Application of PBL Teaching Mode Combined with Traditional LBL Teaching Mode in Oral Anatomy and Physiology

Xin-Feng CHANG\textsuperscript{a}, Zheng-Chun HUANG\textsuperscript{b}, Hai-Qian ZHOU\textsuperscript{c} and Chun-Hua SONG\textsuperscript{d}

Gannan Medical University, Jiangxi Province, China

\textsuperscript{a}8953587@qq.com, \textsuperscript{b}937606589@qq.com, \textsuperscript{c}1197945580@qq.com, \textsuperscript{d}41313435@qq.com

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Abstract. Oral anatomy and physiology is the main course in the basic learning stage of stomatology which not only provides a solid theoretical knowledge for clinical subjects but also a basis subject for students to learn the following courses. Improving the quality of oral anatomy and physiology will have a profound impact on the students who major in stomatology. In the teaching practice, we try to combine the modern PBL (Problem-based learning) teaching method with the traditional LBL (Lecture-based learning) teaching method to improve the initiative and enthusiasm of students to study this course, thereby improving the teaching effectiveness of the Oral anatomy and physiology and lays the foundation for the study of other medical courses.

Introduction

Oral anatomy and physiology is a discipline that studies the normal morphology and physiological functions of human oral cavity, maxillofacial and neck parts. It is one of the basic courses of stomatology, and lays a foundation for the following oral professional courses. The course involves many nouns, complex structures, and unfamiliarity parts, which makes students daunting. In teaching section, students should not only master the basic theoretical knowledge of head and face anatomy, but also need connect it with oral clinical practice through practice. At present, the facing problem of oral anatomy and physiology is how to simplify the knowledge of complex ideas to improve the initiative and enthusiasm of students' learning thereby improve the leaning efficiency. To lay a good theoretical foundation for future clinical course learning, we have added the PBL teaching method in the traditional LBL teaching method, giving full play to the initiative and enthusiasm of students in the classroom teaching, cultivating and improving students' learning ability in basic subjects.

The Necessity and Problems of Traditional LBL Teaching Method in Oral Anatomy and Physiology Teaching

LBL teaching method is a traditional teaching mode widely used in Chinese universities. This model is based on the teacher, teacher taking lectures as the center, focus on the lecture and giving infusion teaching. The LBL teaching method is suitable for the current situation of education in China and has the following advantages: (1) Saving teaching resources: A teacher in LBL can teach dozens or even hundreds of students at the same time, which effectively saves the teaching human resources and meets the actual situation of shortage of teachers in China. (2) The imparting of knowledge is accurate, systematic and coherent: LBL teaching mode makes teachers take the leading position of classes, so that teachers can comprehensively and systematically analyze and explain the contents of the books. It can not only impart knowledge to students accurately and quickly, but also guarantee the systematic and coherent nature of transfer of knowledge. (3) Establish standardized procedures for teachers' teaching and student's learning assessment to facilitate university management. (4) Suitable for most students. The LBL teaching method is based on teachers. The quality of teaching and the atmosphere of the classroom are mainly determined by the teachers. Therefore, the teachers can take
care of the acceptance ability of the vast majority of students, and the knowledge will be explained in a simple way, meanwhile, the teaching tasks will be completed on time.

At present, most oral anatomy and physiology adopt this teaching mode. In the actual teaching process, we found that there are some defects in the LBL teaching method: (1) It is not conducive to mobilizing students’ enthusiasm for learning. In this mode, teachers are always the dominant position of the classes. To complete the teaching task, some of the teachers even try to implant the boring concepts to students gruffly during the whole teaching process. Furthermore, oral anatomy and physiology learning content are dull and complex which make students feel boring and hard to understand. Therefore, some people call it “infusion” teaching. (2) Ignore the creativity of students in learning, in this teaching pattern, students have to receive the knowledge passively, teachers replace students to think and solve the problem so that students lose the ability of handling problems. Students have dependence on teachers when they encounter problems. Therefore, students lose the ability of handling problems gradually and become more and more dependent on their teachers when facing cases that many people call it “cramming” teaching. (3) The LBL teaching method focuses on the explanation of knowledge points, which can make students only focus on how to pass the exam easily, but don’t know how to application of knowledge [1].

The Necessity of Introducing PBL Teaching Method in Oral Anatomy and Physiology

The PBL teaching method is a learning process of research around a certain problem, with students as the main participation, in the form of group discussions, and with the involvement of tutors to solve a certain problem. It can fully mobilize the enthusiasm and initiative of students, and cultivate students' self-learning and thinking ability, analyze and solve problems independently. Dr. Howard Barrows, a professor of neurology at the United States, founded the PBL teaching model at McMaster University in Canada in 1969 [2]. By 1983, Dr. Henk Schmidt began to advocate the use of the PBL model in medical education as a supplement to traditional teaching. PBL is one of the mainstream models of Western medical education, it is gradually spreading to the world.

The implementation of PBL teaching method mainly includes: (1) design problems. Design issues are a key procedure of the entire PBL teaching. The level of problems designed by teachers directly affects the learning outcomes of students. (2) Set up a study group. The study group is the main body and center of PBL teaching. The team members should be divided into different tasks and be responsible for different tasks within the group. (3) Class discussion. After each study group completes the discussion and forms a solution, the teacher gathers the students and discusses them collectively. Each group sends representatives to present the group's views, and then the teachers summarize them to form the final result. Throughout the process, he teacher is no longer the deliverer of knowledge, but the instructor who guides the students through the discussion to achieve the intended learning objectives, and urges the students to apply them in a friendly, harmonious manner.

The introduction of PBL teaching mode in oral anatomy and physiology has the following advantages: (1) Improve students' ability of independent innovation. The PBL teaching method is student-centered and guided by teachers. Students solve problems by finding information and discussion, this maximizing students' self-learning ability and effectively developing students' potential and creativity. (2) Mobilize the enthusiasm of students to learn and improve the ability of students to cooperate and communicate. In PBL teaching, students no longer memorize those knowledge points only, but explore the core of the problem. There are both self-directed learning out of the class and group discussion in class. In this way, students’ enthusiasm of learning is aroused, while the skills of teamwork and communication are improved. (3) Improve the ability of students to combine theory with practice. PBL teaching is a practical learning from the perspective of cultivating clinicians. The lectures are based on clinical cases, and the points of basic and clinical subject knowledge are integrated into a real case. At the same time, the diagnosis and treatment centered on divergent and lateral thinking, which greatly improved the ability of students to combine theory with practice. PBL breaking the boundaries of the discipline and improve the ability of synthesis utilization knowledge.
PBL teaching has been introduced into China for more than 20 years, more and more medical colleges have begun to apply this method. However, the limitations of the PBL teaching method itself and because of the traditional teaching methods have been practiced in China for a long time, so there have caused some problems in the implementation of the PBL teaching method: (1) The demand for teachers has increased, resulting in insufficient teacher resources. PBL is a teaching method that requires high qualified teachers. Teachers must not only have a high level of professional knowledge, skills and a wealth of relevant knowledge of clinical interdisciplinary, but also have a strong knowledge of comprehensive ability and organizational leadership. At present, there are only a few teachers with PBL execution ability in China. (2) Oral anatomy and physiology belongs to the basic discipline of oral profession, and the students' clinical medical knowledge is relatively scarce, which brings certain difficulties to their study and discussion. (3) The traditional teaching method directly passes many empirical knowledge to the students, and the PBL requires the students to explore it for themselves, so that students spend more time on a problem, which may be aggravated under the heavy workload of the class and the burden of the student. At the same time, PBL canceled the teacher's systematic lecture, which is not conducive to students mastering the complete medical basic theory, the basic knowledge may not be solid [3]. (4) Contradictions with traditional Chinese teaching models. The traditional mode of in our country is “teachers teach, students listen and take notes in class, class notes back to teacher after class”. Due to the variability and flexibility of the PBL itself, some teachers, especially older teachers, PBL is unacceptable. For students who have received traditional education from an early age, they suddenly feel that they are at a loss as to the PBL, a teaching method that is entirely at the core of the learning process.

Application of PBL Teaching Combined with LBL Teaching in Oral Anatomy and Physiology

There are many conceptions of oral anatomy and physiology, but the teaching time is relatively tight. The single teaching mode is difficult to solve the problems in teaching. Therefore, to adapt to the current teaching environment in China, we must combine the two modes. The existing research suggests that the simple PBL teaching in oral anatomy and physiology can improve students' ability to analyze and solve problems, but in the assessment test, the subjective questions are greatly improved, and the objective questions are not significantly improved [4]. The combination of the two methods is more effective in the medical and anatomical teaching than the LBL teaching method or the PBL teaching method. The examination results are higher and the students' recognition is higher [5].

We recommend the combination of the two, regard LBL teaching as priority, interspersed PBL teaching as chapter need. Oral anatomy and physiology is a basic subject. There are a large number of medical terms that students have not touched. Teachers' lectures can provide students with correct references and get the right knowledge in the shortest time. On the basis of having the right knowledge, students can quickly identify the problem if they are exposed to the case, and the discussion will be more targeted. At the same time, students are encouraged to combine the basic knowledge of oral anatomy with clinical applications. The combination of basic knowledge and clinical application provides a better understanding of boring anatomical terms and enhances their ability to solve clinical problems. The PBL based on LBL increase the students' enthusiasm for learning improved, also significantly improve the learning efficiency. It not only improves the LBL's boring “cramming” teaching mode, but also avoids the limitations of knowledge. At the same time, the two kinds of teaching mode complement each other's advantages and achieved the purpose of improving the quality of teaching.

PBL teaching combined with LBL teaching also needs to pay attention to some problems: oral anatomy and physiology as a basic subject, not all chapters are suitable for PBL teaching, combined with the characteristics of this subject, appropriate to join the PBL teaching, according to the requirements of the syllabus and the total number of teaching hours to develop a teaching plan, it is necessary to ensure the smooth completion of teaching tasks and to improve students' interest in learning. At the same time, it is necessary to continuously improve the quality and teaching skills of
the instructors themselves constantly. In addition to being familiar with the content of the subject, the teacher must also acquire the knowledge of the relevant disciplines and have the ability to ask questions and solve problems.

Summary

All in all, traditional LBL teaching mode and PBL teaching mode have certain advantages in oral anatomy and physiology teaching while there are still some shortcomings. Therefore, we should combine the LBL teaching method with the PBL teaching method. Under the premise that the teachers fully explain the relevant professional knowledge and students’ corresponding knowledge storage can be completed. In addition, students proper learning of clinical cases, the PBL teaching can be successfully completed. While solving the problem, we can exercise the students' comprehensive ability to achieve the best teaching effect, thus providing new ideas for the reform of oral anatomy.

References


