

Discussion on the Course Construction of Hierarchical Introduction for Medical Cases of Pyreticosis Treated by Traditional Chinese Medicine—Taking Hainan Medical University as an Example

Kai Li^{1,#}, Xian Wang^{1,#}, Chang Liu¹, Jingyu Zhao¹, Yinglian Liu, Mi Li¹ and Yiqiang

Xie^{1,*}

¹School of Traditional Chinese Medicine (TCM) of Hainan Medical University, Haikou 571199, China

[#]Kai Li and Xian Wang made the equal contribution to this paper.

*Corresponding author. E-mail: xieyiqiang@hainmc.edu.cn

ABSTRACT

Medical cases could improve the ability of Traditional Chinese Medicine (TCM) students in clinical treatment based on syndrome differentiation. Nowadays, medical cases teaching is not systematic or curricular. In order to improve students' clinical thinking ability and TCM clinical skills of syndrome differentiation and treatment, the team innovatively proposed the construction of hierarchical introduction for TCM pyreticosis cases. Based on this, a special medical cases course is set up for students by writing systematic and curricular medical cases. The inclusion criteria of cases, the hierarchical criteria and the teaching objectives of each level were defined. Finally, through teaching practice, it is found that medical cases curriculum construction could improve students' ability of clinical diagnosis and treatment of fever and their level of clinical syndrome differentiation and treatment.

Keywords: Traditional Chinese medicine; Medical cases; Pyreticosis; Curriculum construction

1. INTRODUCTION

The School of Traditional Chinese Medicine (TCM) of Hainan Medical University is a pilot unit for the reform of education and training plan for outstanding doctors (TCM) in China. The curriculum construction with distinctive TCM characteristics aimed at improving clinical skills is an important content of the reform of education and training plan for outstanding doctors (TCM) in the school. Febrile diseases are the dominant diseases of TCM. There are many discussions on pyreticosis in the existing four classic courses of TCM. Combined with the important role of TCM in Corona Virus Disease 2019 (COVID-19) epidemic this year, the team has been planning to carry out the course construction of *Introduction to The Hierarchical Medical cases of Traditional Chinese Pyreticosis*, and the relevant contents are discussed as follows:

2. CURRICULUM CONSTRUCTION BACKGROUND

2.1. Pyreticosis is the Dominant Diseases in TCM, But There is Currently a Shortage of Specialized Courses on Pyreticosis

The treatment of febrile diseases has been an advantageous field of TCM since ancient times. From *Huangdi Neijing, Treatise on Febrile Diseases* and *Synopsis of the Golden Chamber* to the school of febrile diseases during the Ming and Qing Dynasties, the research on the etiology and pathogenesis of pyreticosis and the treatment have run through the whole timeline of the development of TCM [1]. In *Huangdi Neijing*, a great deal of time was spent on discussing the etiology, pathogenesis, clinical manifestations, treatment principles and prognosis, etc of pyreticosis. For the first time, the theory of pyreticosis with external infection was systematically summarized, which not only discussed the pyreticosis with external infection but also involved the pyreticosis with internal injury, giving a relatively comprehensive diagnosis, treatment and outcome of pyreticosis. *Theory of Heat*,

Thorn Hot, Theory of Evaluation of Pyreticosis in Plain Questions and *Febrile Illness in Miraculous Pivot* are all devoted to the diagnosis and treatment of pyreticosis. Nine of the famous "Nineteen pathogenesis" in *Plain Question* are related to fire. The *Treatise on Febrile and Miscellaneous Diseases* has a relatively complete system of syndrome differentiation and its treatment of exogenous febrile diseases have risen to the height of syndrome differentiation system. *Treatise on Febrile Diseases* differentiated the six channels in the treatment of pyreticosis and creates a precedent in the treatment of exogenous febrile diseases based on syndrome differentiation. *Synopsis of the Golden Chamber* also discussed dampness pathogen, Ye disease, Yin-Yang toxin, lily disease, lung carbuncle and other febrile diseases. By the Ming and Qing Dynasties, the epidemic febrile diseases school contended and gradually perfected and established a complete system of differentiation of syndrome differentiation of Weifen, Qifen, Yingfen, and Xuefen, and syndrome differentiation of Sanjiao theory[2]. In the treatment of pyreticosis were often used resolving superficialities with pungent and cool natured drugs, clearing Qifen with cool-natured drugs, clearing Yinfen and cooling blood, nourishing Yin and add liquid and so on. On the basis of the above, with the purgation method, promoting blood circulation for removing blood stasis, and removing phlegm. Thus, the above methods were used to "Protect the place where the disease has not been harmed" to cut off the course of the disease and achieve the effect of both manifestation and root cause [3]. The content of pyreticosis in the four classic courses mentioned above is the focus of each course, but the content is too scattered and there is no specific course of pyreticosis to summarize and improve the clinical application of the content of pyreticosis in the classical courses mentioned above.

Since the outbreak of COVID-19 in 2019, TCM has been actively involved in the prevention and control of COVID-19. The main symptoms of COVID-19 are fever, dry cough and fatigue which belong to the scope of TCM plague[4]. During the treatment of COVID-19, TCM can make targeted treatment according to the course of the heat pathogen. For example, the method of clearing away heat pathogen and dispersing heat pathogen should be used when heat pathogen makes inroads on body surface, and the method of combining clearing away heat pathogen and restoring lung function should be used when heat pathogen obstructs the lung. Beyond that, TCM treatment of COVID-19 has many other effects, such as truncating the course of disease, low side effects of drugs, and preventing recurrence after the disease[5]. After the effective controlling of COVID-19, in introducing the progress and effectiveness of TCM prevention and control work, the Central people's Government of the people's Republic of China pointed out that[6] the participation rate of TCM in COVID-19 has reached 99.28% and the effective rate is 90%, among which the remission rate of fever, fatigue and cough and asthma of patients is as high as 90%. In addition, TCM can also use non-drug therapies such as acupuncture and moxibustion or cupping, which have played a role in the treatment of COVID-19.

To sum up, TCM has a feasible diagnosis and treatment system in the treatment of pyreticosis, which is a dominant disease of TCM. However, there is no special course for TCM treatment of pyreticosis, and there is no clinical course for improving the ability of TCM diagnosis and treatment of pyreticosis on the basis of the four classic courses. Therefore, it is necessary to carry out the course construction of introduction for medical cases of pyreticosis treated by TCM.

2.2. Medical Cases Teaching is an Important Part of TCM Clinical Teaching, But it has not yet Been Curricular and Systematic

The medical cases of TCM which records the whole process of TCM doctors' treatment of diseases, such as syndrome differentiation, legislation and drug use. For modern TCM teaching, medical cases can play a pivotal role in the process of transferring theory to clinical practice of TCM students' thinking. TCM education originated from "the medical service system" of the Zhou Dynasty[7]. The family teaching and master teaching in the mode of "master and apprentice" were the main forms of ancient TCM education. Jingzi Wu said, "Better to go to clinical practice than to study the theories of famous doctors." The importance of TCM clinical education is pointed out. Chinese master Taiyan Zhang said, "The essence of TCM is found in medical cases. People who study TCM want to get the experience of previous doctors, and medical cases can provide them with a better help." It points out the importance of medical cases in TCM clinic. In the process of inheritance of TCM, in order to spread the theories of various doctors, the inheritors pay attention to the integrity of their theories. At the same time, imprint their medical practice (medical cases), such as Yuyi Chun's book of *Diagnosis*, Tianshi Ye's book of *Clinical Practice Medical cases*, etc. Since modern times, under the influence of the new education system, the education of TCM has been industrialized and the education of master and family have gradually shrunk[8]. Medical cases teaching is an important way to carry on the education of TCM master and clinical education in colleges and universities. At present, medical cases teaching has not been curricular and systematic. The lack of curriculum means that there are no special medical cases introduction courses and the medical cases teaching is mostly interspersed with the classroom teaching of four classic courses, which is random and too fragmented. Some colleges and universities offer medical cases courses, but most of them are optional. The lack of systematization means that most of the medical cases teaching are based on the selection of famous medical cases or specific diseases according to the taught diseases. Medical cases, as a summary of personal clinical experience of doctors, are characterized by different degrees of difficulty and different recording methods. In the current medical cases teaching, the selection of medical cases lacks the classification of academic situation and the standard of hierarchical selection with clear teaching objectives, which

is of high learning difficulty for undergraduate students who have just finished the study of theoretical courses. Therefore, the curriculum construction of hierarchical medical cases introduction of TCM is necessary.

3. CURRICULUM CONSTRUCTION METHODS

3.1. Course Positioning

The course of *Introduction to The Hierarchical Medical cases of Traditional Chinese Pyreticosis* is set at the end of the four classic courses. As an examination course for students enrolled in the Class of Outstanding Doctors (TCM), this course aims to enhance the students' clinical application ability of the four classic courses. Taking pyreticosis as an example, this course aims to improve students' clinical diagnosis and treatment ability of TCM.

3.2. The Main Medical Cases Selected are Pyreticosis

There are a lot of medical cases of TCM, so the inclusion criteria for the medical cases selected in this course construction should be determined:

- ①The main symptoms of the selected cases are pyreticosis, including the pathogenic factors are thermal pathogens and the clinical manifestations are obvious.
- ②The prescriptions of selected medical cases are all derived from the classic prescriptions recorded in *Treatise on Febrile Diseases*, *Synopsis of the Golden Chamber* and *Febrile Diseases*.
- ③The source of selected medical cases should be famous doctors in all dynasties, in order to ensure the credibility of medical cases.

3.3. To Clear the Hierarchical Arrangement of Medical Cases and the Teaching Purpose of Each Level

Hierarchical introduction is a teaching mode of hierarchical teaching and classified guidance. In the medical cases teaching arrangement, it is mainly based on the diverse difficulty of the medical cases data and the students' discipline level. It is guided by the selection criteria and teaching purpose respectively, which can be divided into three levels (**Table 1**).

Table 1. Inclusion Criteria and Teaching Objectives in the Hierarchical Arrangement of Medical cases

	Compilation of the Standard	Teaching Objectives
The first level	It has a complete case system and a complete set of four diagnostic data. The symptoms described in the medical cases are consistent with those contained in <i>Treatise on Febrile Diseases</i> , <i>Synopsis of the Golden Chamber</i> and <i>Febrile Diseases</i> . The prescribed treatment of diseases in medical cases is consistent with the main medical evidence recorded in the four classic courses. Clinical common diseases and frequently-occurring diseases are the first choice. Little change in prescription. Most of them are recorded in vernacular Chinese, and the reading difficulty is relatively low.	On the first level, medical cases that are appropriate to the contents of classes and lectures are mainly selected. So that students can grasp the clinical application of classroom contents, establish the intuitive impression that TCM can effectively prevent and control pyreticosis, strengthen their interest in learning and improve their initiative in learning.
The second level	It has a complete case system and a complete set of four diagnostic data. The symptoms described in medical cases are different from those contained in <i>Treatise on Febrile Diseases</i> , <i>Synopsis of the Golden Chamber</i> and <i>Febrile Diseases</i> , which allows doctors to give play to and supplement their personal experience. The prescription can be changed flexibly according to the disease. It mainly focuses on medical cases of doctors in The Ming and Qing Dynasties, which not only embodies the thoughts of the epidemic febrile diseases school in the Ming and Qing Dynasties, but also integrates the academic thoughts of <i>Records of Tradition Chinese and Western Medicine in Combination</i> .	On the basis of the first level, students can master the flexible use of classic prescriptions. After learning this level, students are expected to choose prescription and use medicine according to the specific conditions of clinical diseases and syndromes.
The third level	There is no specific requirement for medical cases and all valid medical cases of ancient and modern famous doctors can be compiled. In addition to clinical prescriptions in <i>Treatise on Febrile diseases</i> , <i>Synopsis of Golden Chamber</i> and <i>Febrile Diseases</i> , clinical cases of mistreatment can be collected. At the same time, diseases that are difficult to diagnose, difficult to treat and critically endangered can be included.	Through the study of the third level of medical cases, the students' clinical thinking ability is cultivated and the ability to distinguish errors in the face of clinical problems is cultivated. Through difficult complicated, critical and severe cases, the students can master the thinking of dealing with complex clinical problems.

3.4. Introduction to Teaching Rules

The teaching rules of introduction to medical cases are "introduction of problems -- analysis of medical cases -- review of original texts -- clinical reference".

①**Problem introduction:** The heuristic teaching method is adopted to first raise questions around the medical cases and inspire students to think.

②**Medical cases analysis:** To Interpret and analyze the symptoms, tongue manifestation and pulse, made clear the diagnosis, summarized the pathogenesis and interpreted the prescription.

③**Review of the original text:** To review the relevant contents of *Treatise on Febrile Diseases*, *Synopsis of the Golden Chamber* and *Febrile Diseases*, and to deepen students' understanding of the original text.

④**Clinical reference:** To Summarize the core ideas of medical cases and eliciting of clinical problems.

4. SIGNIFICANCE OF CURRICULUM CONSTRUCTION

4.1. Hierarchical Teaching Follows the Objective Law of Talent Training from Easy to Difficult, Which is Conducive to the Cultivation and Improvement of Students' Clinical Thinking and Ability

Selection of medical cases at different levels follows the objective law of talent training from easy to difficult in knowledge teaching. Contemporary undergraduates receive modern discipline education before learning TCM, so it is difficult for them to understand the theory of TCM which contains philosophical thoughts. It is even more difficult to learn and understand the ancient texts of TCM. In the process of teaching, if we choose ancient medical cases, it will be more difficult for students to understand, on the contrary, it will hurt students' confidence and enthusiasm in learning. Therefore, in the process of teaching, the first-level medical cases should be selected from modern doctors. At the same time, it is similar to the indications and functions in the original text. So that students can truly feel the clinical efficacy of the prescription, build learning confidence, stimulate learning enthusiasm, and preliminarily master the methods of reading medical cases and analyzing medical cases. On this basis, the second and third levels of medical cases study, clinical expansion and upgrading, which conforms to the basic law of talent training.

4.2. The Course of Introduction to Medical Cases of Pyreticosis is Helpful for Students to Master the Diagnosis and Treatment of Pyreticosis with TCM

As a basic method for TCM to understand and treat diseases, treatment based on syndrome differentiation is a must for students. The medical cases of treating same disease with different methods and treating different diseases with same method can strengthen students' dialectical thinking. The cases will focus on the cultivation of students' clinical thinking on the treatment of pyreticosis, which will help students master the clinical thinking on the diagnosis and treatment of pyreticosis after learning *Yellow Emperor, Treatise on Febrile and Miscellaneous Diseases* and *Febrile Diseases*.

4.3. The Role of Introduction to the Hierarchical Medical Cases of Traditional Chinese Pyreticosis in the Construction of TCM Clinical Basic Discipline

The discrimination and treatment of TCM pyreticosis are mainly taught in the three specialized courses of TCM clinical basic discipline, namely *Treatise on Febrile Diseases*, *Synopsis of the Golden Chamber and Febrile Diseases*. The course *Construction of Introduction to The Hierarchical Medical cases of Traditional Chinese Pyreticosis* has played a positive role in promoting the development of TCM clinical basic disciplines from the following three aspects:

4.3.1. Effects on classroom teaching of TCM clinical basic discipline

Nowadays, as specialized courses of TCM, *Treatise on Febrile Diseases*, *Synopsis of the Golden Chamber* and *Febrile Diseases*, there are no supporting teaching materials and auxiliary books on medical cases. Teachers usually choose medical cases of their own choice or own approval when conducting clinical development after explaining classic texts, prescriptions and herbs in class. It is difficult to ensure that the selected medical cases are in accordance with the theoretical knowledge taught. Meanwhile, the difficulty level of the selected medical cases is also difficult to match the situation of the first study of this course. In particular, in recent years, teaching methods such as CBL and PBL have been actively introduced in the teaching reform. As for the learning mode carried out by multiple groups at the same time, it requires that the medical cases assigned to each group should be equally difficult. Therefore, higher requirements have been put forward for the hierarchical and standardized medical cases. The course construction of *Introduction to The Hierarchical Medical cases of Traditional Chinese Pyreticosis* aims to select the

first-level medical cases in the initial learning stage of *Treatise on Febrile Diseases*, *Synopsis of the Golden Chamber* and *Febrile Diseases*, and gradually introduce the second-level medical cases in the later learning stage. Students with ability to learn can refer to the third-level medical cases for further promotion. In this way, the classroom teaching quality of *Treatise on Febrile Diseases*, *Synopsis of the Golden Chamber* can be improved and the clinical application ability of students can be improved.

4.3.2. *Effects on the construction of TCM clinical basic discipline curriculum system*

This course construction can enrich the course system and increase the connotation of connection between theory and clinical practice. At present, the three basic clinical courses of TCM (*Treatise on Febrile Diseases*, *Synopsis of the Golden Chamber* and *Febrile Diseases*) are all optional original texts and there are no corresponding optional medical cases reading courses. Due to the limitation of class time, only part of the original texts can be selected in class and most of the medical cases corresponding to the original texts are interspersed by teachers according to the class time, which is quite random. The curriculum construction of *Introduction to The Hierarchical Medical cases of Traditional Chinese* enriches the curriculum system of TCM clinical basic discipline from simple explanation of original texts to combination of explanation of original texts and explanation of clinical cases.

4.3.3. *Effects on the construction of TCM clinical Basic discipline examination system*

The teaching of TCM clinical basic discipline emphasizes its guiding value to clinical practice. In the current examination of this discipline, the question type of medical cases analysis has been adopted routinely and the cases assessment has been introduced into the formative assessment. However, the appearance of medical cases as examination question type has not yet been evaluated by the degree of difficulty coefficient, which affects the analysis of students' examination results. The course construction of *Introduction to The Hierarchical Medical cases of Traditional Chinese Pyreticosis*, which is based on the classification of medical cases in different levels of difficulty, and the teaching drives the examination, which is helpful to promote the construction of discipline examination system.

5. CONCLUSION

The course of introduction to medical cases of TCM is an exploration of the construction of medical cases. For the students, it can help them master the differentiation and treatment of fever by TCM while cultivating and improving their clinical thinking and ability. As for the

discipline of TCM, it can play a positive role in the teaching effect, curriculum system and examination system of the clinical basic discipline of TCM.

At present, related work has been carried out on the course construction of *Introduction to The Hierarchical Medical cases of Traditional Chinese Pyreticosis*. The *Introduction to The Hierarchical Medical cases of Traditional Chinese Pyreticosis Based on Classic Prescription* has been completed and is being tested and improved as the textbook compiled by the school. For the first time in the fall semester of 2020-2021, the examination course of introduction to medical cases has been offered in the 2017 class of Outstanding Doctors (TCM) in our school. Specific feedback on the use of teaching materials and teaching results will be reported separately.

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