

Research and Exploration on the Construction of Safety Culture in Traditional Chinese Medicine Laboratory

Yupei Zhang¹, Qingliang Song¹, Dongdong Liu¹, Shaobing Chen¹, Qinhe Yang^{1, a, *}

¹College of Traditional Chinese Medicine, Jinan University, Guangzhou, 510632, China.

^aCorresponding author Email: tyangqh@jnu.edu.cn

Abstract

The construction of Chinese medicine laboratory safety culture is an important part of laboratory safety management system. Taking the laboratory of the college of traditional Chinese medicine, Jinan University as an example and combining the specific laboratory management experience, this article organically combines the collective values, responsibility sense, crisis culture and safety training system of the laboratory in the traditional culture. And it actively explores the development path of laboratory safety culture construction, improves the safety literacy of teachers and students in multiple dimensions, strives to create a good laboratory safety culture atmosphere, thus providing multiple guarantees to ensure the safe and stable operation of the laboratory.

Keywords

Safety culture; Laboratory management; Chinese medicine laboratory; Cultural construction.

1. INTRODUCTION

In recent years, laboratory safety accidents in colleges and universities in China have occurred from time to time, and their painful lessons have not only seriously affected the teaching and scientific research work, but also caused great influence or injury on the body or psychology of teachers and students [1]. As the gathering place of professional talents and leading edge of science and technology, the laboratory of traditional Chinese medicine must establish and perfect the laboratory safety management system, actively train more Chinese medicine scientific research talents with good safety accomplishment. Based on this, how to run the laboratory safety culture education through the safety management of our laboratory and give full play to the demonstration role of students in the laboratory is an important innovation practice in our hospital in order to implement the laboratory safety values into the laboratory management service link.

2. WORKING IDEAS OF THE SAFETY CULTURAL CONSTRUCTION IN CHINESE MEDICINE LABORATORY

On the basis of the four-in-one laboratory management concept of “knowledge, ability, personality and responsibility”, we focus on cultivating the applying ability to combine theory with practice and innovative ability of scientific research thinking, and cultivating students to develop responsibility sense in the laboratory. Specifically, in the actual work of the laboratory, we should fully embody the people-oriented principle, raise the awareness of safety operation, emergency protection and responsibility of teachers and students in the laboratory to the primary position of all work, regard the all-round development of laboratory teachers and students as the ultimate goal of laboratory safety culture construction, in order to respect,

understand and care for teachers and students, constantly meeting the all-round development needs of teachers and students. We should establish ourselves, learn and teach with virtue, so as to promote the all-round development of teachers and students. Therefore, our college actively combines the professional characteristics of traditional Chinese medicine and the specific reality of the laboratory, implements the safety education of the laboratory into every link of experimental teaching and laboratory management service, to actively create a multi-in-one education platform for classroom education, social practice and campus culture.

3. CONCRETE PRACTICE OF THE SAFETY CULTURAL CONSTRUCTION IN CHINESE MEDICINE LABORATORY

3.1. Combine Classroom Teaching with Moral Education Well

In order to improve the safety protection consciousness and emergency level of laboratory operators in our hospital and effectively prevent the occurrence of laboratory safety accidents, college of traditional Chinese medicine of Jinan University opened a compulsory course "Laboratory Safety Knowledge" for graduate students in 2019 year. This course is mainly teaching for newly enrolled Chinese medicine, integrated Chinese and western medicine major of academic master's degree including theoretical and practical teaching, totally of 20 hours. In the classroom, we flexibly use the teaching means of "speaking, doing, guiding and evaluating" to stimulate the participation of graduate students. That is, through the way of "I speak you listen", "I do you see", "you practice I guide", "you do I evaluate", we actively guide graduate students to study laboratory related safety knowledge theory and safety operation skills [2-3]. Therefore, through the organic combination of professional education and moral education, this course continuously innovates teaching ideas and teaching methods, strengthens graduate students' mastery of laboratory safety theory, safety responsibility consciousness and protection emergency knowledge, and establishes a more mature laboratory safety access training system.

3.2. Strengthen the Integration of Laboratory Safety System Construction and Management System

The construction of laboratory management system is an important basis for standardizing operator behavior and carrying out effective and standardized management [4]. In order to construct laboratory safety management responsibility system, our hospital first set up the laboratory safety management committee led by the dean, established the top-down and three-level safety responsibility management system, signed the safety responsibility agreement with the managers at all levels year by year, defined the leadership and individual division of labor and management responsibilities, and implemented the laboratory safety responsibility to the individual. In recent years, our hospital has made positive progress in standardizing students' laboratory operation behavior and safety responsibility consciousness by formulating General Rules of Laboratory Management System of College of Traditional Chinese Medicine and related implementation rules, including Laboratory Safety Management System, Hazardous Chemicals Management System, Instrument and Equipment Using Management System, Experimental Animal Using Management System, Experimental Waste Disposal System, etc., which is beneficial to guarantee the safety of laboratory and experimental personnel. At the same time of the laboratory system construction, our college also actively carried out laboratory safety simulation exercises. by familiarizing teachers and students with the distribution and standardized operation of laboratory safety and fire prevention facilities, all teachers and students can learn how to deal with different safety problems and reduce safety risks decisively and quickly during the exercise [5].

3.3. Combine the Laboratory Safety Training System with the Student Reward and Punishment System

Systematic professional laboratory safety education and strict laboratory safety access mechanism are effective means to ensure the safe operation of laboratories. In recent years, we have actively carried out all-round laboratory safety education and training for laboratory personnel and students, and established a standardized laboratory safety training process and assessment system. Through special training, students can clearly understand the potential risk factors and hazard levels in the experiment course, improve the psychological preparation and emergency ability to deal with laboratory emergencies, and strengthen the familiarity for students with the use of laboratory protective equipment and firefighting equipment, making the experimenters establish the laboratory safety precaution consciousness, the emergency handling ability, and the precaution in the bud consciousness. In order to strengthen the implementation and effective enforcement of laboratory safety discipline, we link students' behaviors in laboratory safety violation with individual award evaluation, and implement the "one-vote veto" system of moral education assessment. These measures not only improve the management levels and operation efficiency of the laboratory, but also enable teachers and students to form a correct cultural and psychological stereotype in thinking mode, values and behavior norms, to make them accept the bottom line of laboratory safety morality from the heart, form a crisis cultural consciousness, and cultivate conscious safety behavior habits [6].

3.4. Give Full Play to the Soft Power of Chinese Medicine Culture and Strengthen Foreign Exchanges

Chinese medicine culture is the treasure of Chinese traditional culture and the cultural essence inherited for thousands of years [7]. In the past few years, our teaching laboratory has actively received guests from Malaysia, the United Kingdom, Ecuador, India and other countries. Through their visit and study, we make them to understand the connotation of Chinese medicine culture, and have a strong interest in Chinese medicine culture. At the laboratory scene, we introduced these safe, green and effective acupuncture, cupping, scraping, massage and other traditional therapies to the guests, so that they personally experience and personally feel with their recognition and praise. In addition, we have actively studied foreign advanced laboratory management experience, actively set up an information-based laboratory management platform, and have made positive progress in the optimization of laboratory functional areas, external sharing of instrument resources and chemical safety management. It has achieved a better exploration and practice to improve the safety management level of existing laboratories, reduce and avoid the occurrence of laboratory safety accidents.

4. CONCLUSION AND SUGGESTION

Good laboratory safety culture is an important part of advanced campus culture in colleges and universities. Through carrying out the laboratory safety cultural construction, our college can fully arouse students' enthusiasm and initiative to participate in experiments and practice, enhance students' ability to understand and apply laboratory safety knowledge, and ensure students to carry out relevant teaching and research work in a safe and orderly environment. At the same time, our college makes the new students fully understand the significance and value of laboratory safety teaching and practical training, and guides the students to solve the problems in the laboratory with the professional knowledge they have learned. After more than 10 years of construction and improvement, the laboratory of the college of traditional Chinese medicine successfully applies the laboratory safety education culture through the experimental teaching and scientific research work, and strengthens teachers and students with the safety responsibility sense of "Safety first with prevention". Since the college establishes, the

laboratory has operated normally in a safe and orderly environment, and there has been no laboratory safety responsibility accident, which has achieved good implementation effects.

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REFERENCES

- [1] Feng Qin, Qiang Huang, JiuHong Yuan. Analysis on the Causes and Management Countermeasures of Laboratory Safety Events in Colleges and Universities[J]. Research and Exploration in Laboratory, vol. 36 (2017) No. 3, p. 302-306.
- [2] Shengchun Guo, Lifang Zhang, Pengyun Li, et al. Construction of Teaching Quality Evaluation System for “Trinity” Medicine [J]. Education Forum, vol. 52 (2020), p. 126-127.
- [3] Jinquan Wang. Research and Practice of “Trinity” Model in Pharmacology Experimental Teaching. Journal of Chengdu University of Traditional Chinese Medicine (Educational Science Edition), vol. 19 (2017) No. 3, p.45-47.
- [4] Ming Cheng, Feng Jiang. Problems and Countermeasures in Scientific Laboratory Management[J]. Laboratory Medicine and Clinic, vol. 12 (2015) No. 1, p. 139-140.
- [5] Yufen Zhang, Bing Xu, Biru Zhu. Cultural Construction of Scientific Research Laboratory in Colleges and Universities under the Background of “Double First-Class” Construction[J]. China Modern Educational Equipment, vol. 335 (2021), p. 25-27.
- [6] Zhaoyang Li, Yu Wang, Donghong Fang. Research and Exploration on the Construction of Laboratory Safety Culture in Colleges and Universities[J]. Experimental Technology and Management, vol. 38 (2021) No. 2, p. 290-291.
- [7] Zongliao Zhao. Opinions on Chinese Traditional Culture and Chinese Medicine Culture [J]. Guiding Journal of Traditional Chinese Medicine and Pharmacy, vol. 20 (2014) No. 2, p. 4-7.