

INTRODUCTION OF CASE BASED LEARNING IN OTORHINOLARYNGOLOGY AT UNDERGRADUATE LEVEL OF TEACHING IN AN INDIAN MEDICAL SCHOOL

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ABSTRACT

BACKGROUND

This study was conducted to apply case based learning in undergraduate teaching of otorhinolaryngology at an Indian medical school and obtain the students' perception on this approach of learning.

METHODS

Case based learning (CBL) was introduced in otorhinolaryngology teaching on the current batch during final MBBS part I over a period of 3 months for 5 topics. Students' perception was obtained, then after using a pre-validated questionnaire incorporating responses based on 1 to 5 Likert scale, which were analysed statistically in the form of percentages and proportions.

RESULTS

145 students who had attended all the sessions of CBL participated in the study. More than half of the students enjoyed the CBL method and found it as interest generating with improved attention span. About two-thirds also felt that this method improved understanding, increased retention and were in favour of incorporation of this method in day-to-day teaching.

CONCLUSION

A balanced and well-planned collaboration of traditional and case based learning methods may prove an effective teaching methodology in Otorhinolaryngology at undergraduate level.

KEYWORDS

Case Based Learning, Problem Based Learning, Otorhinolaryngology.

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INTRODUCTION: There has been a growing concern about the quality of medical education worldwide in recent times. The advent of newer techniques and research on many innovative methods of teaching has started modifying medical education in past few years. Conventional lecturing has been in use as a teaching method since even before printing was invented.^{1,2} In conventional lectures students are passive receivers of information and therefore are not actively involved in process of learning.³ Undergraduate medical education needs ongoing improvisation to produce graduates who are able to meet up the day by day increasing demands of health care. Case based or problem based learning is an upcoming teaching technique which may overcome the shortcomings of conventional teaching methodologies. It is students' centred active learning process which uses a problem at the starting point of student learning,⁴ to create interest, assimilate and reinforce basic science knowledge; and, inculcate the simulation of real life situations.

This study was conducted to apply case based learning in undergraduate teaching of otorhinolaryngology at an Indian medical school and obtain the students' perception on this approach of learning.

METHODS: This study was conducted after obtaining ethical clearance and due permissions by introduction of case based learning in otorhinolaryngology teaching on the current batch during part I of final MBBS over a six-month period. Case based learning modules were developed for five common diseases in otorhinolaryngology which were peer reviewed by the faculty members—otitis media, cholesteatoma, rhinosinusitis, neck swellings and Meniere's disease. All these topics were first taught one after another by conventional lecturing in large group to the whole batch in one lecture followed by reinforcement through problem based learning in next teaching session again to the whole batch.

The CBL method was incorporated as a small group teaching method wherein the problem was given to the group and learning was done through group discussions followed by tutorials in supervision of a facilitator. After all the sessions, the students attending all sessions were requested to provide a feedback on the introduction of problem based learning in otorhinolaryngology, using a

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predetermined questionnaire using both closed and open ended questions. The suggestions of senior faculties of the Department of Otorhinolaryngology and a faculty member from the Department of Community Medicine were taken for validation of the questionnaire.

The student's perception on introduction of this new teaching method was obtained through the responses in the feedback. The response scales of questionnaires were designed using Likert scale to eliminate subjectivity ranging from 1 to 5 for each question. The questionnaire consisted of three categories containing different questions. These were regarding interest in the case based learning; advantages and disadvantages of the method over conventional lecture method; and views on incorporation of case based learning in teaching of Otorhinolaryngology.

There were five questions each for the first two categories and suggestions were obtained using open ended questions for incorporation of this teaching methodology for undergraduate teaching of the subject. The questionnaires were then studied and information gathered was organised in Microsoft Excel worksheet to accomplish data entry. The data analysed and tabulated using MS Excel pivot table function. The numbers of students giving different responses against each question in the various categories of the questionnaire were represented in form of percentages and proportions.

RESULTS: 145 students who had attended all the sessions conducted during the study participated in the study. Only less than 10% students did not respond to a question for majority of them, after data analysis.

Regarding Interest in Case Based Learning Method of Teaching:

- i. 79.3% students enjoyed the case based learning.
- ii. 72.4% students felt that this method had increased their interest in the topics taught and made them learn better.
- iii. This method increased the intellectual curiosity of half the students and led to self-directed learning.
- iv. 59.3% students felt that they adequately had an active participation in the teaching sessions.

Regarding Advantages and Disadvantages of Case Based Learning over Conventional Teaching:

- i. 72.5% students felt that this method played role in development of health care skills like history taking and examination, generated interest in the topic and improved retention of subject in 74.5% students; and, improved understanding in 76% students.
- ii. 68.9% of the students were of the opinion that this method improved their attention span.
- iii. 12.9% students were of the view that they could perceive the topics haphazardly in case based learning.
- iv. About two-third students felt this method to be complex and cumbersome although interesting.

Regarding Incorporation of Case Based Learning as Teaching Method: 59.3% students were in favour of incorporation of case based learning in otorhinolaryngology and only 3.5% students were against it. Among the rest, 30% students gave no response and about 7% of them were neutral about the issue.

DISCUSSION: Problem based learning integrates basic and clinical sciences materials and incorporates in depth learning through active participation of learner in coordination with peers and a facilitator. Facts relevant to basic sciences are seen in context of health problems, either real or hypothetical. This serves two goals: to make knowledge more relevant and retrievable, and to foster the development of specific reasoning.⁵ Conventional teaching separates the basic science segment from the clinical segment. Students passively absorb information rather than actively acquire knowledge. Students in problem-based learning programmes place more emphasis on meaning (understanding) than reproduction (learning and memory); the opposite pattern prevails among students in traditional programmes.^{6,7} Students using the problem based learning curriculum (PBL) also place more emphasis on journals and online databases as sources of information; make greater use of the library; make greater use of self-selected reading materials, as opposed to those selected by the teaching faculty; and more frequently feel competent in information seeking skills.⁸ Students of the PBL tend to use a more in-depth approach of learning than students of the conventional curriculum.⁹

Santos-Gomez et al¹⁰ have compared the performances of 130 PBL graduates and 130 graduates of a parallel, conventional curriculum at the University of New Mexico School of Medicine, United States. Graduates from the PBL group received superior ratings than did graduates from the conventional group in the areas of health care costs, communication with patients, and patient education. Data from Australia¹¹ show that graduates from the PBL were rated significantly better than their peers, with respect to their interpersonal relationships, reliability, and self-directed learning. In a survey of Dutch medical schools, the PBL faculty rated their curriculum higher in teaching clinical reasoning, humanistic qualities, and preventive care than did the conventional faculty.¹² The benefits of PBL/CBL methods are that the students are more communicative, show more initiative, and are more positive about preclinical training. They adjust more readily to clinical clerkships, are more likely to ask questions, and seem to have superior independent learning and problem-solving skills.¹³

CONCLUSIONS: Majority of the students enjoyed the problem based learning method more than the conventional lecturing and gathered them to be advantageous in various manners. More than half of them desired that this method incorporated in day-to-day teaching of Otorhinolaryngology as it helped them understand and retain better than the conventional lecturing.

The study sample of students gave a positive response to introduction of case based learning in teaching of the subject at undergraduate level. A balanced and well planned collaboration of traditional and case based learning methods may prove effective teaching methodology in Otorhinolaryngology at undergraduate level.

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