Thinking on Doing Well Statistical Work of Higher Education in Medical Colleges and Universities under the Background of Big Data

Meng Chen, Shuang Zheng, Xuebo Li*

Shandong University of Traditional Chinese Medicine, Jinan, Shandong, China

*56028325@qq.com

*Corresponding Author

Keywords: Education statistics, Big data, School running quality, Data update, Data accumulation

Abstract: Statistics work of higher education is an indispensable part of the development of higher education. Medical colleges and universities are the main source of medical talents and an important guarantee for the development of medical science and technology. The school running quality will directly affect the development of Chinese medicine in the future. In recent years, with the rapid development of big data technology and the rapid improvement of medical technology, the speed of information release and transmission in the medical field is faster and faster, and the speed of data accumulation and update is increasing rapidly, which brings new challenges and opportunities to the statistical work of medical colleges and universities. Therefore, under the background of big data, it is necessary to study the education statistics of medical colleges and universities. In this exploration, the problems in medical higher education under the background of big data are analyzed, and the corresponding solutions are proposed.

1. Introduction

Health is always the primary concern of people. The development of medicine is closely related to human health. In recent years, big data technology has driven the rapid development of various social fields, and the most prominent is the arrival of massive data in various fields [1]. Therefore, statistical work in every industry faces unprecedented challenges and pressures. The statistical work of education in medical colleges and universities is of great significance in school running, social development and medical education [2]. However, in the era of big data, there are still some problems in the education statistics of medical colleges and universities. At the same time, the research on this aspect is relatively less. Therefore, the methods of comprehensive analysis and investigation analysis are adopted to study the problems in the current statistical work of medical education, and corresponding optimization measures are given, hoping to provide reference for the statistical work of medical colleges and universities.

2. Significance of Medical Colleges and Universities to Do Education Statistics Well under the Background of Big Data

(1) School running

Advanced medical experimental equipment is the necessary resources for education and teaching in medical colleges and universities. The rational allocation of these resources is the key factor affecting the teaching quality. Statistical work can provide a strong basis for the reasonable purchase and replacement of these educational resources, which can strengthen the implementation of medical practice courses. The education statistical work can effectively reflect the teaching level of teachers and the management level of the school, help teachers to reflect and summarize teaching and improve teaching quality [3], and help schools carry out scientific teaching management; in the era of information explosion, whether information can be obtained in time in various fields is the main reason affecting its development. Statistical work can enable the school to analyze the statistical data, then communicate and compare with other medical colleges and universities in

  DOI: 10.25236/icatpe.2020.042

teaching and running schools, and learn from each other's strong points and close the gap, which can promote medical colleges and universities to achieve coordinated, stable and scientific development [4].

(2) Social aspects

With the rapid development of information technology, education informatization has become an important work with national support and development. Figure 1 shows the changes of education informatization funds and their proportion in financial education funds in recent years. It clearly reveals that since 2013, China's education informatization funds have increased year by year. At the same time, the proportion of education informatization funds in all financial education funds was basically stable at about 8% before 2017. However, after 2017, it showed a rapid growth. Until 2019, it had exceeded 9%. This fully shows that with the advent of the information age, the country increasingly attaches importance to the development of education informatization.

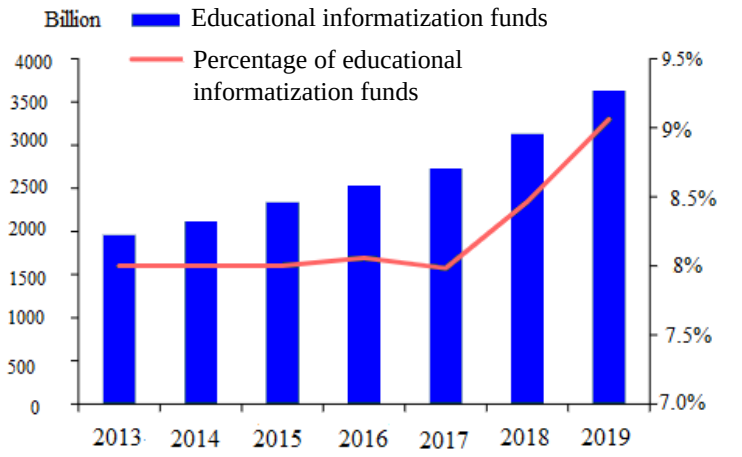

Fig.1 National Educational Informatization Funds and Their Percentage in Financial Education Funds

Medical colleges and universities are closely related to human health. With people's continuous attention to health problems, medical information is the focus of attention. Medical colleges and universities can provide relevant information to the society in a timely manner through the education statistical work, such as the setting of important specialties, the ratio of teachers and students, the statistics of the latest scientific research achievements, the statistics of master's and doctor's programs. On this basis, all sectors of society can understand the latest technology, leading technology, development trend, school running mode and personnel training direction of medical colleges and universities. It can strengthen people's understanding of relevant technologies in the medical field, contribute to the exchange and sharing of information from all walks of life, and promote the rapid development of society. The following is the percentage of the amount of information released by medical universities to all sectors of society in the amount of information published by all colleges and universities in recent years. Figure 2 clearly shows that the statistical work of medical education plays an increasingly important role in all sectors of society.

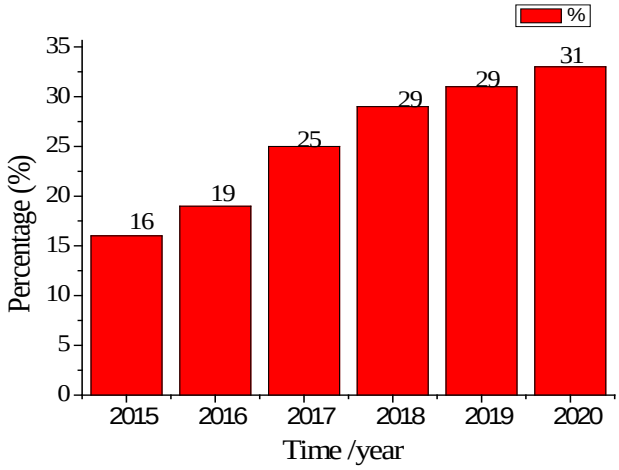

Fig.2 Percentage of Medical University Information Released to the Public

(3) Personnel training in medical institutions

The rapid development of science and technology drives the continuous renewal of knowledge. Medical education knowledge is indispensable to the talent training direction of medical enterprises, talent development strategies of hospitals and development and improvement of related medical management personnel. In particular, the reform and innovation of education system in medical colleges and universities must be based on certain medical information. The education statistical work in medical colleges and universities can provide effective information for the education departments of these institutions, help them form scientific education decision-making, and provide reliable data reference and theoretical basis in the establishment of scientific talent training mode [5].

3. Problems in the Education Statistical Work of Medical Colleges and Universities in the Era of Big Data

(1) The comprehensive quality of statisticians cannot keep pace with the times. The rapid development of science and technology puts forward higher requirements for talents in various fields. It is an inevitable trend to improve the comprehensive quality of the staff. In the era of big data, statistical work is a comprehensive work integrating mathematics, statistics and computer technology, which requires staff not only to have professional statistical knowledge, but also to have certain computer skills. However, in the actual investigation and research, it is found that most of the statisticians still focus on the traditional data statistics and calculation because of the lack of relevant computer technology. They cannot make full use of big data technology for data analysis and processing, and the value of statistical data cannot be fully utilized.

(2) The facilities of statistical work cannot meet the needs of modern statistical work. With the rapid development of science and technology, some schools put forward the concept of fine management to meet the needs of development. Therefore, the school begin to blindly increase and refine all kinds of statistical reports, including the refinement of content and the refinement of reporting time, resulting in the same statistical content being reported by different departments at the same time. Statistical workers will face a lot of data collation, proofreading and analysis. Tedious and repetitive statistical content greatly reduces the statistical efficiency. As everyone knows, any work cannot be carried out without the corresponding material security. The above phenomena often appear in the statistical work of medical colleges and universities, which are mainly due to the imperfect information construction, unclear post responsibilities of statisticians, and inadequate understanding of the concept of fine management.

(3) The coordination of statistical objects is not enough. In the statistical work of colleges and universities, it is often encountered that the respondents are not willing to fill in the relevant information for various reasons, which makes it difficult to carry out the statistical work.

(4) Statistical data are lack of reliability, objectivity and authenticity. Data authenticity is the life of statistical work. Medical colleges and universities often carry out related research in hospitals and medical institutions. In these institutions, the staff mobility is large and the personnel structure is complex. Due to the education level and lack of understanding of the investigators, the statistical objects have the phenomenon of filling in the relevant statistical information at will. The development of statistical work often has the phenomenon of low data quality, which seriously affects the objective authenticity of the statistical results [6].

To analyze the causes of the above problems, the school selects some objects from students, teachers, statistical management personnel and other functional departments to carry out the survey. Figure 3 shows the survey results.

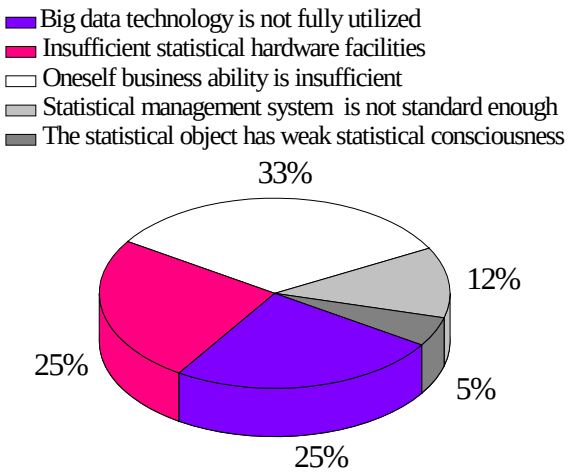

Fig.3 Statistical Work Influencing Factors

Figure 3 shows that the main factors influencing the education statistical work are their own professional ability, hardware facilities and whether they can make full use of big data technology. At the same time, school statistical management system and statistical consciousness of statistical objects are also the influencing factors.

4. Optimization Measures of Statistical Work in Medical Colleges and Universities under the Background of Big Data

(1) Improve the personnel training mode and establish a compound talent training mechanism. Medicine is a subject closely related to human beings, and it is also a field that people pay close attention to. Therefore, the statistical work of medical colleges and universities faces a huge amount of data. In the context of big data, schools should strengthen the training of statistical workers' ability of data analysis, processing and mining. Data technology develops with the development of computer technology, so it is necessary to cultivate and improve computer skills. Medical colleges and universities should establish a compound talent training mechanism to strengthen the training of staff's comprehensive ability.

(2) Make full use of big data technology to build information platform and realize data sharing. It is necessary to establish a scientific statistical work management system, reasonably design statistical content and avoid meaningless statistics. At the same time, the communication awareness of statistical workers should be strengthened to avoid the phenomenon of repeated reporting of statistical data.

(3) Scientific selection of statistical data with the help of big data technology. In the collection of statistical data, some data which are lack of universality are often collected [7]. It is necessary to

make rational use of the data screening technology in the field of big data, and eliminate some data that do not have general characteristics due to special factors. At the same time, NaiveBayes technology [8] in data mining can be introduced to analyze and process the statistical data intelligently. Moreover, it is necessary to fully analyze the characteristics of the research objects before the statistical work, and try to eliminate the distortion of statistical results caused by special factors.

(4) Do a good job in statistical publicity and strengthen the statistical awareness of statistical objects. Scientific propaganda, advertising effect and other means are used to let the statistical object understand the significance and purpose of statistics. If the statistics involve personal privacy, it is necessary to do a good job in the publicity of privacy protection work in advance, so that statisticians can eliminate the concerns of privacy exposure, enhance the awareness of cooperation, and ensure the smooth development of statistical work [9].

The above points fully show that the education statistics in medical colleges and universities need to be further optimized in terms of hardware and software. Only by adhering to the concept of "Both software and hardware should be grasped, and both should be excellent", can the scientific development of statistical work be ensured.

5. Conclusion

Under the background of big data, medical colleges and universities face the dual pressure of the rapid development of medical science and technology and the information age. Education statistics is the main part of medical colleges and universities teaching work. It is necessary to face up to many problems in education statistics. Only by clearly recognizing the problems and analyzing the causes, making full use of the advanced technology product of big data technology, implementing improvement measures pertinently, and firmly grasping the synchronous upgrading of hardware and software facilities, can the statistical work effectively serve the school and society, and remain invincible in the new era of rapid development of science and technology.

6. Acknowledgment

Higher education research project of Shandong University of traditional Chinese medicine in 2020

References

[1] Romero C, Ventura S. Educational data mining: A survey from 1995 to 2005. Expert Systems With Applications. 2006(1):23-24.

[2] Xue J J. Integrated development of artificial intelligence and big data, with foreign language discipline. Theory and Experiment. 2020(2):34-35.

[3] Baker Y. The State of Educational Data Mining in2009: A Review and Future Visions. Educational Data Mining. 2009(4):121-122.

[4] Zhao H. Studybased teaching and college teaching methods reform. Teaching theory and teaching reform. 2006(27): 231-123.

[5] Chahine S, Kulasegaram K, Wright S, et al. A Call to Investigate the Relationship Between Education and Health Outcomes Using Big Data. Academic Medicine Journal of the Association of American Medical Colleges, 2018:1.

[6] Vaitsis C, Nilsson G, Zary N. Visual analytics in healthcare education: exploring novel ways to analyze and represent big data in undergraduate medical education. [J]. PeerJ, 2014, 2: e683.

[7] Dunson, David B. Statistics in the big data era: Failures of the machine. Statistics & Probability Letters, 2018, 136:4-9.

[8] Nanfei S, Bingjun S, Jian L, et al. Lossless Pruned Naive Bayes for Big Data Classifications[J]. Big Data Research, 2018, 14: 27-36.

[9] Xu H. Application of artificial intelligence in computer network technology under the background of big data era. Journal of Physics: Conference Series, 2020, 1550(3):032033.