



# Research on Mental Health Investigation and Early Warning of College Students Based on Smart Campus

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**Abstract.** Contemporary university students have a strong sense of individuality, and their psychological problems are hidden and complex, so traditional psychological surveys can no longer meet existing needs. How to use the new generation of information technology to solve this problem and establish a "24/7, one-stop" early warning mechanism has become a hot and difficult research issue. Therefore, a survey was carried out on the psychological status of 26,547 students at a university in the western region of China using an electronic questionnaire through a smart campus platform built by the university, and the students' mental health problems were classified into four levels. The statistical data collected by the electronic questionnaire was analysed through big data technology and 1,080 students with mental health problems at all levels were unearthed, accounting for 4.07% of the total number of students surveyed. There were 3 students with Level 1 psychological problems (0.28%), 53 students with Level 2 psychological problems (4.91%), 225 students with Level 3 psychological problems (20.83%) and 799 students with Level 4 psychological problems (73.98%). Based on the results of the survey and analysis, a psychological crisis early warning mechanism based on the smart campus platform is proposed, and a psychological crisis detection and early warning system based on big data technology is constructed.

**Keywords:** Smart Campus; College students; Mental Health Investigation; Psychological crisis warning

## 1 Introduction

With the accelerating pace of society, the influence of diverse social values and virtual networks in recent years, all kinds of complicated information are flooding the study and life of university students. University students are in the early stages of adulthood, their physical and mental development has not yet fully matured, and they carry high expectations and high demands from society and their families for their growth and success, which makes this group suffer from higher psychological pressure and prone to various psychological problems. In July 2021, the General Office of the Ministry of Education's Notice on Strengthening the Management of Students' Mental Health proposed to "improve the screening and early warning mechanism and implement early

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and precise interventions", and at a meeting held in November of the same year to promote the work of mental health education for students in colleges and universities nationwide, it was stressed that "scientific identification, real-time warning, professional consultation and proper response are the keys to doing a good job, the process management should be strengthened, psychological assessment should be comprehensively covered and accurately applied, and early warning management should be 24/7 and one-stop"<sup>[1]</sup>.

Article 8 of China's Education Modernisation 2035 mentions that in the age of information technology, educational change should be strengthened, intelligent campuses should be coordinated, campus management, teaching and service platforms should be integrated and intelligent, and student management reform should be promoted through modern technology<sup>[2]</sup>.

## **2 Survey and analysis based on smart campus**

The survey used the smart campus platform of a university in the western region to conduct an electronic questionnaire for 26,547 students at the university, including psychological screening category 1 and 2 students, students of concern in interviews, students of daily focus and other students who need to be screened.

### **2.1 Basis for classification of survey respondents**

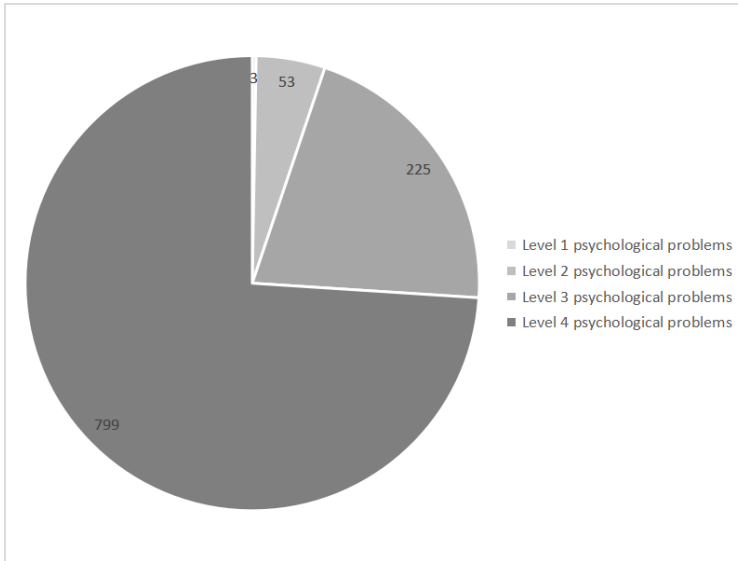
This survey classifies university students' psychological problems into four levels. Level 1 psychological problems refer to students who have a suicidal crisis and commit suicide, including suicide deaths and suicide attempts; Level 2 psychological problems refer to students with suicidal tendencies, including suicidal ideation and suicide preparation; Level 3 psychological problems refer to students with serious psychological problems, although they do not have a suicidal crisis or suicidal tendency crisis, but have serious psychological problems such as academic, interpersonal, emotional and adaptive problems, and seriously affect social functioning; Level 4 psychological problems are defined as students with general psychological problems, with academic, interpersonal, emotional-emotional and adjustment psychological problems, but with generally normal social functioning.

### **2.2 Status of survey results**

#### **Basic information on survey respondents.**

The survey identified a total of 1,080 students with psychological issues across all levels, accounting for 4.07% of the total number of surveyed students. Among them, 3 students had first-level psychological problems, accounting for 0.28%; 53 students had second-level psychological problems, accounting for 4.91%; 225 students had third-level psychological problems, accounting for 20.83%; 799 students had fourth-level psychological problems, accounting for 73.98%; 5.19% of students had crisis-level psychological problems; And 8.06% of students had been diagnosed with psychological

problems by professional hospitals. The specific details are shown in Figure 1. Compared with the results of the 2022 survey, the proportion of students with psychological problems at all levels has increased (2.73% in 2022), while the proportion of students with first and second-level psychological problems has decreased (7.85% in 2022).



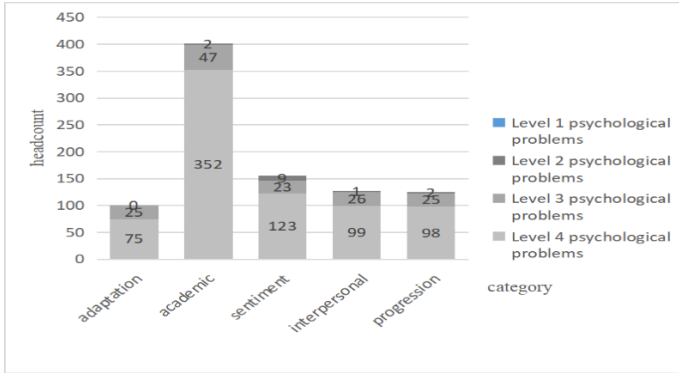
**Fig. 1.** The general situation of students with psychological problems at all levels

### Major psychological problems of survey respondents.

The specific manifestations of students' psychological problems are classified according to their severity into three main categories: general psychological problems (including adjustment problems, academic problems, emotional problems, interpersonal problems and developmental problems), suspected psychological disorders (including suspected neurosis, suspected anxiety disorder, suspected obsessive-compulsive disorder, suspected depression, suspected personality disorder, suspected bipolar disorder and suspected schizophrenia), and confirmed psychological disorders.

#### *Students with general psychological issues.*

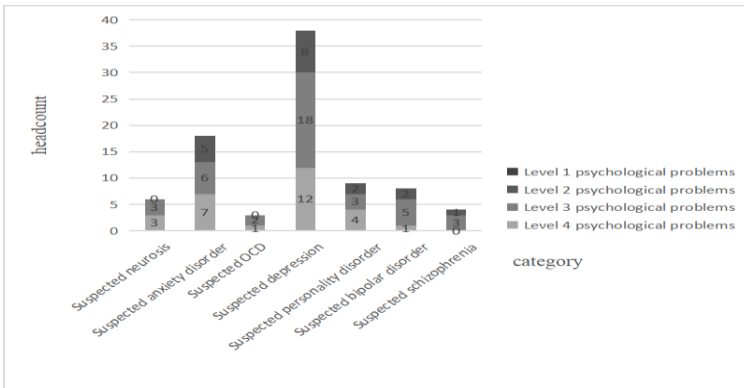
Among 1080 students with psychological problems, there were a total of 907 students with general psychological problems, accounting for 83.98%. Academic problems ranked first, followed by emotional problems, interpersonal problems, developmental problems, and adaptation problems. This data indicates that academic problems have become the main factor affecting the mental health of college students, while some students also have poor emotional regulation and insufficient interpersonal communication skills. The number of students with different types of psychological problems is shown in Figure 2.



**Fig. 2.** Students with general psychological issues

*Cases of students with suspected mental illness.*

Among the 1080 students with psychological problems, 86 were suspected of mental illness, accounting for 7.96%. Among them, the proportion of suspected depression is the highest, followed by suspected anxiety disorder, and the screening results are basically consistent with the actual situation of college students across the country and are roughly consistent with the data of the school's mental health education center, which usually receives students' psychological counseling. This data shows that the more serious problems that plague college students are mostly depression and anxiety. The number of people with specific types of questions is shown in Figure 3.

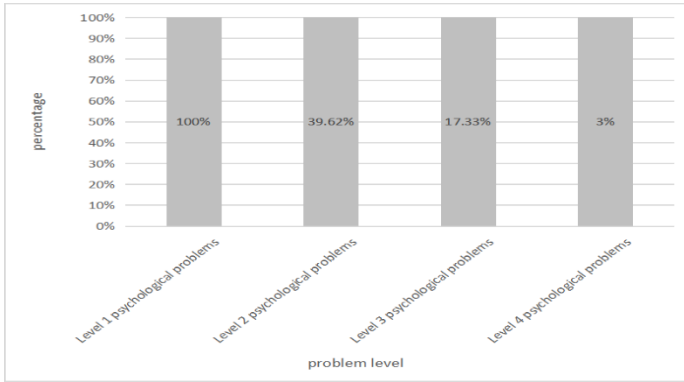


**Fig. 3.** Cases of students with suspected mental illness

*Diagnosed psychological disorders in students.*

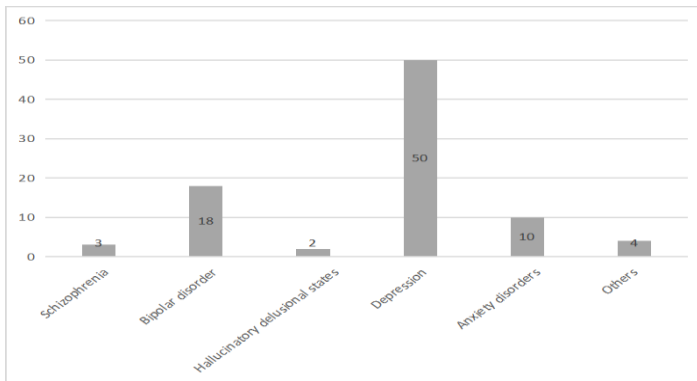
Among 1080 students with psychological problems, 87 students have been diagnosed by a professional hospital, accounting for 8.06%. Among them, all first-level psychological problems (students who have attempted suicide) are diagnosed students (including bipolar disorder/obsessive-compulsive disorder; anxiety disorder; depressive state; acute stress reaction), and the proportion of diagnosed students in second-level psychological problems is 39.62%, 17.33% in third-level psychological problems, and

3% in fourth-level psychological problems. This data indicates that students diagnosed with mental illness are at a much higher risk of crisis than those who are undiagnosed. The specific proportions of diagnosed students with mental illness in each level of psychological problems can be found in Figure 4.



**Fig. 4.** The proportion of diagnosed psychologically-disordered students among various levels of psychological issues

Further investigation found that among the 87 students, depression was the most diagnosed problem, consistent with the usual student psychological counseling situation. Depression can easily lead to campus crisis events and should be highly valued by schools. In addition, bipolar disorder, schizophrenia, and delusional states are all in the category of severe mental illnesses and should also be given special attention by schools. For specific diagnoses and symptoms of students with psychological disorders, please refer to Figure 5.



**Fig. 5.** The specific symptom of students diagnosed with a mental illness

The findings show that there are more students with general psychological problems and fewer students with suspected and confirmed psychological disorders, but a greater proportion of students with suspected and confirmed psychological disorders are in the

first and second levels of psychological problems, which are more likely to lead to psychological crisis events.

### **2.3 Psychological problem cause analysis.**

Combining the questionnaire data collected on the university's smart campus platform with the statistical analysis of psychological counselling built into the platform, the main reasons for students' psychological problems are as follows:

#### **Academic pressure.**

As a science and engineering college, the school's students have relatively heavy coursework and difficulty in learning, which leads to some students experiencing learning difficulties. Additionally, the university's teaching model differs from the strict supervision model of high school, which causes students to have some difficulties in managing their free time and engaging in independent learning. Furthermore, some students are not interested in their major or are pessimistic about their employment prospects, which results in a lack of enthusiasm for studying. The normalization of online classes during the pandemic has posed a significant challenge to students with poor self-directed learning skills.

#### **Emotional imbalance.**

The age characteristics of college students determine that their emotional experiences are exceptionally rich, but their emotional self-control is insufficient. On the one hand, heavy academic pressure, negative interpersonal situations, and other factors easily trigger anxiety, depression, and other emotions in students. On the other hand, some students face conflicts and breakups in their intimate relationships due to inadequate relationship management skills, which can further lead to anger, pain, and other emotions. In addition, due to the impact of the epidemic, students' activity space is limited, their self-regulation methods are reduced, and they are prone to suppress emotions such as anxiety and depression.

#### **Confusion in communication.**

Good interpersonal skills play a crucial role in the development of college students, however, contemporary college students have varying degrees of confusion and misunderstanding regarding interpersonal communication, and related issues are becoming increasingly prominent. Digging deeper, one reason is that some students place a high value on establishing good interpersonal relationships with others, and are overly cautious and sensitive in their interactions with people, which can lead them to feel constrained and perform poorly in social situations; The second issue is that some students lack social skills and abilities to interact with others due to a lack of knowledge and experience in this area; Thirdly, a small number of students may have developed a fear of interpersonal communication due to their past experiences, causing them to close

themselves off emotionally; Fourthly, there are a few students who have serious personality defects and find it difficult to integrate with other students.

### **Confusion of self-development.**

College students may experience varying degrees of confusion and uncertainty regarding their academic pursuits and future prospects upon entering the university campus and embarking on a new learning journey. On the one hand, some students lack sufficient role identification and maintain a high school mentality even after entering university, focusing mainly on completing basic coursework without deep consideration of why they are studying and what they are studying for. On the other hand, students may not fully identify with their chosen major. Although they have enrolled in a particular program, they may not be clear on the career prospects and what they need to study to succeed. Furthermore, students who have been transferred to other majors may have poor resilience in the face of setbacks, and may become trapped in their own psychological gap, unable to extricate themselves. When faced with difficulties, they may shrink back, or even give up on themselves, leading a chaotic life.

### **Maladaptation.**

In the transition phase from high school to college, freshmen may experience various forms of maladjustment. First, some students have environmental adaptation problems, such as not adapting to climate, diet, hardware facilities, etc.; Second, some students have interpersonal adaptation problems, such as living on campus for the first time and living in a dormitory group; Third, some students have the problem of not adapting to the teacher's teaching method, and university teachers use multimedia equipment to teach, and the teaching speed is fast, which requires students to follow up closely; Fourth, staying away from parents for a long time is a great challenge for students with poor self-care ability, such as how to organize internal affairs and how to arrange living expenses, which may become an adaptation problem faced by new students.

## **3 Psychological crisis response and early warning system based on smart campus**

The large number of psychological crises among university students in the online news shows that the psychological crises of university students are "hidden" and "sudden", and the traditional detection methods can no longer detect the psychological crises encountered by university students in time<sup>[3-4]</sup>. Based on the mental health survey of college students in this university, it can be found that there are certain shortcomings in the work of many universities for college students' psychological crisis, such as the lag of psychological crisis monitoring and early warning, the psychological monitoring results are greatly disturbed by human factors, there are data silos and other phenomena, it is difficult to track college students' psychological health condition in real time, and it is impossible to carry out effective psychological crisis early warning and treatment, and the psychological education work of universities is in a difficult situation. In the

face of this dilemma, this study proposes corresponding countermeasures and an early warning system based on the advantages of the smart campus platform.

### 3.1 Establishing an early warning system

With the advancement of information technology in national education, information platforms such as academic affairs, academic staff, accommodation and financial assistance have been commonly established in universities. Relevant research scholars believe that we should establish big data thinking and build a psychological crisis prevention mechanism for college students based on all-round information collection, supported by systematic crisis assessment, precise psychological intervention and three-dimensional continuous feedback<sup>[5]</sup>. Therefore, there is a need to use the platform of smart campus to further explore the advantages of using big data technology to enhance the level of psychological crisis monitoring and early warning in universities.

Through the smart campus platform, a psychological crisis detection and early warning system is built. The system needs to start from three aspects: working mechanism, technical platform and team building. The main framework is shown in Figure 6.

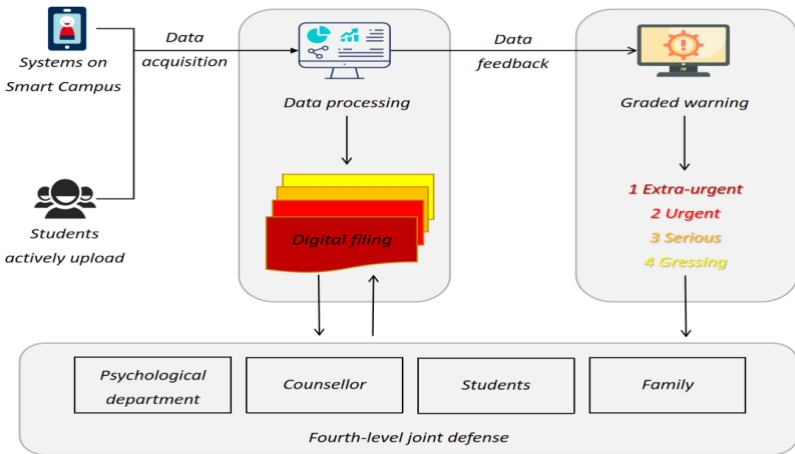


Fig. 6. Psychological crisis monitoring and early warning system

#### Working mechanism.

The university co-ordinates the establishment of a university student psychological monitoring work department<sup>[6]</sup>, collaborates with various functional departments at the university level and the administrative/teaching departments of each college, and the departments cooperate with each other to help build a psychological crisis warning system for university students. Rules and regulations are drawn up according to the content of the work, and the job responsibilities of each division or working group within the department are defined to ensure that the whole process of psychological crisis warning is guaranteed. To protect privacy<sup>[7]</sup>, as the process of psychological monitoring and



early warning involves personal privacy, it is all the more important for department leaders and staff to strictly comply with relevant laws and regulations to ensure that students' privacy is not leaked and to maintain the credibility of the psychological monitoring department and the school. For Level 1 warning students, the monitoring department needs to assign the head of the working group, the teacher of the psychological centre, the relevant person in charge of the college, the counsellor and classmates to monitor the whole process, contact the guardian, guide hospitalization and medical treatment, ask about psychological needs and solve related problems in a timely manner; for Level 2 warning students, the monitoring department needs to notify the psychological centre and the counsellor to provide the students with psychological support and for Level 3 warning students, counsellors are required to follow up and guide the students to the psychological centre to solve their psychological problems; for Level 4 warning students, counsellors or class leaders should ask the students about their psychological status and help them solve their problems.

### **Technology platforms.**

Relying on the smart campus platform, integrate the systems of psychological assessment, academic affairs and academic staff, and do a good job of data sharing and data collection to provide real-time and accurate decision-making basis for psychological monitoring and early warning. Optimising psychological monitoring algorithms and psychological crisis warning indicators<sup>[8]</sup>, the system needs to continuously learn itself during the psychological monitoring process to filter out the most effective parameters and indicators and build a usable database autonomously. A psychological crisis grading and early warning system is set up to classify the monitored psychological state of students into grades and deal with them according to the four levels of psychological crisis early warning response plan.

### **Team Building.**

Rely on the former psychological centre to supplement the big data technicians. At present, universities are generally equipped with fully qualified teachers for mental health education in accordance with national standards, and after years of work experience, most of the psychological instructors have excellent professional skills. However, the original teaching staff basically do not have the talents to master the big data technology, so they have the data accumulated for many years, but are unable to integrate and use these data.<sup>[9]</sup> Therefore, it is necessary to coordinate the talents of the school's technical and psychological departments, integrate them into a new working group on big data, bring in relevant technicians and train technical teams through social recruitment or our student associations. The student body plays an important role within the psychological crisis monitoring and early warning system as it strengthens the student workforce and psychological problems are difficult to measure, detect and mitigate. Students need to be encouraged to participate in technological learning as well as to develop awareness of the need to identify abnormal behaviour through social networks and in everyday life and to upload it to the psychological crisis monitoring and early warning system in a timely manner.

**Digital Archiving.**

For the students with mental health problems found in the survey, universities should do a good job of building a digital file of psychological problems for one person, and track and manage these students in a graded manner in the smart campus platform<sup>[10]</sup>; at the same time, they should pay long-term attention to each student, especially focusing on students with first- and second-level psychological problems, so as to understand and judge the possible negative effects of new realistic stimuli in a timely manner, and help avoid the deterioration of psychological problems through effective measures.

**3.2 Other responses**

For students found to be in psychological crisis, universities should actively initiate a four-level crisis warning system and carry out all-round crisis management through home-school linkage and medical-school linkage.

**Linked interventions.**

Active response crisis management using family visits, referral to the school's psychological centre for counselling, and close attention by fellow students, et al<sup>[11]</sup>; At the same time, the Student Mental Health Education Centre actively responds to crisis students through psychological counselling, counselling referrals, case conferencing with colleges and counsellor case supervision, and other ways of working together for crisis intervention.

When it comes to crisis intervention, the school, college, class and university dorm, any one of which is indispensable, should form a four-tier linkage mechanism. For example, if a person wants to move, firstly his brain has to want to move, secondly his body and back have to move, and finally to walk he needs to move his legs and feet, if one part of the process does not keep up, the whole effect of walking will be greatly reduced, and he may even fall down. Therefore, it is necessary to seek the attention of school leaders to mental health education work, as well as to strengthen the training of grass-roots colleges, and to strengthen the training and management of class psychological committee members and dormitory "heart clearers", so as to give full play to the role of peer psychological support, and to protect the mental health of students from all angles.

**Education Promotion.**

The human psyche is constantly changing and new real-life stimuli are likely to stimulate the emergence of normal student psychological problems in the screening<sup>[12]</sup>. Therefore, it is particularly necessary to do a good job in educating all students on mental health, increasing their knowledge base on mental health, improving their ability to cope with problems and improving their psychological quality. Specifically, on the one hand, we should further develop the role of the main classroom of mental health education courses for university students to popularise general psychological knowledge; on the other hand, we should seize the mental health education publicity season as an important publicity channel to pass on more mental health knowledge and

teach more coping skills to students.

The survey found that some of the students' problems had improved considerably after the intervention work of the secondary school counselling station and the counselling centre, but when they returned to the classroom to meet a certain teacher, to the teaching room to meet their tutors, and to their homes to face their parents, the students' psychological condition immediately reverted to their original state or even became worse. Therefore, it is particularly necessary to create a good atmosphere for psychological education and encourage all staff such as tutors, parents, class teachers, especially the academic staff team, and tutor groups to participate in the process of psychological education, so as to continuously develop the concept of whole-person education and improve the effectiveness of psychological education.

## 4 Conclusions

Based on the data from the psychological assessment of the Smart Campus Platform, this study analysed the statistical data collected by the electronic questionnaire through big data technology and unearthed 1,080 students with mental health problems at all levels, accounting for 4.07% of the total number of students surveyed. There were 3 students with Level 1 psychological problems (0.28%), 53 students with Level 2 psychological problems (4.91%), 225 students with Level 3 psychological problems (20.83%) and 799 students with Level 4 psychological problems (73.98%). The main internal causes of psychological problems are excessive academic stress, abnormal emotional imbalance, confusion about peer interaction, confusion about self-development and poor adjustment to school life. Based on the results of the survey and analysis, relevant countermeasures and a linked early warning mechanism for psychological crisis based on the smart campus platform are proposed, and a psychological crisis monitoring and early warning system based on big data technology is constructed.

To sum up, colleges and universities should combine big data technology with psychological crisis monitoring and early warning system according to the linkage mechanism and technical advantages of smart campus platform, to make up for the shortcomings of traditional methods such as poor timeliness, inaccuracy and incomprehensiveness, so as to achieve campus-wide monitoring and maintenance of college students' psychological health, realize "real-time monitoring, efficient early warning and rapid response" of college students' psychological status, enhance the height of college mental health education work, and protect students' smooth growth and success.

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## Reference

1. The Chinese Ministry of Education. (2021) The Ministry of Education Holds a National Conference on Promoting Mental Health Education for College Students. [http://www.moe.gov.cn/jyb\\_zzjg/huodong/202111/t20211130\\_583568.html](http://www.moe.gov.cn/jyb_zzjg/huodong/202111/t20211130_583568.html).
2. The State Council of China.(2019) The Central Committee of the Communist Party of China and the State Council issued the "2035 Modernization of Education in China". [http://www.moe.gov.cn/jyb\\_xwfb/s6052/moe\\_838/201902/t20190223\\_370857.html](http://www.moe.gov.cn/jyb_xwfb/s6052/moe_838/201902/t20190223_370857.html).
3. Yu, Y.C. (2017) The dilemma and countermeasures of college psychological crisis early warning in the context of Big data. *Journal of Jinzhou Medical University (Social Science Edition)*, 15(4): 80-83. [https://wenku.baidu.com/view/5457680fb80d6c85ec3a87c24028915f804d84d4?fr=xueshu&\\_wks\\_=1687660454172](https://wenku.baidu.com/view/5457680fb80d6c85ec3a87c24028915f804d84d4?fr=xueshu&_wks_=1687660454172)
4. Li, T.T., Li, T., Guo, X. (2021) Early warning of college students' psychological crisis based on social media Big data. *Modern Distance Education Research*, 33(4): 92-101. <https://d.wanfangdata.com.cn/periodical/xdycjyyj202104010>
5. Wang, C.X. (2019) "Big data" Paradigm and "New Media" Senseless Intervention -- A New Way to Prevent Psychological Crisis of College Students. *Journal of Shenyang University (Social Sciences Edition)*, 21(3): 328-331. [https://wenku.baidu.com/view/ca93fa71fe4ffe4733687e21af45b307e971f936?fr=xueshu&\\_wks\\_=1687660819135](https://wenku.baidu.com/view/ca93fa71fe4ffe4733687e21af45b307e971f936?fr=xueshu&_wks_=1687660819135)
6. Fan, Y.L. (2019) Innovative research on college students' mental health education in the Big data environment. *Journal of Jilin Agricultural Science and Technology College*, 28(3): 20-22. [https://wenku.baidu.com/view/d3f6e39a571810a6f524ccbff121dd36a22dc438?fr=xueshu&\\_wks\\_=1687660931693](https://wenku.baidu.com/view/d3f6e39a571810a6f524ccbff121dd36a22dc438?fr=xueshu&_wks_=1687660931693)
7. Chen, L. (2018) Research on the role of Big data in improving college students' mental health education. *Journal of Jiangsu Second Normal University*, 34(6): 112-115. [https://wenku.baidu.com/view/6d042acf3b68011ca300a6c30c2259010302f362?fr=xueshu&\\_wks\\_=1687661048775](https://wenku.baidu.com/view/6d042acf3b68011ca300a6c30c2259010302f362?fr=xueshu&_wks_=1687661048775)
8. Zhang, W.F., Tong X.L. (2019) Innovation path of college mental health education model in the era of Big data. *Journal of Shaanxi University of Technology (Social Science Edition)*, 37(5): 71-76. [https://wenku.baidu.com/view/5f4a490ef22d2af90242a8956bec0975f465a4e4?fr=xueshu&\\_wks\\_=1687662226808](https://wenku.baidu.com/view/5f4a490ef22d2af90242a8956bec0975f465a4e4?fr=xueshu&_wks_=1687662226808)
9. Tang, Y. (2019). Construction of intervention mechanism for college students' psychological crisis under the background of big data. *Basic & clinical pharmacology & toxicology*, (S1): 124. [https://www.nstl.gov.cn/paper\\_detail.html?id=44c139458bc4ba4fb44838ecd84359ce](https://www.nstl.gov.cn/paper_detail.html?id=44c139458bc4ba4fb44838ecd84359ce)
10. Cao, W., Fang, Z., Hou, G., Han, M., & Zheng, J. (2020) The psychological impact of the COVID-19 epidemic on college students in China. *Psychiatry Research*, 287:112934. <https://doi.org/10.1016/j.psychres.2020.112934>
11. Guo, Q., Huang, Y.Q., Liu, Z.R., & Wang, H. (2013) Psychological symptoms and associated risk factors in Chinese freshmen: a three-year follow-up study. *Chinese Medical Journal*, 126(18): 3499-3504. <https://doi.org/10.3760/cma.j.issn.0366-6999.20131201>
12. Auerbach, R.P., Alonso, J., Axinn, W. G., Cuijpers, P., Ebert, D.D., & Green, J.G., et al. (2016) Mental disorders among college students in the world health organization world mental health surveys. *Psychological Medicine*, 1(14): 2955-2970. <https://doi.org/10.1017/S0033291716001665>

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