



# Mental Health Management Model Construction for College Students - Based on the New Students of Chongqing University of Science and Technology

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**Abstract.** To grasp the mental health status of freshmen at Chongqing University of Science and Technology and analyze the sources of factors affecting freshmen's mental health. This study constructed a mental health management model to measure the psychological status and mental health of 1,321 college freshmen in the class of 2023 at Chongqing University of Science and Technology, and 220 people were randomly selected from 1,321 people for group intervention and individual intervention. The survey instruments of this study were: a questionnaire and an SCL-90 symptom checklist. The data were tested for normality, and the results showed that all dimensions were not normally distributed, but the Likert scale was normally distributed. The results of the study show that: 1. Freshmen have a high incidence of psychological problems, so the psychological problems of college students should be addressed as early as possible. 2. The mental health management model can effectively improve the psychological health of college students, and it can have a great improvement on the psychological problems of college students. This study provides some scientific basis for the future construction of college students' mental health management mode in colleges and universities.

**Keywords:** freshman; mental health; mental health management model.

## 1 Introduction

In 2015, the Party put forward the 'Healthy China 2030' plan and emphasized that it will be the goal and action steps for building a healthy China in the next 15 years, which comprehensively and full-cycle reflects the Party's firm determination to improve the health of the public and to protect the health of the public. A recent statistic shows that more than 400 million people are suffering from mental illness worldwide<sup>[1]</sup>. From this, we can know that the whole world is facing serious problems in mental health. College students are an important and special group in the composition of society, and we also need to pay more attention to the psychological problems of

college students<sup>[2][3]</sup>. The first year of college is an important period of growth for adolescents because college freshmen must learn to cope with a series of challenges. This model can help them to develop a sound personality, practice the skills of dealing with difficult situations, improve their thinking, and set up a correct worldview, life lessons, and values. It also provides a scientific basis for the future construction of college students' mental health management mode in colleges and universities.

## **2 Theoretical Basis of the Study**

### **2.1 Systems Management Theory**

Otsu algorithm University of Washington, Seattle, USA Professor Custer and others proposed the systems management theory, which is a relatively new theory of nursing management. It is capable of effectively coordinating various human resources so that they operate according to the expected processes. System management theory has two important characteristics. First, holistic. This system emphasizes not only to play the corresponding role of each sub-system but also to focus on the maximum effectiveness of the whole. Second, openness. System management theory believes that the organization is an open system, its management activities are subject to the influence and control of the external environment.

### **2.2 Positive Psychology**

In the early 1990s, positive psychology was proposed by Martin Seligman, a famous American psychologist. Martin Seligman believed that we had previously focused too much on people's mental disorders, put the focus on improving and treating mental illnesses, and did not pay attention to the positive aspects of the psyche. focus on both negative and positive aspects of the psyche and be interested in both having the best life and overcoming pessimism<sup>[4]</sup>. The research community in positive psychology is particularly interested in positive emotions and positive personality traits to improve mental health and promote well-being. The experience of positive emotions contributes to the development of social, physical, intellectual, and psychological resources in adults and adolescents as well as children<sup>[5]</sup>.

## **3 Mental Health Management for University Freshmen**

The definition of mental health in this study: mental health is the stability of personal emotional control, the ability of personal joy, anger, sadness, and happiness to be expressed and released appropriately in different life events, and the flexibility to change one's different roles in the face of different people and things. Psychologically healthy people can follow nature and reach the realm of harmony with nature.

### 3.1 Mental Health Status of University Freshman

Mental disorders pose a heavy burden globally as the number of people suffering from depression and anxiety disorders has increased dramatically<sup>[6][7]</sup>. The World Health Organization World Mental Health Survey International University Student Project, a study of the 12-month prevalence of six common and lifelong psychiatric disorders (major depressive disorder, mania/hypomania, generalized anxiety disorder, panic disorder, alcohol use disorder, and substance use disorder) showed that: 13,984 first-year students in eight countries surveyed (Australia, Belgium, Germany, Mexico, Northern Ireland, South Africa, Spain, and the United States) had a 12-month prevalence of mental disorders. In a study of 13,984 first-year university students in eight countries surveyed (Australia, Belgium, Germany, Mexico, Northern Ireland, South Africa, Spain, and the United States), 35% screened positive for at least one of the common lifetime disorders and 31% screened positive for at least one of the 12-month disorders<sup>[8][9]</sup>.

According to the China National Mental Health Development Report (2019-2020), the detection rate of depression among adolescents in China is 24.6%, and the detection rate of major depression among adolescents is 7.4%<sup>[10]</sup>. A recent study among 9013 college freshmen surveyed using the SCL-90 scale in China found that a total of 16.2% of freshmen (1488) showed positive results for depression.

### 3.2 A Study of Mental Health Management for College Students

Mental health management is a long-term, ongoing activity in which individuals and teams collect and study psychological data about themselves, analyze the causes of risks to their health, and prevent and intervene in them. It is a cyclical process.

## 4 Research Content and Methodology

### 4.1 Research Target

Based on all the new students of Chongqing University of Science and Technology in the class of 2023, 1,321 new students were selected by random cluster sampling method. Among them, 660 students were selected from the College of Petroleum and Natural Gas Engineering, 270 students from the College of Electrical Engineering, and 391 students from the College of Metallurgical and Materials Engineering. In the group and individual interventions of the mental health management model, 220 students were randomly selected from the 1,321 freshmen for interventions.

### 4.2 General Information Questionnaire

General Information Questionnaire: Designed by scholars on their own with reference to the literature in the course of academic research, there are 4 variables. There are four variables: college, gender, whether or not they are only child, place of birth, etc.

### 4.3 SCL-90 Symptom Self-Rating Scale

This study utilized the SCL-90 scale for psychological testing of university freshmen. This scale is widely used to assess the mental health of the general population in China, including students, teachers, workers, soldiers, nurses, doctors, and community residents, as well as psychiatric patients<sup>[11]</sup>. It was developed by L.R. Derogatis in 1975, translated from English to Chinese in 1984, and then the SCL-90 was widely used in China<sup>[12]</sup>. The SCL-90 uses a five-point scale during the measurement process: 1 for 'completely different'; 2 for 'partially inconsistent'; and 3 for 'partially inconsistent'. SCL-90 uses a five-point scale during the measurement process: 1 for 'completely different'; 2 for 'partially different'; 3 for 'uncertain'; 4 for 'partially the same'; and 5 for 'completely the same'. 5 means 'the same'. The score ranges from 1 to 5, with higher scores indicating more obvious psychiatric symptoms. In this survey, if any factor score exceeds 2, it can be regarded as a positive screening.

### 4.4 Establishment of a Mental Health Management Model

The model was constructed with reference to books on psychotherapy, disease management, health management, and experience in clinical psychotherapy. First, screening for psychological problems. Second, mental health counseling for all new students. Third, group intervention: mental health education lectures, cognitive-behavioral therapy, and positive stress reduction. Target: students who have been screened and have a symptom score of less than 2 on various scales. Fourth, individual intervention: is implemented by professional mental health practitioners. Target: for students who have been screened and assessed as having a symptom score of 2 or greater, or who believe they need individual intervention. Fifth, to assess the psychological status of 220 students after six months of intervention under the MHM model. The respondents were screened for psychological problems and counseled, and 220 of the new students were provided with interventions.

## 5 Findings and Analysis

### 5.1 Basic Description of New Students

The target of the survey is the 2023 freshmen of Chongqing University of Science and Technology. 1,321 questionnaires were distributed and 1,321 valid answers were received, with a recovery rate of 100%. Among the 1321 freshmen, 989 were male, accounting for 74.9%, and 332 were female, accounting for 25.1%. 431 were only children, accounting for 35.7%, and 431 were not only children, accounting for 35.7%. There were 431 only children, accounting for 35.7%, and 850 non-only children, accounting for 64.3%. There were 270 children in cities, accounting for 20.5%, 155 children in towns, accounting for 11.7%, and 896 children in rural areas, accounting for 67.8%. There were 660 students (49.9%) in the Faculty of Oil and Gas Engineering, 270 students (20.4%) in the Faculty of Electrical Engineering, and 391 students (29.7%) in the Faculty of Metallurgy and Materials Engineering.

## 5.2 Freshman SCL-90 Scale Analysis

The SCL-90 scale consists of 10 symptomatic factors, each of which reflects the mental health problems of the respondents, and as long as one of the 10 factors has a score of  $\geq 2$ , it can be judged as positive and is regarded as possibly having an abnormal psychological level of mild or above. According to the statistics of this survey, 376 of the 1321 freshmen may have mild or above psychological symptoms, accounting for 28.46% of the valid samples.

The mean scores of the 220 freshmen on each factor after administration were smaller than the mean scores on each factor before administration. Two independent samples t-test. Statistically significant if ( $P < 0.05$ ). See Table 1 for details.

**Table 1.** Comparison of mean SCL-90 scores of freshmen before and after management

Factor	Pre-management (n=220)	Post-administration (n=220)	t	P
Somatization	1.32±0.26	1.22±0.24	1.932	0.058
Obsessive-compulsive Disorder (OCD)	1.59±0.37	1.46±0.35	2.621	0.006
Interpersonal Sensitivity	1.36±0.29	1.24±0.24	3.365	0.001
Despondent	1.29±0.33	1.13±0.29	3.556	0.000
Apprehensive	1.28±0.35	1.18±0.33	2.894	0.006
Combative	1.31±0.28	1.25±0.21	5.321	0.000
Frightening	1.26±0.31	1.12±0.26	1.665	0.075
Paranoia	1.32±0.33	1.22±0.25	2.223	0.032
Psychotic	1.36±0.29	1.25±0.22	2.225	0.021
Other	1.36±0.31	1.24±0.28	0.625	0.498

Combining the above experiments, the results of the study of 1321 freshmen showed that 376 (28.46%) had psychological problems or low levels of mental health, and from the results, it can be seen that the freshmen's mental health problems were mainly manifested in the following dimensions: 1. obsessive-compulsive symptoms, 2. interpersonal sensitivity, 3. depression, 4. paranoia, and 5. anxiety. With the implementation of mental health management, the scores of each dimension in the scores of 220 freshmen decreased significantly after management. This may be because with the deepening of the application of the mental health management model, the overall mental health level of students has been greatly improved, and the problem of obsessive-compulsive symptoms for college students has also been greatly improved.

This study was the first time that the mental health management model was applied to freshmen at Chongqing University of Science and Technology, which is innovative. Since this study has not been conducted on senior students and graduate students of the university, it remains to be verified whether the results can be applied to senior students. The next step will be to expand the scope of the survey to improve the accuracy and applicability of the results.

## 6 Conclusions

In summary, the integration of mental health education into student management in colleges and universities is an urgent research topic for all teachers at this stage. The first year of university is a stage with a high incidence of psychological problems in university, and gender and professional factors that will affect the mental health level of college students should be intervened as early as possible to deal with the psychological problems of college students. This paper mainly discusses establishing a perfect college students' mental health database and gives full play to the effectiveness of the college student's mental health mining model, which provides a basic guidance basis for the development of college students' mental health management.

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