A Reform and Exploration of the Stomatologic Practice Teaching Model

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Abstract: With the purpose to cultivate students’ stomatologic clinical technique and practical working ability, promoting their knowledge, capacity and quality, we have constructed a new integrated, multi-module practice teaching model based upon the excellent course, the improvement of teaching method and the concept to enhance students’ clinical practice ability. As a result, students’ stomatologic clinical technique and practical working ability have been elevated.

Keywords: Stomatology, Teaching model, Practice teaching, Module

1 Introduction

Medicine is a practice of science, the practice feature of stomatology is more prominent because of its professional particularity, and therefore it is of great importance for us to make good use of the excellent course, selecting the teaching content carefully, improving the teaching method and elevating students’ clinical practice capacity. In this way, students’ basic theory, basic knowledge and basic skill can be turned into the independent ability to deal with the patients and, obviously, it is an important stage for them from being medical students to clinical doctors [1].

At present, the stomatologic teaching model in our country basically follows the biomedical model, knowledge being inculcated and teaching being segmented, that is, the biological characteristics of human body and the knowledge-inculcating are simply stressed, which evidently lack the organic interface between the basic and clinical, the medicine and oral cavity, the theory and practice. [2] In clinical teaching of stomatology, the big class is conducted first in which much time has been spent in teaching students the basic clinical theory instead of the clinical course, while less time has been spent on lectures, discussions and actual practice. Consequently, the majority of students are busy underlining the focal points in books, leaving no time to actively raise questions and discuss something. They even mechanically memorize the knowledge before examination so that it is very easy for them to forget what they have learned. In addition, due to the limitation of class hour, the operation on models in the lab is restricted; each student can practice only once in many operations, no opportunity is left to improve the emerging issues. The result is that the practical ability of students is poor; the innovative spirit is insufficient which will definitely affect the clinical practice in future.

Therefore, how to cultivate students’ stomatologic a clinical technique and practice skill is an urgent task confronting the stomatologic education. However, there are requirements of “Five First-class” in the excellent course, which are: the modern education concept taking the lead; high quality teachers being the premise; excellent textbooks adapting to the corresponding levels being the core; modern educational technology being the platform; the optimized teaching content and innovative teaching methods being the base; the high quality curriculum system being protected by the scientific and standardized management system. Accordingly, we have carried out the research of practice teaching and the improvement of teaching methods, as a result, a new integrated, multi-module practice teaching model has tentatively been constructed by depending upon the excellent course, with different curriculum and content, taking the cultivation of students’ capacity of analyzing and solving problems as the center.
2 The Reform of Stomatologic Practice Teaching Model

2.1 The experiential learning—establishing early professional awareness, organizing social practice for junior students

There is almost no stomatologic course for students in grade one or grade two under the traditional stomatologic education model so that they do not know what they should learn while in university, even do not know how to prepare for their future work. With the purpose to let students understand their profession, contacting the clinical and patients earlier, we have added stomatologic lectures for freshmen in their initial education, leading them to visit the stomatologic laboratory, opening An Introduction to Stomatology class for first grade students. Moreover, through students association—stomatologic society, we have yearly organized junior and senior students to go to the community, school and enterprise for their social practice in “9·20 Loving Teeth Day” and “Children’s Day” to carry on the oral health examination, popularizing the health prevention and consultation. During the summer vacation the freshmen and sophomore are required to visit the stomatologic hospital or clinic in their hometowns. When they are back to school, they are arranged to have discussions, introducing each other what they have learned upon visit and the issues they have discovered, therefore, students can be guided to contact the clinical as early as possible, forming the awareness of being a stomatologic doctor and knowing their study goal more clearly. In addition, through this kind of practice, students can have a preliminary understanding of their profession, developing an interest in learning, hence, laying a better foundation for future practice teaching.

2.2 Autonomous learning—case-centered theoretical teaching

In the third and fourth grade, the stomatologic students enter the stomatologic clinical theoretical learning stage, they are offered a number of carefully designed simulated (real) cases by teachers according to the content from the textbooks, but closely related to clinical common disease and frequently-occurring disease together with the introduction of PBL teaching model. Meanwhile, students are required to check out the information themselves, putting forward the clinical diagnosis, identifying the diagnosis and treatment etc. based upon their basic knowledge and the understanding of textbook. As to frequently-occurring disease, for example, we have offered students a case when teaching the teeth extracting adaptation and contraindication, that is, a female patient at the age of 63, her second premolar \( \text{II}^\circ \) in the right mandible is loose, the ECG shows her left anterior fascicular conduction blocks, but she wants to extract her tooth. Facing this sort of case, what shall we do? When teaching the dental trauma, another case is provided for students, that is, a girl at the age of 12, fell down accidentally two hours ago, resulting in the loss of right upper anterior teeth, a small mount of bleeding, the dislocation of the right upper central incisors, the labial gingival being torn with small oozing of blood, but the rest of her teeth being firm with normal occlusion, the fallen teeth being flawless, the apical foramen completing the growth. To this case, students are requested to propose the diagnosis together with its foundation, the treatment design and the impact on the prognosis of the teeth since the time for treatment would be different from the girl’s trauma. The similar teaching process is also implemented in other major courses such as Dental and Endodontics, Oral and Maxillofacial Surgery, Prosthodontics etc. Therefore, students initially go to the library, reading reference books and related literature with problems, or inquiring online through the internet, after that, students are invited to answer questions or discuss issues at the teaching platform, thus, their knowledge has been consolidated and enriched, their ability been trained and their capacity of analyzing and solving problems being cultivated.

2.3 Simulation-based learning—experimental teaching based on head simulator

In the clinical course of stomatologic learning, there is a large proportion of experimental course in teaching contents such as Dental and Endodontics, Prosthodontics, Oral and Maxillofacial Surgery, Periodontology, etc. In the process of establishing the excellent course, we have expanded and reconstructed the existing laboratory, setting up an ideal head simulator experimental teaching system.
and multimedia interactive system with which students can be provided with various dental preclinical trainings in clinical skills since they can not only search the excellent course website, but also be trained in the laboratory with the head simulator to study the skills as Dental and Endodontics, Periodontology, Prosthodontics, Orthodontics, Oral and Maxillofacial Surgery, etc. Besides, teacher teaches students through multimedia network with simultaneous monitoring, thus, the interaction is carried out between teacher and students, the experimental teaching is standardized, the teaching efficiency is enhanced and the operational differences due to the different groups with different teachers are avoided. Through the integration of teaching contents, students can, upon one tooth, deal with the pit and fissure sealant technique, dental cavity preparation and filling, pulp opening, root canal therapy, etc. Apart from that, students can also be trained with the comprehensive experimental teaching such as casting abutment preparation, loose repairing, fixed-bridge design, modulus, making etc. In this way, students’ practical ability has been strengthened, the teaching cost can be saved, students are enabled to form a concept of clinical treatment sequence, definitely, the practice teaching effect is improved.

2.4 Interactive learning—lectures before practice and stomatologic clinical skill training
The stomatologic students come into the clinical practice in the fifth grade which is a transformation process from the operation on head simulator in the laboratory to the operation on the real patients so that students, both in psychology and in clinical operation skill, need a good transition stage. Though they have been strictly and systemically trained when in university, they have not really gone into the practice so that a sense of paralysis exists among them ideologically and they can not effectively apply the theoretical knowledge into the clinical practice. If students directly enter the practice stage, they may be at loss facing the patients, additionally, with the complication of current health care market and frequently-occurring doctor-patient disputes, their invisible pressure in practice is increased. Students do not have the medical licensing due to many reasons; therefore, it would be more difficult to give patients the initial diagnosis and treatment in order to achieve the learning objective. This suggests that in the early teaching process, students should be trained to master a broad range of professional theoretical knowledge, proficient clinical skills and skilled reception art so as to have a smooth transition to the clinical practice. According to what the clinical teachers have told us, there are mainly three issues in students’ practice (1) In the face of a patient, they do not know how to ask for details of his medical history and effectively guide him to answer related questions; (2) The medical documents, the medical records in particular are not written in standard; (3) Students do not treat patients with love concept, even some individual students would laugh facing the dental patients with pain which is not conducive to the harmonious relationship between doctors and patients.

It is quite necessary to train students the reception art, intensive professional skill training and occupation moral education in order to enable them to play the internship role as soon as possible before the clinical practice, therefore, we have established a stomatologic clinical simulation laboratory which is completely simulated a stomatologic outpatient environment, students are divided into different groups and guided into doctor-patient diagnosis and treatment of simulated interaction under the topic “Assuming you are a patient or a doctor, how will you reflect on the upcoming dental behavior?” The teacher with rich clinical experience teaches students the professional morality, reception art; common problems in treatment and matters need attention. Meanwhile, the teacher also offers students in advance some main claims about inquiry history and related content combined with the stomatologic examination model. Several diseases being possible to consider are also proposed, for example, a male at the age of 28, the right posterior aches on hot food for one month; a female at the age of 38, two left mandibular buckle skin fistula repeatedly swelling and aching for two years; a male at the age of 65, a full denture wearing for one week, but having mucosal pain for two days etc. Through these kinds of practice, students should fully realize that obtaining the trust of patients, understanding, supporting and smoothly receiving the patients are the initial part, but one of the important parts in practice process. Elegant appearance, patient attitude, language of love, serious and skilled interpretation, etc., all these contribute to building the trust of patients. Moreover, collecting detailed medical history, carefully
examining patients so as to complete the treatment process successfully can also enrich writing the content of medical records. Some students with dental disease have been selected as simulated patients, then, according to the actual characteristics of clinical operation, they all do the simple operations under teacher’s guidance, for example, superficial caries treatment, supragingival scaling, dental local anesthesia, dental impression etc. In this way, students can be taught to master the correct treatment position, the surgical procedures and the use of pivot, the mouth mirror as soon as possible. So far students have finished learning all the theoretical courses, experienced simulating practice and possessed certain ability to analyze and solve problems, nevertheless, but they still have not fully formed the idea of how to apply knowledge into clinical thinking. According to the common problems of students, we have held special lectures and case analyses, the lecture content and case information have been distributed to students in advance together with relative questions, requiring students to check the information with problems and discussing them with teachers. This type of interactive learning has changed the method of “teacher speaking and asking all the time”, which helps to improve students’ comprehensive quality, flexible medical thinking mode and the ability of dealing with problems.

2.5 Stimulating learning—work exhibiting and clinical skills competition

The main features of stomatologic practice teaching are, by using various materials, to repair and treat the disease of dental and endodontic (for example, caries filling, root canal therapy, etc.), making tooth and various restorations of dentition defect. The quality of root canal therapy and production of restorations reflect students learning of the practice teaching. In order to arouse students’ interests in learning, we have shot the tooth with root canal therapy done in the laboratory by each student, regarding it as the evaluation index of experiment performance. Besides, we have held students’ clinical skill competition and work exhibiting via students association, for example, carving teeth, snap ring bending, complete denture tooth arrangement, cavity preparation, etc. The completed works have been displayed, assessed by professional teachers and certain awards have been offered, this kind of practice plays an important role in cultivating students’ innovative thinking and practical capacity.

3 Conclusion

The stomatologic education has been constantly reformed and improved with the development of stomatology. Cultivating students to master the basic operations of clinical treatment for common disease, the basic skills and the diagnostic ability occupies a very important position in the whole teaching process. Moreover, it is of great importance to reform and innovate the methods of stomatologic practice teaching since it can guarantee the quality of stomatologic teaching, deepening students’ understanding of the theoretical knowledge, training their clinical judgment ability, enhancing their practical capacity, laying a solid foundation for their clinical practice and the work after graduation.

Acknowledgement:
The paper is the research result of the individual member subject in China Association of Higher Education (2011HYZX006).

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