

# *Network Mental Health Analysis and Guidance System for Minority College Students Based on Big Data*

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**Abstract:** At present, the mental health problems of ethnic minority college students have been widely concerned by colleges and universities. Although there are many studies, the corresponding solutions and resources are relatively scarce, and the social attention is not high. In order to better analyze and solve the related problems of the network mental health of ethnic minority college students, this paper constructs the network mental health analysis and guidance system of ethnic minority college students on the basis of big data, and selects 955 ethnic minority college students in our province as the experimental objects, including 543 boys, 412 girls, 310 urban students and 645 Township students. In this study, we used questionnaire and symptom Checklist-90 (SCL-90) to investigate 955 minority college students in Minzu University. 928 valid questionnaires were collected, and the effective recovery rate was 97.1%. After the questionnaire survey, the data were collected and input and processed by spss20.0 statistical software, and the SCL-90 scores were scored according to five levels. The results showed that the positive detection rate of SCL-90 was as high as 25.9%, while the detection rate of College Students' psychological problems was 3.79%-26.14%. Therefore, the survey results show that the positive detection rate of the sample has been close to the maximum value of this range, indicating that the network mental health status of minority college students is not ideal. It can be seen that the research and design of the network mental health analysis and guidance system for minority college students based on big data is of great value.

## **1. Introduction**

Due to the development of Internet technology and the wide use of computers, all aspects of people's lives may be affected by it [1-2]. Because the Internet is not constrained by time and space, coupled with advanced network technology and equipment, it can timely spread the world's

excellent culture to minority college students, so that minority college students can communicate in a more inclusive environment to a greater extent and learn more information and knowledge [3-4]. With the increasing support for ethnic minorities in China, ethnic minority students have more opportunities to receive higher education, and the mental health and development of ethnic minority college students are also widely concerned by colleges and universities, In recent years, our country pays more attention to the network mental health of college students. At the same time, the network mental problems of minority college students need more specific and reasonable analysis and guidance, and further form a scientific system [5].

Because of the huge amount of network information and wide range of transmission, ethnic minority college students have the material carrier of multicultural communication, increased access to information and information, improved their learning ability and changed their learning philosophy [6-7]. At the same time, the Internet is like a "double-edged sword". When people study and work on the Internet, to a large extent, they are easily confused by some bad information, and even have a bad impact on their physical and psychological [8-9]. Therefore, it is of great practical significance for building a harmonious campus atmosphere and the harmony and stability of national unity to study the network mental health to cultivate the values of minority college students and improve the education methods of minority college students[10].

In order to better carry out the research, this paper first summarizes the impact of the network on minority college students, and expounds the improvement of the network psychological education system of minority college students from the perspective of big data. Secondly, we use the questionnaire survey method to analyze the problems existing in the network psychological guidance system of ethnic minority college students in China. The data collected from the questionnaire are input and processed by spss20.0 statistical software, and the SCL-90 is scored according to five levels. In view of the corresponding problems, this paper puts forward the corresponding reform measures under the "big data" to further improve the network mental health analysis and guidance system of minority college students.

## **2. Overview of Network Psychology of Minority College Students**

### **2.1. The Influence of Internet on Minority College Students**

With China's increasing support for ethnic minorities, ethnic minority students have more opportunities to receive higher education. In recent years, China has paid more attention to the network mental health education of college students. It is clear that the mental health and development of ethnic minority college students are also generally concerned by colleges and universities. The network has the characteristics of space-time and diversity, which has more or less impact on the mental health of minority college students, mainly in the following two aspects: positive and negative

1) The network has increased the access to information and knowledge areas of minority college students, and improved the level of knowledge. Because most of the minority college students come from rural areas, pastoral areas and other remote areas, they used to get less information, but after the popularity of the Internet, they can send and receive information more easily. In the network environment, minority college students broaden their horizons and knowledge.

2) The network makes the minority college students closer to others and enhances their interpersonal communication ability. Because of the differences of national culture and language boundaries, minority college students are generally not good at communicating with students of other nationalities.

3) The shortcut of network information transmission enables the minority college students to participate in the discussion and obtain various information resources more independently, which provides a better choice for the cultivation and improvement of their personality. The network has changed the original narrow communication space of minority college students, and increased the communication space between minority college students and other minority students or groups.

(2) The negative influence of Internet on Minority College Students

1) To a large extent, network culture is easy to interfere with the values of ethnic minority college students and make their values confused. There are many western capitalist countries preaching immoral ideology and cultural values on the Internet, and some separatist forces and religious extremists also try to hold negative propaganda activities through the Internet, so as to shake the ideals and beliefs of minority college students, and produce extremely high adverse effects to a great extent, which has a serious impact on safeguarding the sovereignty of the motherland and national stability Threats.

2) To some extent, network culture weakens the ideological and moral consciousness of minority college students and makes them lose their moral value. In the unreal cyberspace, people's existence on the Internet is in the form of symbols, which is not specific. The imprecision and virtuality of network communication cause the failure of social supervision to a great extent.

3) Network culture makes the psychological quality of college students become low in many ways, and a variety of psychological problems follow. In real life, some minority college students are gradually reluctant to express their feelings to others and communicate with their relatives and friends. Come on, on the contrary, they often spend most of their time online seeking spiritual solace. If they last for a long time, they may have emotional and psychological problems to a large extent.

## **2.2. The Improvement of Network Psychological Education System for Minority College Students**

Through the analysis of the above survey on the psychological characteristics and psychological teaching characteristics of ethnic minority college students, we can build a mental health work system. This kind of psychological education mode aims at the mental health education of minority college students, forms different levels, coordinated and unified quality education requirements, and meets the requirements of College Students' mental health education. The psychological education system of ethnic minority college students needs a comprehensive education system at the university level and social level.

(1) Social education

From the social level, the psychological characteristics of minority college students are caused by the comprehensive social environment. Under the premise of carrying forward the theory of national autonomy, we need to strengthen the popularization of the party spirit. At the same time, in education, we need to purify the community environment and provide positive community psychological atmosphere for minority college students. In mental health education, we should vigorously advocate the psychological quality education mode of combining family, society and University, coordinate the construction of social culture and campus culture, and ensure that students receive unified education.

(2) Higher education

In the psychological education of minority college students, the construction of curriculum system is the core part of psychological health education in Colleges and universities. In the survey,

it is found that the curriculum in Colleges and universities can not meet the daily growing psychological needs of college students. Therefore, it is also necessary to investigate the psychological education needs of minority college students and construct the curriculum system of psychological education for college students.

### 2.3. Statistical Methods

Taking the SCL-90 score of five levels as the judgment elements of the standard level, the different elements are compared according to the weight meaning table, and the basic judgment matrix is obtained by calculating the ranking weight vector of the comparison elements.

$$w_i = \frac{1}{n} \sum_{j=1}^n \frac{a_{kj}}{\sum_{k=1}^n a_{kj}} \quad i = 1, 2, \dots, n \quad (1)$$

SPSS software was used for statistics. Mean  $\pm$  SD was used for count data, and percentage (%) was used for count data.  $X^2$  and t test were used for comparison between groups, with  $P < 0.05$  as the difference. The formula is as follows:

(1) Arithmetic mean value:

$$\bar{x} = \frac{\sum_{i=1}^n x_i}{n} \quad (2)$$

(2) Standard deviation:

$$\sigma = \sqrt{\frac{1}{N} \sum_{i=1}^N (x_i - \mu)^2} \quad (3)$$

## 3. Ideas and Methods

### 3.1. Research Objects and Methods

(1) Research objects

There are 955 minority college students in a university for nationalities, including 543 boys, 412 girls, 310 urban students and 645 Township students.

(2) Research methods

The SCL-90 symptom checklist and questionnaire were sent out to 955 minority college students in the University for nationalities. 928 valid questionnaires were collected, and the effective recovery rate was 97.1%.

#### 3.2 Analysis Method

SCL-90 was scored according to five grades (1-5), and the scores of each factor, total average score and total score were calculated respectively. The positive detection rate was calculated by factor score  $\geq 3$  and total score  $\geq 160$ .

## 4. Analysis of Network Psychology

### 4.1. Mental Health Status of Minority College Students

In order to analyze the mental health status of minority college students, the SCL-90 scores of minority college students of different genders are investigated and compared as shown in Table 1.

Table 1. Results of SCL-90 scores of ethnic minority college students of different genders

Factor score	Male > 2	Female > 2	Male>3	Female >3
Somatization	2.0	1.3	0	0
Obsessive Compulsive Symptoms	7	7.5	0	0.4
Interpersonal Sensitivity	5.6	6.5	0.4	1.1
Depressed	4	3.3	0.2	0.5
Anxious	4.6	3.5	0.1	0.3
Hostile	5.4	5.5	0.7	1.3
Terror	2.3	3.4	0.3	0.3
Paranoia	2.0	2.4	0.1	0.2
Psychotic	2.9	1.8	0	0
Other	2.9	3.1	0.2	0.2

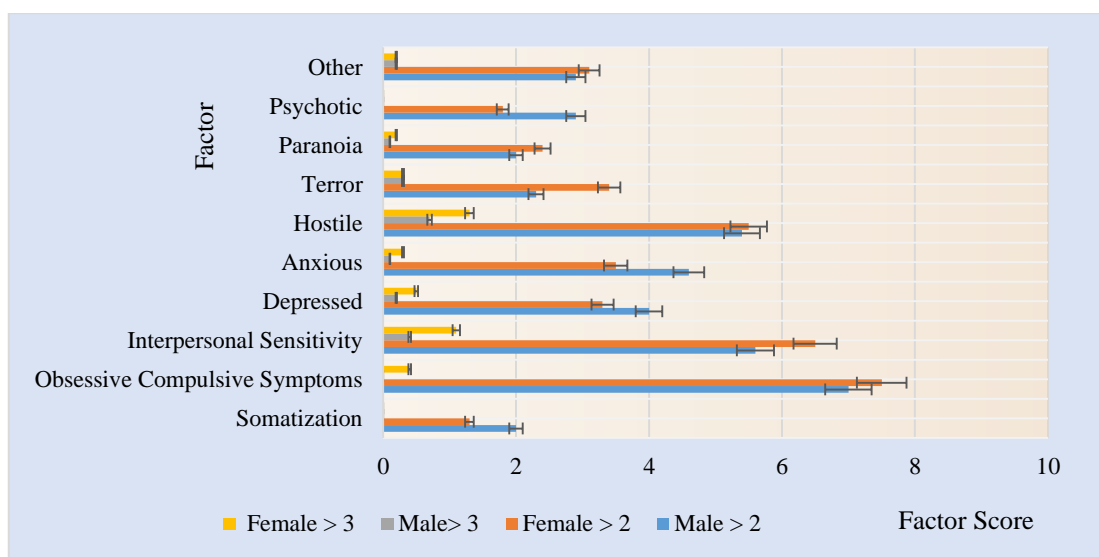


Figure 1. Results of SCL-90 scores of ethnic minority college students of different genders

As can be seen from Figure 1, 75.6% of minority colleges and universities have a variety of mild adverse reactions, and 4.3% of minority colleges and universities have a variety of obvious mental health problems. Therefore, it is urgent and necessary to strengthen the guidance of College Students' network mental health education. Due to the further development of information technology, big data has touched every aspect of Minority College Students' life. Although the network has its advantages and disadvantages, as long as the network mental health system workers in Colleges and Universities Guide scientifically and reasonably, they can guide ethnic minorities to a great extent. College students should "make good use of the Internet", make the network a powerful weapon for social progress, contribute as much as possible to build a harmonious society, and build a solid foundation for the harmony and stability of ethnic areas.

## 4.2. Comparison of SCL-90 Scores of Minority College Students of the Same Professional Category

Comparing the SCL-90 scores of ethnic minority students of different majors, except that the scores of mental factors of liberal arts students are significantly higher than those of science and engineering students, there is no significant difference in the SCL-90 scores of ethnic minority students of other majors. Other items are shown in Table 2.

Table 2. Comparison of SCL-90 scores of Minority College students in different majors

Factor Scores	Arts	Science	T	P
Total Average Score	1.768	1.712	1.021	0.309
Total Score	1.663	1.588	1.022	0.309

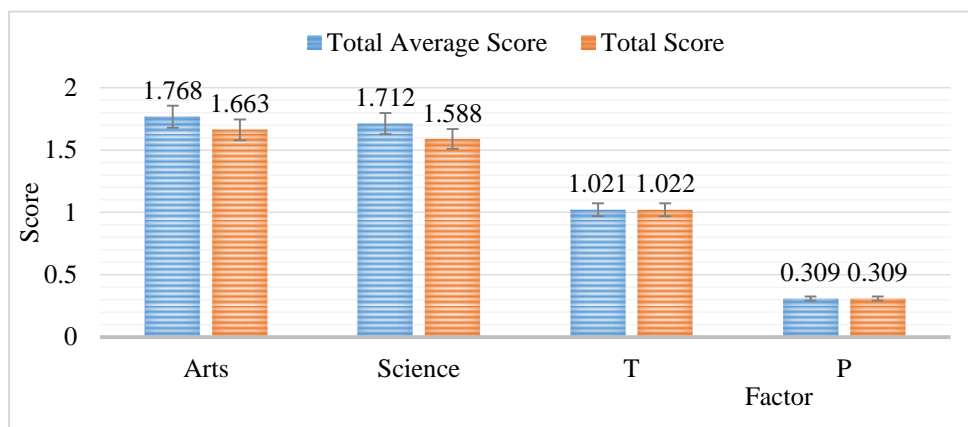


Figure 2. Comparison of SCL-90 scores of Minority College students in different majors

It can be seen from Figure 2 that the positive detection rate of SCL-90 is high, with the total score  $\geq 160$  as the index, the detection rate reaches 25.9%. The results of College Students' SCL-90 survey showed that the detection rate of College Students' psychological problems was 3.79% - 26.14%. At present, the mental health problems of ethnic minority college students have been widely concerned by colleges and universities. Although there are many studies, the corresponding solutions and resources are relatively scarce, and the social attention is not high. Therefore, we need more attention from all walks of life in strengthening the mental health education system of minority college students. Colleges and universities should not only bring the mental health education into the ideological and political education, but also establish the mental health guidance system for minority college students, strengthen the construction of the intervention system for the mental development of minority college students, and effectively solve the mental health problems of minority college students.

In view of the impact of the Internet on the mental health of ethnic minority college students, we should adapt to the changes brought by the times, correctly use the opportunities and advantages brought by the Internet, make good use of the positive role of the Internet in Ideological Education of ethnic minority college students, and minimize the bad impact of network culture on the values of ethnic minority college students, to a great extent Help them form a good outlook on life and values. On the basis of summarizing the past experience, this paper puts forward the following suggestions for the network mental health work of ethnic minorities in Colleges and universities

- (1) The correct implementation of China's religious policy, to help minority college students

form a positive view of national religion. Religion is a historical product of the development of human society to a certain extent. It has different stages of natural transition. Ethnic minorities should have a reasonable attitude towards it.

(2) Strengthen the network legal publicity and education, improve the ability of minority college students to identify information. We should reasonably interpret and judge the ideology and values advocated by the west, hold network civilization construction activities on time, and train the information screening ability of minority college students.

(3) To help minority college students see the guidance of public opinion correctly. We should actively pay attention to the overall dynamic behavior of minority college students to network public opinion, build a correct network atmosphere, guide and form a convincing positive network public opinion, and reasonably guide the mental health of College Students' network behavior.

(4) Therefore, colleges and universities should use cutting-edge technology to maintain the network psychological safety and build the guidance system of network technology psychological health.

## 5. Conclusion

Under the background of big data, the research and design of network mental health analysis and guidance system for minority college students is an important and valuable task. From the perspective of "big data", this paper studies the network mental health analysis and guidance system of minority college students. This paper holds that the research and design of the mental health analysis and guidance system combining big data with the network of ethnic minority college students not only requires researchers to have strong research ability and comprehensive quality, but also puts forward high requirements for ethnic minority college students, which will enhance the trust in the network of Ethnic Minority College students' mental health analysis and guidance system, It is beneficial to improve the physical and mental health of minority college students, and actively promote the development process of mental health analysis and guidance system mechanism.

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## Data Availability

Data sharing is not applicable to this article as no new data were created or analysed in this study.

## Conflict of Interest

The author states that this article has no conflict of interest.

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