

Training first year undergraduate medical students for better performance in physiology examinations

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Background

Melaka Manipal Medical College (MMMC) (Manipal Campus), India offers a Bachelor of Medicine and Bachelor of Surgery (MBBS) program, which is of five years duration. The first two and a half years are spent in Manipal, India and the remaining in Melaka, Malaysia. The first year curriculum is divided into four blocks as follows:

- Block 1: basic concepts, blood and nerve-muscle physiology
- Block 2: cardiovascular, respiratory, and gastrointestinal physiology
- Block 3: endocrine, reproductive, and renal physiology
- Block 4: central nervous system and special senses

Need for the study

When clinically oriented questions were asked during physiology examinations, it was observed that students' performance was unsatisfactory. It was felt by the faculty that the students' performance was poor as they were not trained to answer clinically oriented questions during the regular teaching and learning activities. It was also felt by the faculty that a deep approach towards learning should be promoted in the students which will enable them to become lifelong self directed learners.

Objectives

The present study intended to train first year medical undergraduates at MMMC to perform better in physiology examinations consisting of clinically oriented questions.

Methodology

Clinically Oriented Physiology Teaching (COPT) was implemented in the first year for one batch of students (experimental group; (n=122), during the third and fourth blocks (teaching units) of physiology curriculum. One batch of students served as the control group (n=122) to whom COPT was not implemented.

COPT was implemented for the experimental group during regular didactic lectures in a large group setting. It consisted of two components: a) clinical case studies b) Critical Thinking Questions (CTQ) (questions which asked the physiological basis for some physiological concepts). After introducing the basic concepts in each system, case studies followed by a series of questions and CTQ were given as student assignments. The answers were discussed in the subsequent classes. This was continued till the end of the block. During the block examination, case studies and CTQ were included. A total of twenty five COPT sessions were held.

The learning approaches of the experimental group of students before and after the implementation of COPT was determined using Short Inventory of Approaches to Learning (SIAL) and the pre and post-COPT SIAL scores were compared. Performance of the experimental group of students in the third and fourth block examinations were compared with that of the performance of the students in the control group.

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Results

Deep and strategic approaches were found to be predominant in the experimental group when compared to the control group. It was also observed that the performance of the experimental group of students was significantly better ($p < 0.001$) when compared to the control group.

Conclusion

The study revealed the importance of teaching pattern falling in line with the assessment pattern as demonstrated by the improved performance of the experimental group of students when compared to the control group. COPT was also successful in developing a deep approach which is the most successful and desirable learning approach.