

## Evaluation of Teaching Effect of Medical Statistics in Medical Colleges and Universities Based on Network

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**Abstract:** Medical statistics is an important and practical medical course. It is a cross-disciplinary combination of statistics, medicine and computer, and it is also a difficult subject to master. The high development of the information society requires that education must be reformed to meet the requirements of training innovative talents for the information society. At the same time, the development of the information society also provides the environment and conditions for such reform. The existing education and teaching of medical statistics are not very optimistic, and there are still some problems that cannot be ignored. Medical statistics is a basic course for undergraduates of various specialties in medical colleges and universities, and its importance to students is self-evident. However, at present, some medical students in some colleges and universities do not have an ideal grasp and application of the course. How to establish a medical statistics education and teaching mode that not only conforms to the development trend of biomedicine, but also meets the training goal of medical students has become an urgent problem to be solved in the teaching reform of medical statistics education.

### 1. Introduction

Medical Statistics is an extremely important basic course for medical students. The definition of medical statistics is a science that applies the basic principles and methods of probability theory and mathematical statistics to study the collection, collation and analysis of data in the medical field [1]. Medical statistics is one of the required courses in the basic courses for undergraduates and postgraduates in most medical colleges and universities. This course plays an important role and significance in cultivating students' thinking mode of scientific research and ensuring their successful completion of subject research [2]. The high development of the information society requires that education must be reformed to meet the requirements of training innovative talents for the information society. At the same time, the development of the information society also provides the environment and conditions for such reform [3]. Medical statistics is one of the compulsory basic courses for medical college students. Its teaching effect will have a great impact on the scientific research quality of medical students in the future. The existing medical statistics education and teaching are not very optimistic, there are still some problems that cannot be ignored, and they are facing certain dilemmas, such as medical statistics education and professional curriculum settings have not received due attention and development [4]. Medical statistics is a basic course for undergraduates of various majors in medical colleges, and its importance to students is self-evident, but at present some medical college students are not ideal enough to master and apply the teaching content of the course.

Medical statistics is a discipline that uses the basic principles and methods of statistics to study medical problems. It includes research design, data collection, collation, analysis, and correct interpretation and expression of analysis results. By studying statistical knowledge, medical students learn to think about medical issues from a statistical perspective, and can make rigorous medical research designs in combination with the professional, correctly collect and analyze data, and make a correct and scientific understanding of the laws of development and change of things so that Recognize its inherent law through accidental phenomenon [5]. As a teacher, classroom

teaching is the main form of imparting knowledge. Carrying out evaluation of classroom teaching can provide an important basis for improving teaching quality. Due to the influence of various factors, some students still have some ambiguities about the basic concepts, basic principles or basic methods after finishing the course, and wrongly analyzed or expressed the collected data [6]. Therefore, how to establish a medical statistics education and teaching model that conforms to the development trend of biomedicine and adapts to the training goals of medical students has become an urgent problem to be solved in the teaching reform of medical statistics education [7]. In order to find out the problems existing in the teachers of medical statistics teaching, so as to improve them targetedly and improve the teaching quality, it is necessary to carry out the evaluation of the teaching effect of medical statistics.

## 2. Medical Statistics and Medical Practice Are Closely Combined

In the choice of teaching content, according to the different majors of students, emphasis should be placed on the combination of teaching content and majors of students. Confidence is an important factor affecting the teaching effect. The more confident you are in learning this course, the better the teaching effect will be. In addition, confidence is not isolated, and has a certain relationship with the degree of difficulty and interest before learning this course. As a required course for medical majors in medical colleges, medical statistics is not well mastered and applied by some students. It is of great practical significance to find out the problems existing in the teaching of medical statistics and solve them in a targeted way. Statistics is a discipline that helps people reveal the internal laws of things. If it can induce students to solve professional problems and reasonably reveal the laws of professional fields, it can better mobilize the enthusiasm of students in learning [8]. In the past teaching process, statistical description and statistical inference were the main methods, while the design, arrangement and collection work in the early stage were seldom introduced.

As a required course for medical majors in medical colleges, medical statistics is not well mastered and applied by some students. It is of great practical significance to find out the problems existing in the teaching of medical statistics and solve them in a targeted way. Schools should attach importance to the construction of statistical teachers and strengthen their professional training and learning. For example, Table 1 shows the application of statistical methods by medical students of different levels and specialties.

Table 1 the Application of Statistical Methods by Different Levels and Professional Medical Students (%)

Statistical method	Undergraduate			Postgraduate		
	Clinical medicine / Biotechnology	Preventive medicine	Subtotal	Academic type	Professional type	Subtotal
Basic statistical description	75.1	83.8	79.3	88.1	79.5	80.3
Common statistical inference methods	56.1	58.7	58.6	70.3	66.3	61.6
Bivariate Correlation Analysis and Linear Regression	47.9	52.1	49.8	48.1	49.4	48.7
Statistical software operation	51.2	53.2	52.3	67.8	50.8	55.5

In the teaching process, it is necessary to combine the actual situation and suggest to make research and design according to the needs of one's own subject, and to discuss collectively in class and give opinions to each other. In order to improve teachers' ability of information-based teaching, the teaching and research section should send young teachers to participate in the information-based teaching training courses held by the school every year for full-time study. The training course trains teachers in modern teaching theories, concepts, teaching methods, information technology, curriculum integration and other aspects, changes teachers' teaching concepts, and comprehensively

improves teachers' information technology application level. Most students do not know this course very well before learning it. They mainly hear that it is more difficult from senior students, thus believing that it is more difficult and affecting their confidence in learning [9]. In order to ensure the quality of study, theoretical and practical examinations are carried out after the completion of the study. Teachers who pass the examinations are given certificates and credits for continuing education, thus enhancing teachers' enthusiasm to participate in training courses. Strong interest can enhance the motivation and confidence of learning, which suggests that teachers should also enhance students' interest in learning while eliminating the fear of difficulties, such as using random phenomenon computer simulation system and animation demonstration to vividly visualize abstract concepts and principles that are difficult to understand. Through the combination of teaching practice experience, students' learning interest and learning initiative can be improved, classroom teaching burden can be reduced, and teaching effect can be improved.

### **3. Close Combination of Medical Statistics and Network Multimedia**

Information-based teaching is a form of modern teaching, which is relative to traditional teaching. It is characterized by the support of information technology. It applies computer multimedia technology and network information technology to teaching, learning and teaching management. It is used to call it information-based teaching. With the development of modern medical research, it has become a necessary ability to process medical research data by using relevant statistical software. In the process of building the resource pool, we cannot simply pursue the amount of data and multimedia forms of teaching resources, nor can we copy book knowledge. Instead, we should organically integrate modern information technology with curriculum teaching objectives, so that computer multimedia technology can be perfectly embodied in teaching applications. Multimedia teaching is vivid and intuitive. The implementation of multimedia-assisted teaching of medical statistics makes abstract theories of statistics intuitive, concrete and visual, thus enhancing students' understanding of concepts. The construction of teaching information resource base is embodied in the construction of various application software platforms, the accumulation and construction of multimedia material base, multimedia courseware and excellent teaching cases, electronic lesson plans, examination questions bank, electronic documents, etc. Medical colleges and universities should integrate modern network technology into teaching through teaching reform, make full use of the split-easy, rain classroom teaching platform to allow students to participate, assign homework in a timely manner, and solve the problems encountered in students' learning in a timely manner.

Multimedia technology has unique advantages in medical statistics teaching, which can visualize abstract problems and improve students' interest in learning. Many students were puzzled when they were studying statistics. They felt that drawing, tabulation and calculation had little to do with medicine, clinical knowledge, motivation and interest. Network teaching is an extension of traditional classroom teaching in time and space [10]. The website is rich in teaching courseware and reference materials to guide students to self-study. These courseware and guidance materials focus on helping students to deepen their understanding of the course content, rather than repetition and duplication of teaching materials. In order to provide patients with accurate and scientific information, we must have some true and reliable conclusions. Therefore, it is necessary to compare and analyze various examination methods and treatment measures to find out the best and most effective treatment method. Network teaching breaks the limitation of time and space in traditional teaching. No matter graduates or students in school, they can browse the contents described in class from the Internet [11]. In order to adapt to cultivate students' innovative spirit, scientific research ideas and corresponding basic knowledge need to be a part of basic modules and become a normal teaching component. Different majors have different emphases. In the process of education informatization construction, no matter how the mode of informatization teaching changes, we should always adhere to the student-centered principle and aim at continuously improving the teaching quality, instead of simply pursuing the innovation of teaching methods.

#### 4. Conclusion

Medical statistics is an abstract subject. I believe that with the progress of science, the improvement of teaching conditions and the continuous accumulation of teaching experience, a more effective teaching method will be explored with the joint efforts of all medical statistics teaching staff. With the help of Internet technology, information-based teaching breaks through the limitation of traditional teaching numbers and regions. It can not only expand the content of knowledge and information, but also fully mobilize students' multiple senses, providing students with a good learning situation with rich information resources and large amount of knowledge. Network teaching is an extension of traditional classroom teaching in time and space. As a required course for students of various specialties in medical colleges and universities, the teaching quality of medical statistics directly affects the comprehensive quality of graduates. Information teaching breaks the traditional closed mode of teaching and learning, and advocates cooperation among teachers, teachers and students, and students. In this mode, teachers become the organizers and directors of teaching, and students become the constructors of knowledge. In the process of educational information construction, no matter how the mode of information-based teaching changes, we should always adhere to the students as the center, with the purpose of constantly improving the quality of teaching.

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