

# On the Construction of Laboratory Safety Culture in Medical Colleges

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**Abstract:** University medical laboratories are important practical bases for medical teaching and scientific research so that the construction of safety culture for university laboratories is an important aspect of laboratory safety construction. A safe working environment is a premise to ensure a smooth operation in laboratories. This paper analyzes the current problems in the construction of laboratory safety culture in medical colleges, then puts forward suggestions based on the advanced management experience of domestic colleges and universities. The purpose is to further improve the construction of laboratory culture in medical colleges to enhance the safety awareness of teachers and students in the laboratory.

**Keywords:** Medical College; Laboratory; Safety Culture; Construction Channels

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The safety culture of teaching management in school refers to mainly the long-term conventional safety atmosphere formed on campus. It is not only a concentrated reflection of humanities but also one of the important premises for the school to achieve sustainable development. At present, it is precisely through the construction of safety culture on campus that the unsafe behavior that may exist within the school can be restrained and the safety of students can be assured. The construction of laboratory safety culture is an important part of school safety culture management. Considering the special status of laboratories for medical schools, the current construction of laboratory safety culture can serve as model guidance. Medical college laboratories are an important base to carry out teaching and scientific research activities, and the cradle for the cultivation of innovative talents. For medical colleges, laboratories are an important part of classroom teaching. The effects of laboratory teaching activities directly affect the professional level of college medicine students. Overall, the laboratories of medical colleges are more important than other science and engineering majors in terms of frequency of use and application.

## 1. The necessity of the construction of laboratory safety culture in medical colleges

First, safety is the basis for the laboratory to smoothly carry out teaching and scientific research activities. Most majors in medical schools require repeated practices because only in this way can talents with competence for the workplace. In this case, the laboratory plays an active role in practical teaching activities. Only with the help of the laboratory platform, can students really acquire basic knowledge of the medical specialty. For example, in the practical activities of the surgical course, students are required to complete basic surgical operations in the laboratory, such as surgical disinfection, hand washing, knotting, and suture training. Therefore, a safe and stable laboratory environment is the prerequisite for teaching and scientific research activities. However, only when the safety awareness is raised will the laboratory experiment risk be reduced to the most extent during laboratory activities. In regard to the frequent laboratory teaching and scientific research activities of medical colleges, the formation of a standardized safety culture system can ensure that the laboratory provides medical college students with reliable opportunities for scientific research and

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exploration. Therefore, the establishment of a laboratory safety culture is conducive to the stable development of laboratories and is also the prerequisite for teaching and scientific research activities.

Second, the laboratory safety culture is helpful to improve the safety awareness of students. The causes of laboratory safety accidents mainly include two aspects, namely the unsafe condition of things and the unsafe behavior of people, among which the unsafe behavior plays a vital role in the occurrence of laboratory safety accidents. In this way, the construction of laboratory safety culture is an effective way to correct unsafe behaviors<sup>[1]</sup>. Medical colleges and universities are practice-oriented educational institutes to cultivate high-quality and high-standard talents with outstanding practical and innovative abilities. The cultivation of the talent team can not be realized without long-term safety education for students to enhance their safety awareness. Only by establishing a laboratory safety culture system and long-term education for students can unsafe behaviors and understandings be subconsciously corrected.

## **2. Problems in the construction of laboratory safety culture in medical colleges**

First, the awareness of the construction of laboratory safety culture in medical colleges and universities is out of place. As it is mentioned above, the safety culture of medical laboratories plays an important role in the construction of campus culture which needs to be given more attention and sufficient resources to support the development. In fact, there are many problems in the safety management of medical college laboratories, and safety management is also lopsided. For example, the focus is on the safety management of laboratories in medical colleges of often laboratory operating procedures. In the daily experimental activities, even if safety accidents occur, those responsible only need to compensate through monetary methods. Therefore, laboratory safety management in medical schools stays basically in word and has not yet been implemented in all aspects of the laboratory.

Second, laboratory safety management lacks the forward-looking. Measures related to the construction of laboratory safety management are arbitrary, that the management system always changes according to the wills the leaders, teachers, or managers of the laboratory. However, the safety construction of laboratories can not be accomplished overnight which needs civil engineering construction, water supply, and drainage pipes, etc. Therefore, once the prospective and systematic management is lacked, the safety management of the laboratory will show a deficient development, and the effect of safety management will also be affected.

## **3. Countermeasures for the construction of laboratory safety culture in medical colleges**

### **3.1 Enhance safety awareness by multiple means and create a harmonious atmosphere in the laboratory**

First, to enhance safety awareness, it is required to complete the construction of safety awareness within the medical school from the bottom up. For example, through regularly conducting safety publicity and education, teachers and students can fully understand the important role of safety management in the laboratory. Laboratory safety drills can also be organized on a regular basis. Through situation simulation, students can form a more comprehensive understanding of safety management. Second, it is necessary for teachers and students to communicate safety ideas and carry out safe teaching and learning activities. In the process of realizing the construction of laboratory safety culture, in addition to attaching importance to safety management, it is also required for laboratory personnel to have safety knowledge and be able to follow the safety culture in daily experiences. Therefore, the laboratory safety-related document system and specification requirements should be established, so that teachers and students can better regulate themselves to form security awareness gradually.

### **3.2 Improve the laboratory safety system and safety level**

While constructing the safety system on campus, the laboratories of medical colleges still usually lack supervision and incentive mechanism, etc., so that it is difficult to implement safety culture construction into the whole process of laboratory management. Therefore, it is required that the laboratories of medical colleges improve the safety management system by establishing the safety management supervision mechanism and incentive mechanism, etc., so that safety work can be easily launched, and the laboratory safety management can be greatly improved<sup>[2]</sup>. For example, in the learning evaluation of medical college laboratories, whether students implement safety awareness and safety criteria can be incorporated into the assessment indicators. Thereby, it will greatly improve safety management practice and playing a critical role in daily safety management.

### **3.3 Building smart and safe laboratories with the technology of Internet of Things**

The security issues, security thoughts, and the construction of security mechanisms mentioned above are commonly used

methods for campus cultural construction. In this information age, the traditional construction approaches have been unable to meet the development requirements of medical college laboratories. At present, the laboratory safety culture system must be put in place and implemented based on information technology. Importing the Internet of Things technology can help build a smart laboratory platform system and quantified laboratory safety management, which requires college medical laboratories to keep abreast of the latest medical equipment<sup>[3]</sup>, medical devices, and drugs. With the help of Internet of Things technology, information about these latest experimental materials can be incorporated into the management platform to achieve information sharing and ensure that safety management is carried out efficiently. At the same time, with the support of the Internet of Things technology, the safety culture construction of medical college laboratories can also be gradually carried out through the platform that every step can be carried out safely under professional guidance through a perfect security organization structure. With the help of information technology, the construction work of diversified safety culture has been built, such as laboratory on the network platform, a variety of selective safety cultural activities, the supervision and broadcasting of students' experiments, and the voting evaluation by teachers and students, to promote a large-scale promotion of safety culture.

#### **4. Conclusion**

In short, the safety culture of laboratories in medical colleges is a cultural value and principle of life about safety. It can be concretely manifested through the safety management system and the construction of scientific research sites, etc., to stress on its disciplining function. The safety culture can also be reflected through abstract patterns by developing people-oriented safety awareness in the laboratory. For the moment, the construction of laboratory safety culture in medical colleges can start from the establishment of safety awareness, the creation of a safety atmosphere, and the construction of safety management systems. More importantly, it is required to build intelligent laboratories in medical colleges with the help of technologies in the information age to realize the special significance of constructing laboratory safety culture in medical colleges.

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