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

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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 5th 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.1

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.2 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.3 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.4 Furthermore, it is important to recognise the way in which the teaching context influences
learning. The present study was carried out with the 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
Part C: 2 MCQ based questions.

Inclusion criteria

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

Sample size

154 Medical students were there in 2nd 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. 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.](image1)

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

Part-B: Among the participants 80 students didn’t pick pharmacology as their favourite 2nd 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).

![Figure 2: Distribution of students parents background.](image2)

Table 1: Questionnaire.
Table 2: Likert point scale questionnaire.

<table>
<thead>
<tr>
<th>Item</th>
<th>(No of students)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I find pharmacology lecturers interesting and stimulating</td>
<td>Disagree Neutral Agree</td>
</tr>
<tr>
<td>Pharmacology is my favourite subject in 2nd year of MBBS</td>
<td>70 20 60</td>
</tr>
<tr>
<td>I would like Pharmacology to be more closely integrated with the</td>
<td>80 20 50</td>
</tr>
<tr>
<td>clinical sciences and would like real cases in hospital to be used</td>
<td></td>
</tr>
<tr>
<td>during problems stimulated learning (PSL)</td>
<td></td>
</tr>
<tr>
<td>The subject has helped me to develop my problem solving and</td>
<td>60 60 30</td>
</tr>
<tr>
<td>logical-reasoning skills</td>
<td></td>
</tr>
<tr>
<td>The subject will help me immensely in choosing drugs rationally</td>
<td>20 126 4</td>
</tr>
<tr>
<td>in my future clinical practice</td>
<td></td>
</tr>
<tr>
<td>I would like MCQs to be included in the assessment</td>
<td>50 52 48</td>
</tr>
<tr>
<td>Discussion charts help in better understanding of mechanism of</td>
<td>20 50 80</td>
</tr>
<tr>
<td>action of drugs</td>
<td></td>
</tr>
<tr>
<td>Calculation of pharmacokinetic parameters (e.g. Vd, t1/2, Therapeutic</td>
<td>20 80 50</td>
</tr>
<tr>
<td>index) is relevant and helps in better understanding of general</td>
<td></td>
</tr>
<tr>
<td>pharmacology</td>
<td></td>
</tr>
</tbody>
</table>

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 2nd 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.7,8 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%.8

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

Limitation of present study: This study was done among only 2nd 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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Ethical approval: The study was approved by the Institutional Ethics Committee

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