The Design of Mental Health Intelligent Evaluation System in Big Data Technology

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Abstract. In order to cultivate the healthy development of all-round senior talents, knowledge skills and mental health education is very important, the arrival of big data makes people's thinking habits and lifestyle changes, but also to the university mental health education work brought opportunities and challenges, to the mental health work also brought opportunities and challenges, big data and college mental health education work is a mainstream trend. This paper takes the characteristics of the big data era as the starting point, analyzes the impact of the mental health education of college students, and puts forward relevant countermeasures, aiming to enhance the effectiveness of college students' psychological education, so as to better adapt to the continuous development of education information.

Keywords: Big Data · Mental Health · Evaluation System Design

1 Introduction

With the development of big data, it has gradually expanded from the field of science and technology to many other fields, and has become a new means to improve social governance [2][3]. College students are in the stage of gradual maturity of values, thinking and emotions. Compared with the relatively closed high school period, they will come to different groups of people and receive a lot of information. With the rapid development of information technology, the popularization of the network enables college students to obtain more information. The mental health problems of college students are gradually receiving attention and attention. Under the new situation, colleges and universities must actively explore the new mode of mental health education for college students, vigorously strengthen mental health services, improve mental health literacy, and strive to build the mental health education service system of colleges and universities with Chinese characteristics [7].

2 Mental Health System Analysis in the Era of Big Data

Modern people have been used to the Internet thinking, and the traditional channel system of mental health is not competent for the needs of communication and connection. Big data collected by mental health system, unstructured data, can be summarized into

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clinical operation data, payment pricing data and R & D data, namely: clinical operation data including efficacy comparison and clinical decision support; payment pricing data including medical insurance system and automation system; R & D data including prediction model, individualized medical treatment, disease pattern analysis, and clinical trial statistics [6]. For these big data, a study must be carried out first, and then the results of one study can be integrated through systematic evaluation and meta-analysis to form structured data of clinical practice guidelines, health technology evaluation and clinical pathway, so that finally, significance can be mined and endowed to big data. Therefore, the systematic evaluation and meta-analysis of the evidence-based practice are essential in the big data research, and the big data analysis is crucial for the evidence-based practice of mental health.

3 The Influence of Mental Health Education in Colleges and Universities in the Era of Big Data

Computer technology in numerical computing, data analysis detection, automatic control, image processing neural network and wavelet analysis more efficient computer language is MATLAB (matrix laboratory), which use some common mathematical symbols to represent the problem and its solution, computing, visualization and programming function integration in an easy to use development environment, both matrix and vector calculation, can use specific methods in scalar language (such as C language, etc.). MATLAB's GUI (graphical user interface) image user interface is a graphical window containing a variety of objects. Users can interface layout and program the corresponding objects to activate the GUI objects to perform the corresponding behavior.

3.1 The Characteristics of Big Data

Big data, also known as massive data, refers to the scale of the data involved is so large that it is impossible to intercept, manage, process and integrate human information in a reasonable time. Big data has four characteristics, namely, large data volume, many data types, fast processing speed, low value density and so on. Big data has a certain impact on scientific research, human way of life and thinking, and has been widespread in people's daily life [1]. All walks of life in the society have traces of big data.In the campus field is no exception, the application value of big data is also gradually emerging in the campus field [4].

3.2 Opportunities Brought by Big Data to Mental Health Education in Colleges and Universities

(1) It is conducive to the construction of mental health education courses in colleges and universities.

Big data era background, with the use of Internet technology, the sharing between network resources become more convenient, the development of mental health education has certain help, online development and construction of college students' mental health online courses, the use of "micro", "MOOC" and other forms constantly enrich mental

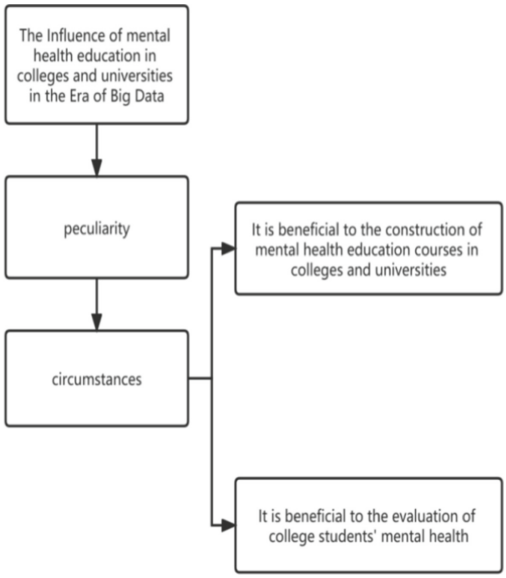

Fig. 1. Influence of mental health education in colleges and universities in the era of Big data.

health education online course resources in colleges and universities. Online teaching not only saves the teachers, but also the students' learning is not limited to practice and space restrictions (Wang, 2021). After the end of the course, students can still comb and supplement their knowledge in the teaching video, so as to consolidate the knowledge. Teachers can also have a detailed understanding of students' learning situation according to the learning time in the background to realize the diversity of evaluation.

(2) It is conducive to the mental health of college students evaluation [5].

Students' psychological status is a continuous and dynamic process. With the arrival of big data, all kinds of information can be presented in a digital form. Through the collection, analysis and research of various data, so as to get the mental health status of students. Big data is collected through corresponding equipment or software, and scientific data collection means are used to collect data together, so as to ensure the comprehensiveness and efficiency of all kinds of data information. In addition, through the new data generated in the process of continuous collection, the data is preprocessed to turn the data into data states that can be used in mental health education. Finally, the analyzed results are processed and visualized and presented, so as to scientifically analyze the students' mental health status [8].

The Apriori algorithm is one of the algorithms utilizing the association rules in data mining.Mining of association rules requires the mining of association rules that satisfy the user-defined minimum support and minimum confidence from the transaction database. In general, association rule mining is a process of 1–2 steps.

Step 1: Identify all frequent items sets in the transaction database.

Step 2: Create a strong association rule by the frequent item set, which is satisfied with the minimum

Rules for support and minimum confidence.
Support degree (support):
support(X,Y) = P(XY) = number(XY)
num(AllSamples)
confidence (confidence):
Confidence(X ← Y) = P(XIY) = P(XY)/P(Y)
Improvement degree:
Lif(X ← Y) = P(XIY)/P(X) = Confidence(X ← Y)/P(X)

The elevation represents the outline of X events in the presence of rate, and the ratio of probability to X event: the increase degree is the embodiment of the law between X event and Y event. If the increase degree is greater than 1, then X Y is Effective law, if the lift degree is less than or equal to 1, then X Y is invalid law. There is a special presence if the X and Y events are unique to each other Standing, Lif (X Y) = 1, P (XIY) = P (X) P (XIY) = P(X).

4 How to Establish the Mental Health Education Path for College Students

4.1 Establish the Awareness of College Students' Mental Health

In the era of big data, colleges and universities should apply big data technology to mental health education courses according to the development needs of The Times, and actively put the thinking mode of big data and understanding of students' mental health problems in the most important position [12]. To be specific, the management, teachers and other staff of colleges and universities should timely update the latest educational concepts, understand the in-depth knowledge of big data technology, and use big data as an important resource, so as to promote the innovation and development of mental health education mode in colleges and universities. In addition, colleges and universities should apply cloud computing and big data thinking to students' mental health management. First of all, for mental health professional teachers, they should realize the great value and significance of big data technology for mental health education, and clarify the important role of big data in teaching. Secondly, colleges and universities need to formulate diversified safeguard measures according to students' mental health situation to create a working environment and atmosphere for mental health education by using big data technology (Wang, 2021). Finally, in the daily teaching process, mental health teachers in colleges and universities should form big data thinking habits, sort out and analyze relevant questions, and timely grasp the mental health status of students.

4.2 Establish a Mental Health Data and Information Management System

In the process of the development of colleges and universities, the data utilization status generated by various management systems is not satisfactory, and it is difficult to provide effective support for the development of mental health [7]. Based on this, it is necessary for colleges and universities to establish and improve the mental health data management system, timely save and protect the data generated by students in various

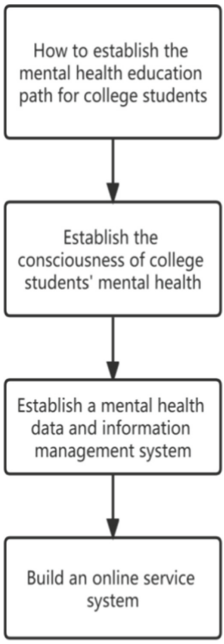

Fig. 2. How to establish the mental health education path for college students.

systems, summarize and sort out, and provide data support for students' mental health. On the other hand, establish a mental health service information system. Colleges and universities can establish a unified data management platform, realize the free flow of data between different management systems, and conduct unified data management and digital management of non-digital resources on campus (Wang, 2019). On the other hand, establish the student mental health records database. In the actual teaching process, teachers can establish the corresponding mental health database according to the questions and teaching content to provide professional solutions for students' psychological problems.

4.3 Build an Online Service System

There are a large number of Internet users in China, and a large amount of data are generated every day. Therefore, colleges and universities should use online instant messaging to build an online service community for students' mental health.In the Internet era, according to the spiral theory of addiction, colleges and universities need to create a positive "opinion environment" and make use of big data in psychological public opinion guidance and mental health [9]. Specifically, colleges and universities should establish an online mental health service community that integrates consulting services, theme discussion, psychological classroom and community services. The digital teaching concept is applied to the mental health education classroom in colleges and universities to maximize the maximum effectiveness of data. Online education methods such as online

assessment, interactive messages, MOOCs and micro-courses can be effectively combined together, actively play the role of online teaching in the mental health education of college students, form a benign network view, build an online service community in colleges and universities, and solve all kinds of mental health needs of students in a timely and effective manner.

In addition, the system should adopt B/S architecture design, should include personnel management system, demographic survey system, psychological self-help system, counselor evaluation management system, consultant intervention management system, student psychological evaluation system, psychological observation feedback system, file management system, data analysis system, consultation appointment management, psychological assessment management subsystem, and all functions of the system can be run on the mobile phone. The system should support the construction of a "dormitory-class-department-school" four-level psychological crisis protection network to build a four-level crisis database. Without the written authorization of users, it cannot collect any data from students.

5 Conclusion

The application of big data in college education and management provides a new idea for the reform of students' mental health and management mode. Using the function of "portrait" to accurately evaluate psychological crisis, innovate mental health teaching mode, cultivating double-qualified talents with both big data technology and mental health knowledge, and proposing the innovative path of mental health education mode of university students under the perspective of big data. It should be noted that colleges and universities should pay attention to the protection of students' mental health privacy and health data when using big data technology to promote the development of mental health data (Wang, 2021). In addition, teachers should also rely on professional knowledge to dig deep into the psychological situation of students.

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