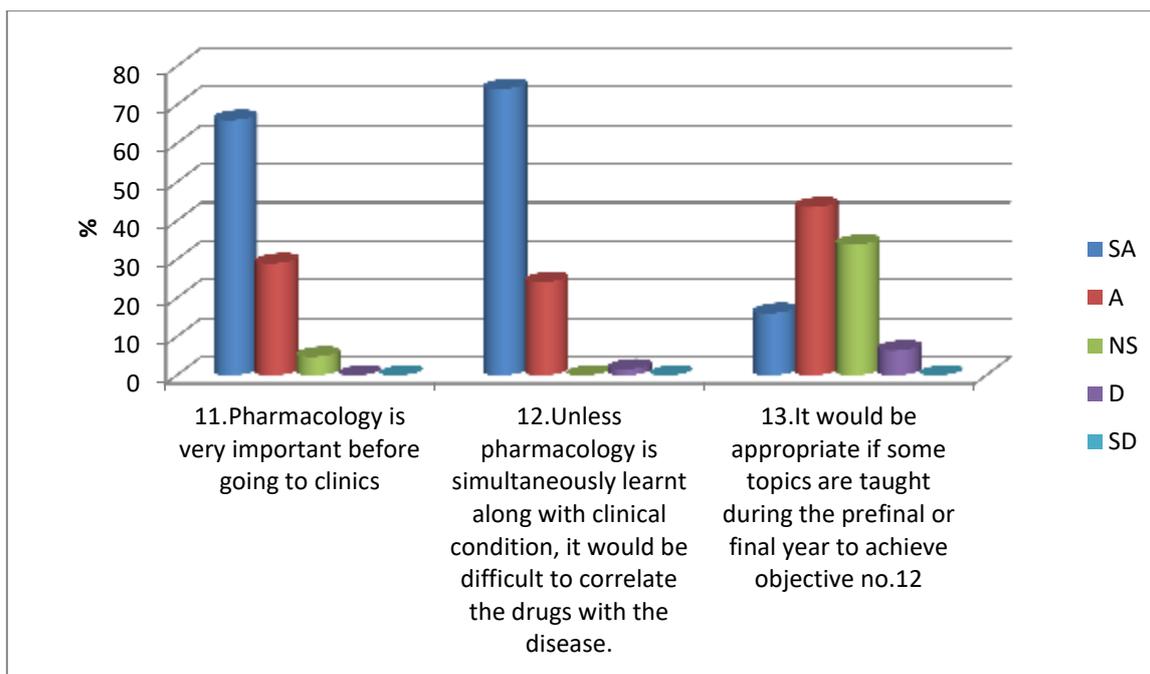


Fig3: (Parameters-11 to 13)

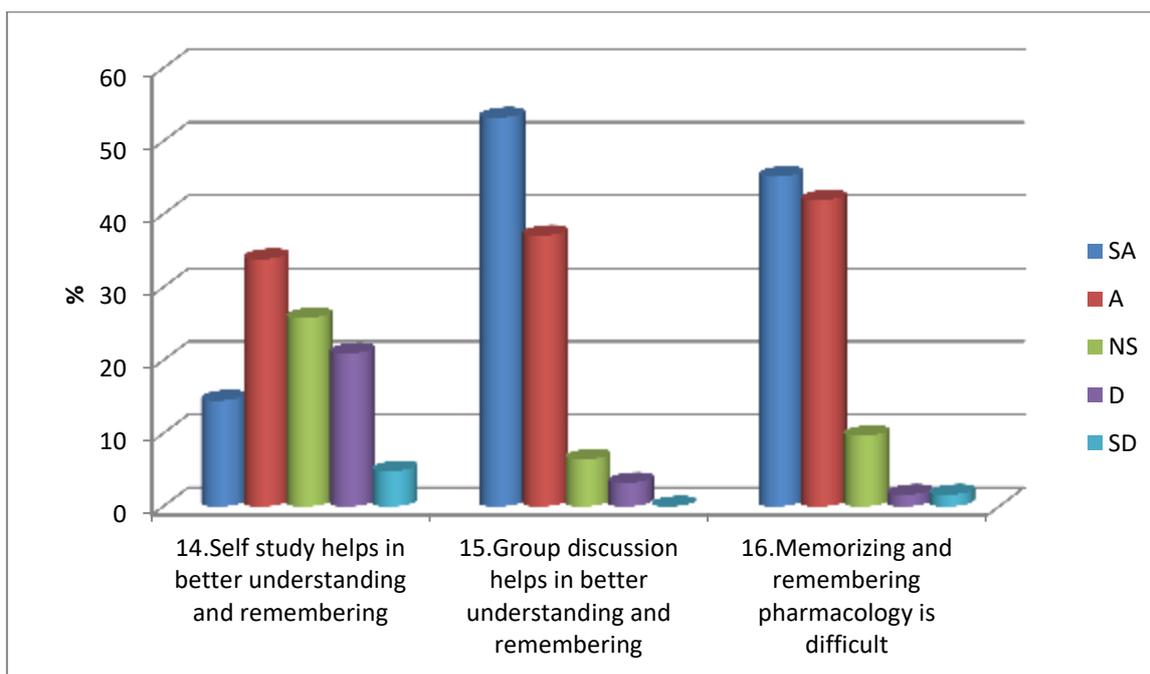


Fig 4: (Parameters-14 to 16)

DISCUSSION:

In order to treat the patients learning pharmacology forms the main building block for clinical practice. So different parameters which can be implemented according to the students needs have been evaluated here. According to McLennan MW *et al.*; [5], Mohammad Younis Bhat *et al.*; [6] studies, students preferred lecture handouts to be provided prior to class, which was also preferred in present study in which 41.94% and 22.58% agree and strongly agree respectively with this concept.

McLennan MW *et al.*;[5] study showed that handouts can discourage students from further reading, and in our study 51.61% students agree that it can lead to more absentees. This can be avoided by providing partial handouts which the students can complete only if they attend the class [7].

Understanding of physiology is very important to further understand pharmacology and the clinical subjects [8]. After 1st year of MBBS students tend to

forget most of physiology when they enter 2nd year. Hence it is better to start off with relevant physiology of the particular topic before discussing pharmacology. In our study 70.97% students strongly agree with this point which was higher when compared to Rao KY *et al.*;[7] study (33.33% 'strongly agree').

Activation of prior knowledge and recall of information can lead to conceptual change in the way students learn [9]. PowerPoint lectures are quite common everywhere in recent days. One drawback is students ignore the teacher and concentrate on taking down the notes. Rao KY *et al.*;[7] study. In our study 37.09% disagree & 29.03% strongly disagree for power point presentation. 59.68% strongly agree that Blackboard teaching is the best method. Blackboard teaching allows the students to take down the notes and diagrams which is difficult with Power Point presentations as there is tendency to deliver the lecture fast[10]

Mukopadhyay *Ket al.*:[11] opinioned that experimental pharmacology is not required in clinical practice. But in present study 53.23% agree that experimental & pharmacy is useful in clinics, it could be because of application of few basic concepts in understanding clinical aspects

From many decades Teaching of pharmacology mainly concentrates on theoretical aspects without clinical correlation. Garg A *et al.*; [12] According to Rao K Y *et al.*;[7] (72.90%) & Garg *et al.*;[12] (80%) students preferred case scenarios as part of the regular teaching schedule. This has been confirmed in our study as well wherein majority (91.93%) of students feel that PBL based learning and prescriptions are extremely useful in clinics. Pharmacologists should be involved in therapeutics and clinical medicine[13] A good pharmacologist can make a very good general practitioner. Rao K Y *et al.*;[7].

Garg A *et al.*;[12] study showed that students are not in favor of giving seminars. Where as in our study 69.35% totally agree & strongly agree to have seminars when compared to 49.51% of Rao KY *et al.*;[7] study. Seminars are a healthy way to get student into teaching at their advantage and gain their association into the subject [14].

77.42% students in our study agree that clinical pharmacology must be devoted more lecture hours and was in similar with Rao K Y *et al.*;[7] (61.49%) study. Since Clinical pharmacology in Pharmaceutical industry is an important career options nowadays for medical professionals. Around 22.58% were not aware of its importance and we should make sure that they understand its vital implications.

Prescribing suitable drugs for particular disease is an essential and an integral part of any medical therapy [15]. 66.13% & 29.03% Students in

our study strongly agree and agree respectively that sound knowledge of pharmacology is a very important subject before going to clinics was further strengthened this concept with the similar opinion from previous studies . Advani *et al.*:[16], Rao K Y *et al.*:[7].

59.68% students in our study wanted lectures on drug therapy in pre final & final year MBBS, was similar to study done by Advani *et al.*:[16], Garg *et al.*:[12], Rao K Y *et al.*:[7]. 74.19% strongly agree that unless pharmacology is simultaneously learnt along with clinical condition it would be difficult to correlate the drugs with the disease, which was more than Rao K Y *et al.*:[7] study (59.2% strongly agree). Correlating drug with disease condition at bedside can make management part to understand very easily.

In our study although students opinioned self study helps in better understanding and remembering. 90.32% students opinioned that Small group discussion helps in better understanding and remembering than self study i.e. 48.39%. Heterogeneous group of students and long term acquisition and analysis will provide us with more information. In group discussion - both the presenter and the listener are benefited [14].Group discussion plays an important role in problem-based learning (PBL) [17].

Due to content overload, students often find it difficult to remember and recall the pharmacological terms, concepts and drug names [18]. This point was accepted in our study by 87.10% student that memorizing and remembering pharmacology is difficult which was Pharmacology subject although crucial for physicians, is perceived as dry and volatile by medical students [19]. Need is to develop innovative active learning modules both in and outside classrooms, which in turn will foster more of interaction among students, kindle their enthusiasm, create significant learning environments and in turn help in recall of topics [20,21].

Hence even the skilfully framed classes can become monotonous after few days, so incorporation of innovative modules in lectures can help to maintain both interest and increase the quality of student learning 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.

LIMITATIONS OF THE STUDY:

The study was done with small sample size, monocentric study, no control group for any comparison. This study may help in future for further studies with Multicentric with more sample size.

CONCLUSION:

The study revealed the priority areas for improvement, so that student's needs could be fulfilled

as much as possible within a short period of expanding newer concepts. Also revealed that correlation between drug therapy and disease is possible only when there is a continuous & constant interaction between pharmacologist and clinician. Such regular feedbacks may help teachers to plan the curriculum and improve the teaching for undergraduate students.

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