



A COMPARATIVE STUDY OF DIDACTIC LECTURE VERSUS CASE BASED LEARNING AS A TEACHING METHOD IN CLINICAL PHARMACOLOGY

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ABSTRACT

Background: Interactive student centered approaches such as Case Based Learning (CBL) is being increasingly adopted in undergraduate medical education to promote active learning. **Aims and Objectives:** To compare the performance of students taught through didactic lecture and CBL, and to obtain a qualitative feedback on CBL Teaching. **Materials and Methods:** This cross sectional descriptive study was conducted in the Department of Pharmacology, Shri Sathya Sai Medical College and Research Institute, Kancheepuram Dt, Tamilnadu. After obtaining Institutional Ethical Committee approval, 100 students were randomly selected and 50 students each were allocated to either the CBL group or the didactic lecture. Using a topic on Cardiac Failure that had been previously taught to these students around 6 months ago, the study group was taught using case based learning, whereas the comparison group was taught using a didactic lecture. A pre and post test was done using MCQs for both groups to test the difference between the 2 teaching methods. A 4 point Likert scale questionnaire which contained 6 questions was administered to the students, to know their perception on the usefulness of the CBL. **Results:** The pretest scored scores of the 2 groups were comparable with no significant difference. However, post test scores of the students taught using CBL were significantly higher as compared those taught using the didactic lecture ($p < 0.0001$). 100% of the students in the CBL group reported having found the CBL sessions to be an interesting and motivating method of gaining knowledge, and promoting group discussion. 85% of them also felt that CBL enhanced diagnostic skills, which would be of great help in the future also. **Conclusion:** Case Based Learning is an effective teaching tool in the medical curriculum for a better understanding of Clinical Pharmacology among the medical students..

KEYWORDS: Case based learning, Didactic lecture, Clinical Pharmacology, Shri Sathya Sai Medical College.

INTRODUCTION

Current education system is changing to a student centered teaching-learning process with the use of variety of innovative learning methods that makes the students actively involved in the process of learning.^[1] Consequent to this, students can have a worthier and a knowledgeable learning, wherein the learner is motivated for effective learning rather than just the dispensing of information.^[2] Lot of approaches are available for integrating the basic and clinical sciences. Case Based Learning (CBL) is one such option which can make learning more effective and interesting, Especially in Clinical Pharmacology. The focus of this study is to incorporate CBL in teaching practice in Clinical Pharmacology.

MATERIALS AND METHODS

This cross sectional descriptive study was conducted in the Department of Pharmacology, Shri Sathya Sai

Medical College and Research Institute after getting the Institutional ethical committee approval (IEC No: 2019/490) and informed consent form from the students. A group of 100 students (Based on previous study) were randomly selected and they were divided into two groups.

Pre MCQ test (validated) for both the groups conducted followed by Case Based Learning and Didactic lecture covering the same topic i.e. Cardiac failure and drugs, undertaken. Post MCQ test and Questionnaire based Qualitative feedback for CBL based on Likert scale was obtained and analyzed.

The interventional group was presented with a well defined, short clinical problem (Appendix-I). Subsequently, the students were given the specific learning objectives (Appendix-II) during the next

session, and the case was discussed systematically, taking care to ensure that every student participated in it.

A four point Likert scale questionnaire which contained six questions were administered (Appendix-III).

Appendix-I

Case Based Module (Case Scenario):

A 60-year-old man presents to the accident and emergency department. He reports being progressively short of breath. On Examination: His Pulse rate was 120/min, Elevated JVP, Pedal edema present. His ECG shows sinus tachycardia, and a Tran thoracic echocardiogram performed in the A&E department reveals impaired systolic function, with an ejection fraction of 20%.

Appendix-II

Specific Learning Objectives

At the end of this case based teaching session, the student must be able to:

1. Diagnose the case

2. Discuss the pathophysiological basis of the condition
3. Classify the drugs for the condition
4. Illustrate the mechanism of action of the drugs
5. Enlist the adverse effects of the drugs
6. Outline the management protocol for the case

Appendix-III

Student Questionnaire

Student's perception on Case Based Learning (CBL)

Please give your opinion for each of the following items regarding your experience of learning Clinical Pharmacology using Case Based Learning.

1. Understanding today's topic, CBL session was very useful.
2. Clinical case given in today's class was interesting.
3. CBL session was very important in terms of development of critical thinking.
4. CBL model was useful in future application of knowledge.
5. CBL session motivated you to learn Pharmacology.
6. Promoted meaningful learning and group discussion than the didactic lecture.

RESULTS

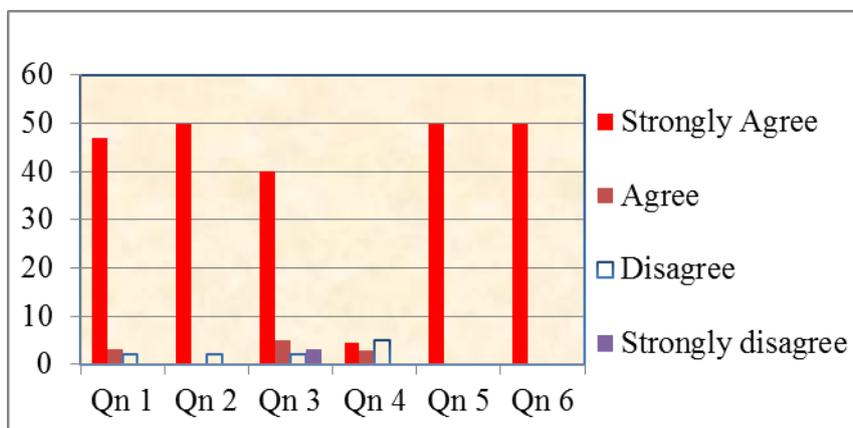


Figure 1: Results of the Questionnaire.

Table 1: Result of MCQ test before and after intervention in both the groups.

p value<0.0001 = very significant

Groups	Pre test (Mean±SD)	Post test (Mean±SD)	p value
CBL	20.22±11.4	36.5±11	p<0.0001
Didactic lecture	16±10.3	26.6±13	p<0.0001

DISCUSSION

CBL seems to be a good method of teaching, on the basis of results of the evaluation test and the questionnaire results, wherein the whole process can be made students-centered. Our results were supported by some of the other medical education researches, which stated that CBL could help in developing an effective learning environment, with the use of specific learning objects.^[4-6]

It proved to be an interesting concept and it helped the students in improving their academic performances, as it helped in developing interest about the subject, as all the students were curious and attentive and it also motivated them to actively participate, with each other

During the study, it was observed that a majority of the students enjoyed and embraced the CBL session and the ones who were not a part of it, also showed interest. It helped them in developing logical thinking, clinical reasoning and diagnostic interpretation.

The results of the current study and the feedback of the students encouraged us in using CBL as a method of teaching, as it had a lot of positive impact on the students.

CONCLUSION

Based on the Likert's scale of qualitative feedback obtained from the students, 100% of them agreed that

CBL is better way of teaching and makes students understand better compared to didactic lectures. It facilitates more interaction between the faculty and students and motivates them for self directed learning and also helps in improving the diagnostic skills

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