

## Medical student's perception on teaching-learning methods of pharmacology in a medical college

Lakshmi Sravanthi Mukku, Jagadeesh Alla\*, Ramya Rachamanti

Department of Pharmacology,  
NRI Academy of Medical  
Sciences, Guntur, Andhra  
Pradesh, India

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**\*Correspondence to:**

Dr. Jagadeesh Alla,  
Email: jagannri@gmail.com

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### ABSTRACT

**Background:** To know the Medical student's perception on teaching and learning methods of pharmacology in a medical college attached to tertiary care hospital.

**Methods:** This is a questionnaire based study conducted in a medical college. A pre-validated, pre-designed questionnaire containing 22 points was given to 5<sup>th</sup> semester students to know their perception on teaching and learning methods.

**Results:** Analysis was done on 150 medical students of a tertiary care hospital. Among them, 80 % wanted the faculty members to make more utilization of Audio-Visual aids for effective learning. 78.67 % students wanted to include case based learning in the curriculum and 86.67% wanted more of the clinical pharmacology to be introduced. A 28% wanted MCQs (Multiple Choice Questions) to be included in the assessment of academic performance. A 13.33% felt that the ideal teaching method for learning pharmacology was didactic lectures. A 65% thought ideal teaching/learning media for pharmacology was the combination of LCD (Liquid Crystal display) projector and blackboard.

**Conclusions:** The study revealed the ideal teaching and learning methods in pharmacology for the betterment of students.

**Keywords:** Learning, Medical students, Methods, Pharmacology, Teaching

### INTRODUCTION

Institutions of higher education like medical colleges are one of the most essential elements of modern society. It is important that educators provide the high quality teaching and learning environment possible for the students.<sup>1</sup>

Students usually follow deep or surface approach while learning. The deep approach involves an intention to gain personal understanding, with corresponding strategies to gain meaning from the learning task. The surface approach is an intention to avoid failure facilitating the memorisation of facts without meaning.<sup>2</sup> Fostering deeper

approaches to learning in students with surface learning preferences is a complex process, and the factors which encourage such development need to be studied. As a part of deep approach students now prefer to utilize media like internet as per their comfort and completeness of concept.

Learning is considered as an accumulation of individual pieces of knowledge.<sup>3</sup> The learning outcome is largely dependent on the student's pre-existing beliefs about knowledge and learning. Different students perceiving the same learning environments vary differently due to varying beliefs. Proper learning includes affective as well as cognitive components.<sup>4</sup> Furthermore, it is important to recognise the way in which the teaching context influences

learning.<sup>5</sup> The present study was carried out with an objective to know the perception of students on learning and teaching methodologies in a tertiary care hospital attached to medical college. Based on the results obtained in this study, modifications will be implemented in teaching strategies accordingly for the benefit of students.

**METHODS**

This is a questionnaire based study done at a medical college attached to a tertiary care hospital, Guntur. After taking informed consent from students, their perception on learning and teaching methods was known in the following pattern:

Part A: 6 definitive questions with options Yes and No

Part B: 3-point likert scale-based questions with options agree, disagree and neutral<sup>6</sup>

Part C: 2 MCQ based questions.

**Inclusion criteria**

- As per our feasibility, students of 2<sup>nd</sup> year MBBS studying at NRI medical college were only included.
- 1<sup>st</sup> and final year students, house surgeons and post graduates were excluded.

**Sample size**

154 Medical students were there in 2<sup>nd</sup> year MBBS at NRI medical college. Questionnaire was given to them and they were asked to fill up in the lecture gallery during their free time. Informed consent was mentioned at the top of the questionnaire. Those who are willing to participate were only included in the study. 154 students have signed the informed consent form. 150 complete forms were analyzed.<sup>4</sup> Incomplete forms were excluded.

**Statistical analysis**

The data were analysed using MS office Excel and expressed as percentage.

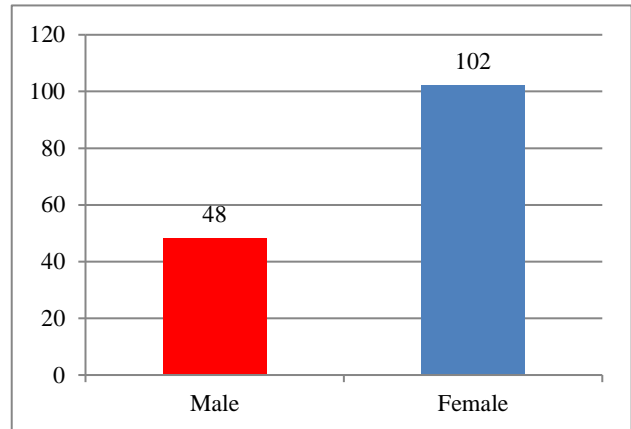
**RESULTS**

The data of 150 medical students were analysed by MS office excel. Among the participants 102 students were Female (Figure 1).

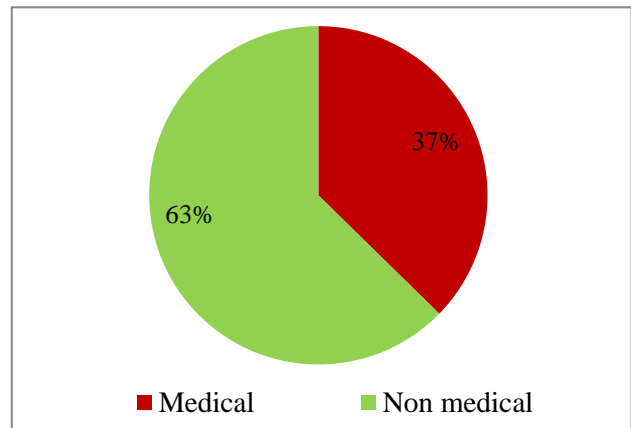
Among the students who participated in the study majority (63%) of the students parents were from non medical background.

Part-A: Among the students participated in the study 87% expressed opinion that student seminars should be introduced in the curriculum. 80% of the students expressed the opinion that group discussions should be introduced. Majority of the students expressed the

curriculum should be based on more clinical pharmacology (Table 1).



**Figure 1: Gender wise distribution of participants.**



**Figure 2: Distribution of students parents background.**

**Table 1: Questionnaire.**

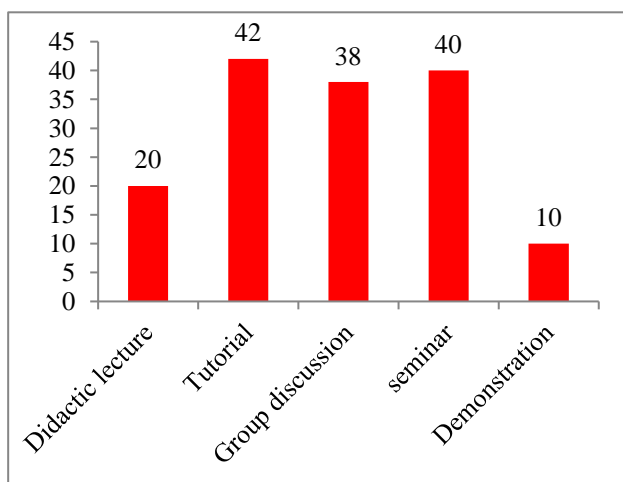
Opinion about changes recommended	Yes (%)	No (%)
Need to Increase the number of lectures	81.34	18.66
Make more use of audio-visual aids	80.00	20.00
Introduce student seminars	86.67	13.33
Introduce Case based learning	78.67	21.33
Introduce more clinical pharmacology (Pharmacovigilance)	86.67	13.33
Introduce group discussions	80.00	20.00

Part-B: Among the participants 80 students didn't pick pharmacology as their favourite 2<sup>nd</sup> year subject. Only 4 students agreed that Pharmacology will help immensely in choosing drugs rationally for their future clinical practice. 50 students agreed that calculation of Pharmacokinetic parameters are relevant and helped them in better understanding of General Pharmacology. 80 students agreed that charts will help in better understanding of the mechanism of action of drugs (Table 2).

**Table 2: Likert point scale questionnaire.**

Item	(No of students)		
	Disagree	Neutral	Agree
I find pharmacology lecturers interesting and stimulating	70	20	60
Pharmacology is my favourite subject in 2 <sup>nd</sup> year of MBBS	80	20	50
I would like Pharmacology to be more closely integrated with the clinical sciences and would like real cases in hospital to be used during problems stimulated learning (PSL)	30	110	10
The subject has helped me to develop my problem solving and logical-reasoning skills	60	60	30
The subject will help me immensely in choosing drugs rationally in my future clinical practice	20	126	4
I would like MCQs to be included in the assessment	50	52	48
Discussion charts help in better understanding of mechanism of action of drugs	20	50	80
Calculation of pharmacokinetic parameters (e.g. Vd, t <sub>1/2</sub> , Therapeutic index) is relevant and helps in better understanding of general pharmacology	20	80	50

Part C: The results were analyzed by giving 2 MCQ based questions. Among the participants majority of the students preferred tutorials, group discussions and seminar as their best choice for teaching method (Figure 3).

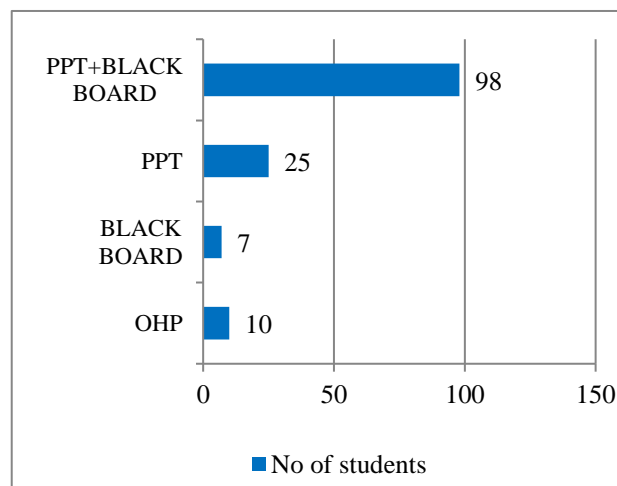
**Figure 3: Students choice of best teaching method.**

Among the participants in the study 98 students expressed the opinion that power point combined with black board teaching as their ideal learning media. Only seven students felt black board teaching as their ideal teaching learning media (Figure 4).

## DISCUSSION

Need for reviewing the teaching program regularly in the methodologies of imparting medical knowledge about

drugs and therapies is a must. This study was conducted to determine the perception and feedback of teaching/learning pharmacology using a pre-validated questionnaire among 2<sup>nd</sup> year medical students.

**Figure 4: Ideal teaching learning media.**

A 78.67% students need case based learning (Table 1) to be introduced into the curriculum as against 98% reported in the study done by Manjunath et al and 73% as reported by Jai Krishna et al.<sup>7,8</sup> About 80% (Table 1) students in our study wanted group discussions to be introduced which was more than the findings of Jai Krishna et al who reported only 31%.<sup>8</sup>

In the current study, it was observed that 75% students agreed that pharmacology is more closely related to clinical

sciences and real cases from hospitals should be used during problem based learning. This is in agreement with the findings of study conducted in New Delhi where 80% students were in favour of the bedside teaching of clinical pharmacology.<sup>9</sup> Students should be taken to wards for discussion of treatment strategies of admitted cases. Need for integration of pharmacology with clinical subjects was also supported by several accreditation organizations in medical education like General Medical Council, the Association of American Medical Colleges and the American Medical Association as per Sekhri K.<sup>10</sup> This integration will provide students with the opportunity to become familiar with various diseases and the important role of pharmacology.<sup>11</sup> For this reason, many medical schools have integrated pharmacology during clinical years.<sup>12</sup>

In the current study, 98 students (Figure 3) agreed that recent advances need to be included in the curriculum which is similar to findings by Jai Krishna et al.<sup>7</sup> There is a stigma attached among medicos regarding the study of pharmacology as per Walley T and the students' interests were more inclined towards clinical career with earning far better than pharmacological career as reported by Zgheib et al.<sup>13,14</sup>

**Limitation of present study:** This study was done among only 2<sup>nd</sup> year medical students in a single tertiary care centre. More multicentre studies need to be carried out among the medical students to draw accurate conclusions.

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