Combining Lecture and Bedside Teaching Practice in Internal Medicine for 8-Year Program Medical Students

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Abstract

Objective: To explore applications of the lecture-based learning (LBL)-combining-bedside teaching practice mode in the National eight-year internal medicine course.

Method: The combined classroom lecture and bedside teaching mode was selected for analysis. A total of 688 students from the intake years 2004–2008 in the 8-year clinical department of Shanghai Medical College at Fudan University were chosen for this study. Their evaluations of this teaching mode were collected through a questionnaire, and the data are described and analyzed in this paper.

Results: The results show that 100% (653/653) of the students were satisfied with this teaching mode, and thought that their comprehensive ability and self-learning ability had been improved through bedside teaching; 93.7% (612/653) believed that the lectures were preceded according to the normal order of teaching, and they enhanced the role-awareness of doctors, increasing their regard for their occupation. On the other hand, 62% (405/653) of the students thought that the class order was uncoordinated, and that the theoretical lectures and bedside teaching could not be synchronized. But this problem was not influent students’ interests noticeably and we tried hard to solve it.

Conclusions: The LBL-combining-bedside teaching mode has a good reputation among students and is worthy of further promotion.

Keywords: Internal medicine; bedside teaching; LBL teaching

Introduction

The development of medical education and the globalization process in medical science force us to self-examine and reform the existing domestic education system and teaching modes in the profession. 8-year program clinical students would be trained with these curriculums: public basic courses for the first two years, basic medicine and clinical medicine courses the following six years, and the last 3 years focus on the clinical training as well as scientific research training. At the Third China Summit of the 8-year Medical Education system in 2006, some experts pointed out that students trained in the 8-year system should have a strong clinical skills and preliminary scientific research ability, so that eventually they could become clinical specialists with a strong innovation capacity and the ability to compete internationally [1]. Therefore, it became of great urgency to establish a suitable teaching mode to achieve this outcome. The Department of internal medicine at the Shanghai Medical College of Fudan University took the lead in the reduction of theoretical class sessions in the teaching of internal medicine for 8-year medical students, and clinical novitiate was cancelled. Instead, clinical novitiate changed into bedside teaching, in which case-based learning (CBL) was carried out, but the teaching time and content of the clinical training remained unchanged. Thus, the lecture-based learning (LBL)-combining-bedside teaching practice mode was established. After a 5-year period of refining, summarizing and improving methods and content, this teaching mode has obtained very good results. It is examined in this paper.

Object of Study: Teaching Mode

Object of study

All the 688 8-year program clinical students at the Shanghai Medical College, Fudan University from the classes of 2004 to 2008 surveyed, who were assigned into 5 batches for 5 years to experience CBL-based bedside teaching combined with theory classes. Each year, about 135 students in each group went to the medical wards of Fudan University Zhongshan Hospital and Huashan Hospital (Huadong Hospital was added 3 years ago) to have bedside training.

With theoretical lectures and bedside teaching carried out at the same time, the two-semester theoretical lectures plus demonstration mode was changed into a mode incorporating half-day bedside and half-day theoretical classes within a total of about 9 weeks of instruction. Subsequent teaching was basically bedside teaching in the ward of each department in the morning, followed by theory lectures in the afternoon. The lectures were preceded according to the normal order of teaching, result in the lectures and bedside teaching conducting unsynchronized. The bedside teaching instructors would hold a seminar before each bedside teaching to make students to master relevant knowledge of the disease.

Full-time instructors were specifically arranged to teach and lead bedside teaching. Each batch of students were divided into six groups each hospital with about 10 in each group, and went to every department to learn in rotation.

The main contents of bedside teaching include patient history taking, recording the physical examination and exercises, analyzing and discussing of the patient history, and examining and teaching the operations required. This approach mainly lets students have a more emotional understanding of their knowledge of internal medicine. The common and key teaching cases of each department are determined according to the curriculum of the internal medicine course. In each case, the teacher can choose 1–2 typical patients to study and discuss using the CBL method. Every 5 Students of the group interview the patient, physically examine them, summarize their history characteristics, diagnose, differentially diagnose and propose suitable treatment methods together. Instructors, based on student performance, combined with the contents of theoretical lessons (basic knowledge and other disciplines), give guidance, analysis and summaries to help students master the clinical features and treatment principles of a disease.

The bedside teaching atmosphere is open and free to encourage students, according to the requests and questions of the particular medical case, to use journals, the Internet and other media to search references, then to analyze the case and its problems, and/or to find new problems. Before the end of each course, students can prepare slides to express their own views when they conducted cases discussion. Each student should write two copies of a patient history and give one copy to the training instructor.

Assessment

Multiple-way and different-angle assessments of students is carried...
out using methods combining theoretical examination and practical assessment. The theory examination is conducted at the end of theoretical lectures accounting for 70% of total marks. The practical assessment is carried out during bedside teaching and the assessment of clinical teaching. The usual performance refers to disciplinary questions, asking about medical history, conducting physical examinations, and question answering during discussions during bedside teaching, accounting for 30% of total marks. A portfolio is established for each student, and the training teacher scores in a timely manner at the end of each set of teaching topics to ensure standardization, normalization of clinical skills learning, and grasp of the main concepts. An assessment of their clinical thinking is mainly carried out to check students’ ability to grasp basic knowledge.

The evaluation and data processing methods

At the end of the course in each academic year, students are surveyed using questionnaire designed by the teaching sections. Students reply anonymously, with an average response rate of 95%. Analysis and statistics could be obtained from these questionnaires for the total 5 years of study.

Results

Overall satisfaction with the teaching mode reform

The results show that 12.4% (81/653) of the students thought that this teaching reform was very satisfactory, 43.6% (285/653) thought it was satisfactory, 43.9% (287/653) were fairly neutral, but no student was dissatisfied.

Benefits of the teaching mode reform

Compared with the other theoretical teaching mode such as lemmology, 100% (653/653) of the students thought that bedside CBL teaching would improve their comprehensive ability and self-learning ability, 93.7% (612/653) believed that would help improve their learning interest, 93.4% (610/653) thought that it would help improve their understanding of diseases, 97% (633/653) believed that it was helpful in improving their diagnostic and differential capabilities, 100% (653/653) thought bedside teaching is helpful in improving their understanding of diseases, in improving their writing skills and in the strengthening of their confidence to interact with patients, and 90% (588/653) of students believed that the reform of the internal medicine science course enhanced the role awareness of doctors and their appreciation of their career. In terms of learning methods, 81.2% (530/653) of the students believed that, in bedside teaching, they could achieve the greatest gains through asking about medical histories and undertaking physical examinations by themselves, 50% (326/653) thought they had the greatest gains through active participation in discussions, and 18.7% (122/653) believed that they had the greatest gains from self-study materials or extracurricular books.

Defects of the teaching mode reform

Because the theory classes under CBL were shorter by 20 hours than the previous ones, some students thought the schedule was tight. In this regard, 8% (52/653) of the students recommended that the theory class times should be appropriately increased while maintaining the bedside course, 10% (65/653) of students requested some more bedside teaching, and a tighter class arrangement, and 62% (405/653) thought that the in-course order was uncoordinated, and that as a result theoretical lectures and bedside teaching was not synchronized effectively. But this problem was not influential students’ interests noticeably.

Discussion

The learning requirements of internal medicine are, with basic medicine theory as the foundation, to obtain knowledge of treatment techniques and methods through practice. The teaching purpose of the internal medicine course is to guide medical students, building on previously mastered basic medicine and basic knowledge of pre-clinical disciplines, to enter practice from theory and to start clinical diagnosis from books, while helping them to acquire practical skills to treat patient diseases.

The traditional teaching methods of internal medicine are based on LBL, in which the teacher leads the whole process and students can only passively accept knowledge. Students are then without the enthusiasm gained from active thinking, passing exams by rote, and are basically without training in clinical problem-analysis and problem-solving ability during the entire teaching process [3]. Bedside learning can fully stimulate medical students’ self-learning ability and their ability to use knowledge, and has been successfully used to good effect in many medical schools in the United States and Europe [4]. However, the effect of bedside teaching only is not 100% satisfactory, because students cannot easily keep up with the rhythm of following studies, and eventually lose interest in learning, if they do not master a certain basic theoretical knowledge. Combining theoretical lectures and bedside teaching in the one mode of delivery can take into account these deficiencies and allow improvements. Through implementation of the LBL–bedside teaching mode, students can get in touch with live patients while acquiring theoretical knowledge. They can personally participate in the case analysis, discussion and decision process to propose a treatment plan, consider the diagnosis and treatment of diseases in a clinical thinking mode, and master and connect the contents in a holistic way to enhance memory on the one hand to mobilize their initiative. This process inspires students to think comprehensively to train their clinical thinking ability.

Implementation of bedside teaching also provides a very good learning and improving opportunity for teachers. Nearly 80 young teachers in total have been trained to be familiar with bedside teaching and CBL within the Department of Internal Medicine in Shanghai Medical College of Fudan University over the past 5 years, which has laid the foundation for the more effective implementation of education reforms.

However, the LBL-combining-bedside teaching mode has also brought new challenges for both students and teachers. Because the theory course and bedside teaching mode cannot be completely synchronized, students are required to prep to a significantly higher level. Initially, it was thought that the biggest advantage of bedside teaching was that it could effectively use student’s practical work time to make their classroom time more efficient [5], but it turned out that it also created a huge burden on students when they had to master a great deal of content in a short time. Teachers, apart from the serious preparation of teaching material, the writing of medical records, and the design of medical cases and issues with a high sense of responsibility for the requirements of training, will also spend considerable extra time on tasks such as revision of medical histories collected by students, supporting consulting with students via telephone and SMS or email, watching for changes in student moods to comprehensively care for and protect them, and maintaining full communication with students. Teachers also need to constantly enhance their own learning to improve their own level of expertise [6]. Only then can they effectively implement bedside teaching.

In summary, during the bedside teaching process the clinical program is made more real, which helps students to achieve a change from the disease-to-symptom textbook thinking mode to a symptom-to-disease clinical thinking mode as soon as possible, thus improving their ability to solve clinical problems. The LBL-combining-bedside teaching mode is therefore worthy of further popularization.

References


