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Research Article

Intervention Methods of College Counselors on Students' Psychological Crisis under the Background of Deep Learning

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In order to quantitatively evaluate the effect of college counselors' intervention methods on students' psychological crisis, an evaluation model of college counselors' intervention methods on students' psychological crisis based on the deep learning model is put forward. The learning model function of college counselors' intervention in students' psychological crisis is constructed. By using the joint statistical feature analysis method, the dynamic factor analysis of college counselors' intervention in students' psychological crisis is established, and the machine learning model of college counselors' intervention in students' psychological crisis is constructed. By using the methods of big data fusion and correlation dimension feature analysis, combined with a fuzzy C-means clustering algorithm, the reliability evaluation of college counselors' intervention on students' psychological crisis and the construction of a large database are realized. By using the deep learning model, the parameters of college counselors' intervention model on students' psychological crisis are optimized and analyzed, and the methods of college counselors' intervention on students' psychological crisis are optimized and designed. The test shows that it is reliable and expandable to use this method for college counselors' intervention in students' psychological crisis, and it can establish the applicable technology of knowledge network to realize the correct intervention of college counselors in students' psychological crisis.

1. Introduction

Our country's new era of education puts forward the fundamental task of "cultivating morality and cultivating people," which has higher requirements for the development of Ideological and political education in Colleges and universities [1–3]. The most important thing to carry out ideological and political education is the psychological health education of college students. Therefore, in order to improve the quality of Ideological and political education, the quality of College Students' mental health education can not become a short board, and it is imperative to explore the related content of improving the quality of mental health education [4–6].

The evaluation of College Students' mental health education plays an irreplaceable role in improving the quality of education. Through the evaluation of College Students' mental health education [7], we can more intuitively show the progress and problems of a certain education stage. Under the background of the new era, the proposal of the educational concept of "cultivating morality and cultivating people" points out the direction for the mental health education in Colleges and universities, and further defines the value judgment and development direction of its quality. The evaluation of College Students' mental health education is a relatively weak part of the work system of College Students' mental health education, but it is also a key way and effective way to improve the quality of College Students' mental health education [8–10]. Therefore, according to the needs of the times, it is of practical significance to update and improve the evaluation system of College Students' mental health education. In a word, if we want to realize the mission of the times to improve the quality of College Students' mental health education, and then improve the quality of College Ideological and political education, we must adhere to the fundamental task of Building Morality and cultivating people, conform to the development of the times, stimulate the vitality of the times, and vigorously carry out the evaluation and research work of College Students' mental health education.

In order to improve the reliability of College Counselors' intervention on students' psychological crisis, this paper proposes an evaluation model of College Counselors' intervention on students' Psychological Crisis Based on the deep learning model. Construct the learning model function of College Counselors' psychological crisis intervention on students, adopt the joint statistical feature analysis method, establish the dynamic factor analysis of the process of College Counselors' psychological crisis intervention on students with the evaluation method, evaluation process, and evaluation index system as the hierarchical analysis structure model, Combined with the fuzzy c-means clustering algorithm, the reliability evaluation and large database construction of College Counselors' intervention on students' psychological crisis are realized. The deep learning model is adopted to optimize the analysis of College Counselors' intervention model parameters on students' psychological crisis, and the optimal design of College Counselors' intervention methods on students' psychological crisis is realized. Finally, the experimental test shows that this method is superior in improving the reliability of College Counselors' intervention to students' psychological crisis.

2. Evaluation Index System of College Counselors' Intervention Effect on Students' Psychological Crisis

2.1. Questionnaire Method and the Parameter Model of Evaluation Index for the Quality of College Counselors' Intervention on Students' Psychological Crisis. The psychological crisis of contemporary college students is mainly manifested in the following aspects:

(1) Unable to adapt to the school environment. The students in the University come from all over the country. Some people will have psychological pressure because they can not adapt to the environment such as the regional temperature, and they also can not adapt to the learning style, which leads to the normal graduation of college students, resulting in psychological crisis.

(2) Withdrawn personality and inferiority complex. There are often some lonely students in the university campus, and they are often the students from poor families. Because of their family circumstances, they often separate themselves from other students, and their interpersonal relations are indifferent; There are also some students who think that they have defects, poor talent, and appearance, and they will have an inferiority complex. This kind of psychology can not be pacified. Over time, students will close themselves up, leading to depression and even suicidal thoughts.

(3) Excessive anxiety and psychological depression. It is mainly reflected in poor academic performance, difficulty in eating and sleeping, and frustration in love life. This kind of students usually have pessimistic thoughts, have poor psychological endurance when encountering setbacks, are unwilling to communicate with others, and lose hope for life. Serious anxiety and psychological depression will lead to students' suicidal thoughts.

Therefore, it is very important to pay attention to the mental health education of college students. The evaluation goals of college students' mental health education can be classified in different ways according to different definition standards, such as short-term goals and long-term goals according to the time dimension, and macro goals and microgoals according to the space dimension. Generally speaking, the evaluation goals of college students' mental health education are mainly supervision, appraisal, and guidance for improvement. Influenced by Screvane's Evaluation Methodology, some scholars study the evaluation objectives according to different educational purposes [11]. For example, Zhang Dajun and Li Chen put forward the basic framework of the evaluation system of psychological quality education according to the enlightenment of the educational evaluation model. They think that there are generally three kinds of goals, namely, diagnostic goals, formative goals, and final goals. This goal setting is also the most widely recognized research mode at present. This paper analyzes the conceptual connotation and theoretical support of college counselors' evaluation on the quality of students' psychological crisis intervention. The route of empirical research is: to understand the current situation of ideological and political work under the network extension resource integration mode. Through questionnaire survey and case investigation, this paper sorts out the development vein of college counselors' intervention quality evaluation on students' psychological crisis in China and understands the actual needs of teachers, students, and administrators, thus laying a solid empirical foundation for the research. Finally, according to the results of theoretical research and empirical research, through logical analysis [12–14], taking the ideological and political work course under the network extension resource integration mode of Chinese universities as the object, this paper systematically analyzes the evaluation index system of college counselors' intervention quality of students' psychological crisis and discusses its operability in depth. The research roadmap is shown in Figure 1.

First of all, according to the research background and research status, the author makes an investigation and then puts forward the content to be studied. According to the research content, the intervention system of college counselors on students' psychological crisis is established, and the index parameters are further set. According to the parameters, the final research conclusions and suggestions are drawn.

2.2. Evaluation Parameter Fusion of College Counselors' Intervention Effect on Students' Psychological Crisis. This paper constructs the basic theoretical framework of the evaluation system of college counselors' intervention on students' psychological crisis, establishes the basic evaluation indexes, and uses the joint statistical feature analysis method to sort the sample level distribution sequence of the evaluation

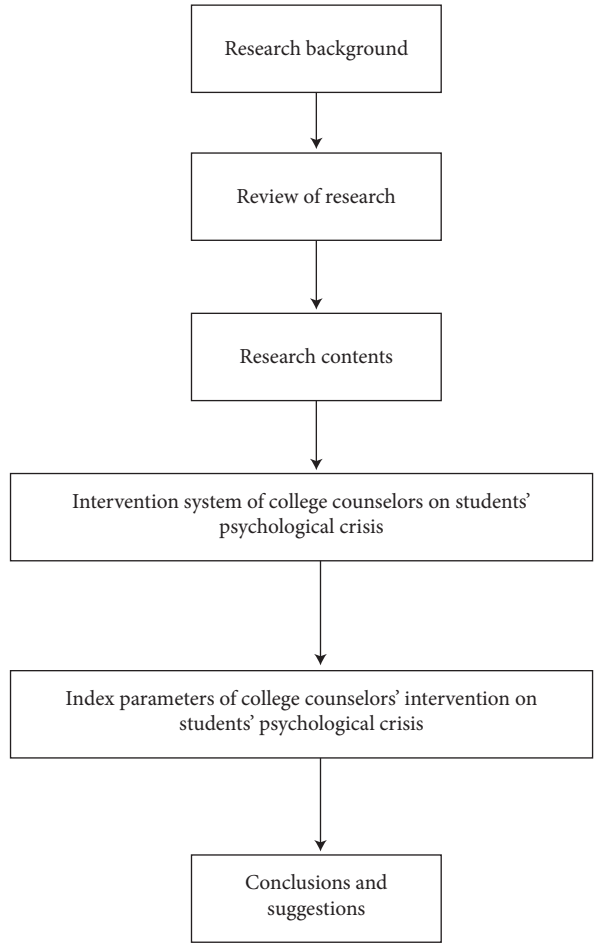

Figure 1: Technology roadmap.

indexes of college counselors' intervention on students' psychological crisis [15, 16]. Through the quantitative regression analysis method [17, 18], the mathematical description of the constraint optimization target of college counselors' intervention on students' psychological crisis is as follows:

$$\begin{aligned} &\min F(x) = [f_1(x), f_2(x), \ldots, f_n(x)], \\ &subject.to. g_i(x) \le 0 \,(\text{or} \ge 0) \quad i = 1, 2, \ldots, n, \\ &h_j(x) = \quad 0 \, j = 1, 2, \ldots, m, \end{aligned} \tag{1}$$

wherein, $f_i(x)\,(i = 1, 2, ..., n)$ is the objective letter of college counselors' intervention effect evaluation on students' psychological crisis, $g_i(x)$ is the inequality constraint condition of college counselors' intervention effect evaluation on students' psychological crisis, and $h_j(x)$ is the correlation statistical constraint condition. This paper introduces the ambiguity detection technology of college counselors' intervention characteristics in students' psychological crisis [19, 20], and estimates the effect of college counselors' intervention in students' psychological crisis. In the process of this research, the deep integration of theory and practice has been realized. The theoretical route is as follows: on the basis of analyzing the theory and practice of college counselors' intervention in students' psychological crisis, by examining the relationship between personality traits and mental health, and making clear the regulating effect of psychological capital on the relationship between them, the content information of personality traits and mental health can be fully excavated, and the theoretical basis can be provided for the future research of college students' personality traits and mental health.

The dominating set of college counselors' intervention effect estimation on students' psychological crisis: the dominating satisfaction of decision variables of college counselors' intervention effect estimation on students' psychological crisis: all x^*'s, and there is at least one $f_i(x^*) \le f_i(x)$, where = 1, 2, ..., n, at this time, the dominating set of autocorrelation fuzzy state of college counselors' intervention effect estimation on students' psychological crisis satisfies local convergence.

For the discriminant statistic $X^* \in S$ of college counselors' intervention effect estimation on students' psychological crisis, if and only if there is a boundary constraint solution $X \in S$, all inequalities will be established. Among them, there is one $f_i(X^*) \le f_i(X)$ in the distribution range of college counselors' intervention effect on students' psychological crisis, which makes the characteristic distribution of college counselors' intervention estimation on students' psychological crisis satisfy the strict inequality X^*, At this

time, the statistics of college counselors' intervention effect estimation on students' psychological crisis is a multi-objective optimization problem. By obtaining the Pareto optimal solution of the objective function of college counselors' intervention effect estimation on students' psychological crisis, the convergence of the estimation model can be satisfied.

3. Optimization of the Evaluation Model of College Counselors' Intervention in Students' Psychological Crisis

3.1. Quantitative Analysis of the Effect of College Counselors' Intervention on Students' Psychological Crisis. Systematically investigate the relationship between personality traits and college students' mental health: at present, there is no measurement study of personality traits on the full dimension of college students' mental health, and there is a lack of relevant model construction. In the future, it will facilitate a more comprehensive and systematic understanding of the relationship between personality traits and college students' mental health.

The new version of the questionnaire is used to study the relationship between personality and college students' mental health: the traditional mental health measurement tools SCL-90 and UPI are abandoned, and the latest Chinese college students' mental health screening scale compiled by the Ministry of Education is adopted, which is more suitable for Chinese college students and can comprehensively measure their mental health. This paper determines the resource information of college counselors' intervention on students' psychological crisis, and gives the constraint function of college counselors' intervention on students' psychological crisis based on the big data fusion scheduling algorithm model [21–23]. Initialize the characteristic parameters of college counselors' intervention effect estimation on students' psychological crisis, and revise the redundant vector set in the conclusion. The optimal constraint index parameters of college counselors' intervention effect estimation on students' psychological crisis are as follows: the ambiguity function of college counselors' intervention effect estimation on students' psychological crisis is determined:

$$\begin{aligned} V_{ij}(g+1) = {} & V_{ij}(g) + c_1 r_{1ij}(g)\left[\mathrm{Pbest}_{ij}(g) - x_{ij}(g)\right] \\ & + c_2 r_{2ij}(g)\left[\mathrm{Gbest}_j(g) - x_{ij}(g)\right], \end{aligned} \tag{2}$$

wherein, $V_{ij}(g)$ is the joint estimation parameter of evaluation index and evaluation function of college counselors' intervention on students' psychological crisis, c_1 is the adaptability factor of college counselors' intervention on students' psychological crisis, $r_{1ij}(g)$ is the ambiguity coefficient of college counselors' intervention on students' psychological crisis, $\mathrm{Pbest}_{ij}(g)$ is the explanatory parameter of college counselors' adaptability on students' psychological crisis, and $x_{ij}(g)$ is the statistical probability density function of college counselors' intervention on students' psychological crisis. For the distribution set of autocorrelation characteristics of $\mathrm{Gbest}_j(g)D$ college counselors' intervention on students' psychological crisis, a learning model of college counselors' intervention effect estimation on students' psychological crisis is set. Based on the fuzzy mathematical model, the number of nodes and vector elements of college counselors' intervention effect distribution on students' psychological crisis and the autocorrelation characteristic distribution vector of college counselors' intervention effect estimation on students' psychological crisis are obtained:

$$x(t) = \left(x_0(t), x_1(t), \ldots, x_{k-1}(t)\right)^T, \tag{3}$$

wherein, $x_0(t), x_1(t), \ldots, x_{k-1}(t)$ is a subsequence of the evaluation of college counselors' intervention effect on students' psychological crisis. Combining with the association rule mining method, the formal distribution feature set of association rule mining problem of college counselors' intervention effect evaluation on students' psychological crisis is given, and the weighting vector of college counselors' intervention effect evaluation on students' psychological crisis is obtained:

$$\mathrm{Gbest}_i(g+1) = \arg^{\min}_{\mathrm{Pbest}_{ij}} f\left(\mathrm{Pbest}_{ij}(g+1)\right), \tag{4}$$

wherein, $f(\mathrm{Pbest}_{ij}(g+1))$ represents the equilibrium scheduling parameter of college counselors' intervention on students' psychological crisis, and g is the association rule item of effect evaluation. The constraint parameter model of college counselors' intervention on students' psychological crisis is established.

According to the established constraint parameter model, we can know the information of College Students' psychological crisis intervention, analyze its feature similarity and feature distribution, and provide a basis for subsequent feature mining and data fusion analysis.

3.2. Mining the Characteristics of College Counselors' Intervention in Students' Psychological Crisis. By using the developmental characteristic analysis method of effect estimation [24, 25], the hierarchical structural characteristic analysis and data standardization fusion of college counselors' intervention effect on students' psychological crisis are carried out [26]. The correlation factor between X_i and X_j of college counselors' intervention effect on students' psychological crisis is described as the similarity between two characteristic quantities of college counselors' intervention effect on students' psychological crisis, which is expressed as follows:

$$l\left(X_i, X_j\right) = \left\|X_i - X_j\right\|, \tag{5}$$

wherein, X_i and X_j, respectively, represent the statistical time distribution sequence, and the above-mentioned distance similarity level represents the difference degree of college counselors' intervention effect estimation on students' psychological crisis. Through local convergence learning, the optimized weight subset $\{W_O\}_{i=1}^{N-m-a}$ of college counselors' intervention effect estimation on students' psychological crisis and the fuzzy parameter distribution

subset of college counselors' intervention effect estimation on students' psychological crisis are obtained. Optimizing the distribution structure of college counselors' intervention quality of students' psychological crisis is expressed as follows:

$$\{W_O\}_{i=1}^{N-m-a} = \left\{\left\{x_O^i\right\}_{i=1}^{N-m-a}\right\}, \tag{6}$$

wherein, x_O^i is the characteristic quantity of college counselors' intervention in students' psychological crisis, and $\{x_O^i\}_{i=1}^{N-m-a}$ defines the evaluation range for the price system. If $(N_f/N) < \delta$, the sample attribute set of the evaluation index of college counselors' intervention quality in students' psychological crisis is recorded as $w'\Phi(x_i)$, and through the collaborative optimization method, The random simulation and association rule decision-making method are used to evaluate the effect of college counselors' intervention on students' psychological crisis. Random simulation refers to constructing a model similar to the intervention model and experimenting on the model to study the original model. Association rules are the process of discovering and analyzing the association between feature quantity similarity, time distribution sequence, and intervention quality distribution structure. Combined with random simulation dynamic detection and maximum matching analysis method, the evaluation model of college counselors' intervention on students' psychological crisis is as follows:

$$GD = \frac{\sqrt{\sum_{i=1}^{n} d_i^2}}{n}, \tag{7}$$

wherein, d_i is the evaluation standard adopted by the evaluators of college counselors' intervention effects on students' psychological crisis, and n is the dynamic distribution set of development effects. When $GD = 0$, the convergence formula of college counselors' intervention estimates on students' psychological crisis is expressed as follows:

$$DM = \frac{d_e + d_b + \sum_{i=1}^{n-1}\left|d_i - \left(\sum_{i-1}^{n-1} d_i/n - 1\right)\right|}{d_e + d_b + (n-1)\left(\sum_{i=1}^{n-1} d_i/n - 1\right)}, \tag{8}$$

wherein, d_e is the extreme point in the distribution set S_s of college counselors' intervention effect on students' psychological crisis, and d_b is the dynamic optimization function of college counselors on students' psychological crisis. To sum up, combined with random simulation dynamic detection and maximum matching analysis method, this paper evaluates the effect of college counselors' intervention on students' psychological crisis.

4. Empirical Analysis

SPSS statistical analysis software is used to conduct an experimental test on the evaluation of college counselors' intervention effect on students' psychological crisis. The reliability and validity test is to verify the reliability and consistency of the questionnaire. This study adopts the simplified Big Five Personality Scale (NEO-FFI) compiled by American psychologists Costa and McCrea (Mccrae, 1989) and translated by Chinese scholar Zhang Jianxin according to his own cultural background. There are 60 questions in this scale, which are divided into five subscales: neuroticism, openness, extroversion, conformity, and rigor. Each scale has l2 questions, which are scored by 5 points, of which 1 means "completely out of line with me" and 5 means "completely in line with me." Among them, 25 questions are scored in reverse. The reliability index of each sub-scale is good, among which the internal consistency reliability is 0.66–0.84 and the retest reliability is 0.86–0.90 (Mccrae, 1989). In addition, Yao Ruosong et al. (Yao Ruosong, Liang Leyao, 2010) further verified the applicability of the Big Five Personality Simplified Scale by taking college students as subjects, among which the internal consistency reliability of each subscale was between 0.63 and 0.78, and the model fitting index was good, which fully confirmed that NEO-FFI could be used to test Chinese college students. In this study, the internal consistency reliability is 0.80, among which the reliability indexes of neuroticism, extraversion, openness, conformity, and rigor are 0.86, 0.81, 0.67, 0.60, and 0.8l, respectively, which have good reliability. Select the unified guidance language to distribute the questionnaire in the classroom, and collect it on the site after completion. The subjects of the test were 100 college students. The content of the questionnaire was the simplified Big Five personality scale, which was mainly related to the psychological problems of college students. The questionnaire star was used to distribute the network questionnaire, and then the received questionnaire was coded and entered, and the invalid questionnaire was deleted. Then, the statistical software such as SPSS and Amos was used to analyze the data. The analysis method based on the deep learning model is compared with principal component analysis (PCA) and analytic hierarchy process (AHP). See Table 1 for the first-level indicators, as shown in Table 2 for the distribution of second-level indicators.

Table 1: First-level indicators for the evaluation of the intervention effect of college counselors on students' psychological crisis.

Primary index	Serial number
Personal traits	INDEX1
Psychological capital	INDEX2
Addiction	INDEX3
Delusion	INDEX4

According to the above index parameters, the questionnaire method is used to evaluate the effect of ideological and political work, and the scores of each dimension of college students' mental health screening scale are analyzed from each dimension in Table 3.

Combined with relevant research, it can be found that, at present, the mental health problems of college students mainly involve emotions, interpersonal communication, psychological stress, environmental adaptation, inner conflict, networking, and so on. The content of college students' mental health mainly includes two aspects: the correction of mental problems and the development of mental health.

Table 2: Secondary indicators of college counselors' intervention on students' psychological crisis.

Index	Serial number	Contribution level	Confidence level	Support level
Professional teaching ability	ID11	0.913	0.616	0.233
College counselors' ability to intervene in students' psychological crisis	ID12	0.296	0.415	0.488
Professional background	ID13	0.227	0.864	0.492
College counselors' intervention attitude to students' psychological crisis	ID14	0.121	0.962	0.328
Perseverance of college counselors' intervention on students' psychological crisis	ID15	0.453	0.344	0.833
The research level of college counselors' intervention on students' psychological crisis	ID16	0.141	0.006	0.862
The content of college counselors' intervention on students' psychological crisis	ID17	0.408	0.002	0.842
The intervention methods of college counselors to students' psychological crisis	ID18	0.255	0.539	0.839
The intervention mode of college counselors to students' psychological crisis	ID19	0.953	0.712	0.534
College counselors' intervention and management of students' psychological crisis	ID20	0.854	0.266	0.510
College counselors' intervention on students' psychological crisis feeds back to the school.	ID21	0.611	0.669	0.460
College counselors' intervention on students' psychological crisis.	ID22	0.466	0.846	0.624
College counselors' intervention in students' psychological crisis suddenly originated from the construction.	ID23	0.168	0.322	0.202
Online resource student satisfaction	ID24	0.954	0.940	0.105
Cultivate lifelong learning awareness and ability	ID25	0.302	0.476	0.635
Achievement award	ID26	0.492	0.504	0.222
Examination	ID27	0.345	0.071	0.822

Table 3: Scores of each dimension of college students' mental health screening scale.

Parameter	Score
Illusion	0.776
Suicide intention	0.083
Anxiety and depression	0.195
Stubbornly biased	0.150
Self-abased	0.369
Sensitive	0.970
Social phobia	0.502
Somatization	0.776
Attack	0.554
Be on an impulse	0.214
Force	0.333
Internet addiction	0.364
Self-injury behavior	0.221
Eating behavior	0.445
Sleep disturbance	0.499
Difficulties with school adaptation	0.235
Interpersonal relationship trouble	0.501
Academic pressure	0.306
Employment pressure	0.973
Trouble in love	0.934

According to the statistical analysis of the parameter results in the table, the scatter diagram of college counselors' evaluation of students' psychological crisis intervention is shown in Figure 2.

According to Figure 2, in terms of hallucination, there are significant differences among students from different places of origin and educational background. The specific performance is as follows: (1) the scores of students in small towns are significantly higher than those in other places. There is no significant difference among other places of origin; (2) undergraduate students are significantly higher than master students.

In terms of suicide intention, there are significant differences among students of different genders and educational background, as follows: (1) the scores of girls are significantly higher than those of boys; (2) undergraduate students are higher than master students.

In terms of anxiety, there are significant differences among students of different genders, nationalities, and educational background, mainly as follows: (1) girls are higher than boys; (2) the minority nationality is higher than the Han nationality; (3) undergraduate students are higher than master students.

In terms of depression, there are significant differences among different genders, places of origin, and educational background, mainly as follows: (1) girls are significantly higher than boys; (2) the number of students in small towns is significantly higher than that in big cities, and there is no significant difference among other students' places of origin; (3) the number of undergraduates is higher than that of master students.

In terms of bigotry, there are significant differences between different genders and educational background, mainly as follows: (1) girls are significantly higher than boys; (2) undergraduate students are higher than master students.

In terms of inferiority, there are significant differences among different genders, nationalities, and educational background, mainly as follows: (1) girls are significantly higher than boys; (2) minority nationality is significantly higher than Han nationality; (3) undergraduate students are higher than master students.

Sensitive aspects. There are significant differences among different genders, nationalities, educational background, and majors. The main manifestations are: (l) girls are significantly higher than boys; (2) minority nationality is

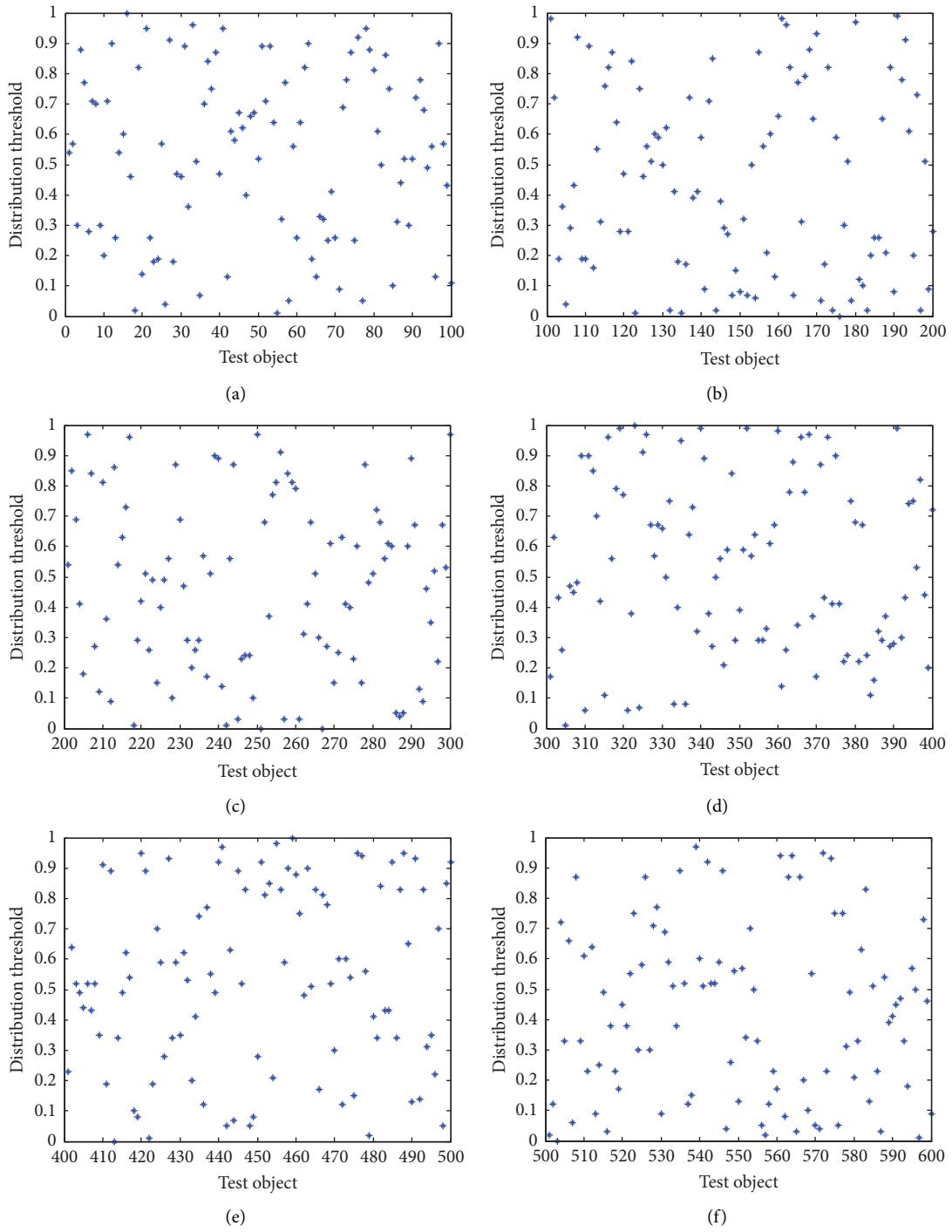

Figure 2: Scatter diagram of college counselors' evaluation of students' psychological crisis intervention. (a) Anxiety aspect. (b) Delusion. (c) Suicide intention. (d) Depression aspect. (e) Paranoia. (f) Inferiority.

significantly higher than Han nationality; (3) undergraduate students are higher than master students; (4) the scores of liberal arts students are significantly higher than those of science students and engineering students, and there is no significant difference between science students and engineering students.

The reliability analysis results of college counselors' intervention effect evaluation on students' psychological crisis are shown in Figure 3.

To sum up, neuroticism, conformity, and rigor in personality traits can significantly predict college students' mental health and are the key personality factors to

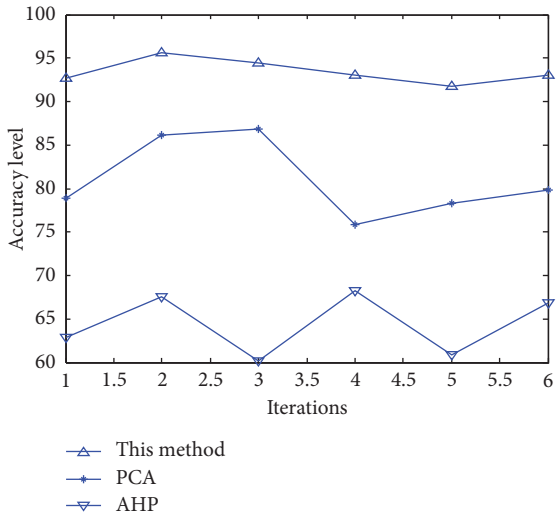

Figure 3: Reliability of evaluation of college counselors' intervention effect on students' psychological crisis.

investigate college students' mental health problems. Compared with the stage and variability of mental health, personality is a relatively stable trait of an individual's long-term development. And, the external performance is more obvious, which is easier for us to observe and evaluate. Therefore. We can further predict the mental health problems that may occur in the future through the individual's personality traits and effectively prevent them. Find problems and solve them in time. This is more conducive to the development of school mental health work and promotes the comprehensive and mature development of students' personality and mental health.

5. Conclusions

The direction of mental health work in colleges and universities can be adjusted appropriately, instead of focusing on problem orientation, the emphasis should be on prevention and maintenance. According to the psychological evaluation results, establish system files; according to the effective prediction model, pay attention to key people; at the same time, when encountering psychological crisis and counseling problems, we often need some stable information to help solve them. For this reason, we can borrow the characteristics of a stable personality and easy investigation. To predict and discover students' potential mental health problems. Construct a personality prediction model. Find problems in time and solve them effectively. For example, paying attention to individual personality traits such as neuroticism, conformity, and rigor, especially students with prominent neuroticism, need to pay more attention. It can predict all aspects of mental health problems, especially depression.

(1) Based on simple description and statistics, it is found that there are significant differences in demographic variables such as nationality, place of origin, gender, only child, educational background and major among college students' personality traits, mental health, the total level of psychological capital, and all dimensions. At the same time, from the analysis of the mental health status quo, college students have higher scores in employment pressure, academic pressure, and Internet addiction.

(2) According to the prediction model of personality on all dimensions of college students' mental health, neuroticism has a significant positive prediction effect on all dimensions of mental health problems, while conformity and rigor have a significant negative prediction effect on all dimensions of mental health problems. On this basis, the prediction model of this huge student group is further compared. It is found that there are differences between them, which mainly show that nervousness, compliance, and rigor among undergraduates have significant predictive effects on all dimensions of mental health problems, in which nervousness is a positive predictor, while rigor and compliance are negative predictors; However, the neuroticism of master students has a significant positive predictive effect on all dimensions of mental health.

(3) According to the multigroup simultaneous comparison model, it is concluded that psychological capital has a moderating effect in the all-dimensional model of personality prediction of mental health. In addition, there are significant differences between high and low psychological capital groups in the paths of some dimensions of mental health, as follows: suicidal intention, sensitivity, impulsiveness, compulsion, Internet addiction, and sleep disturbance. The low psychological capital group is significantly higher than the high psychological capital group, while the high psychological capital group is significantly higher in the paths of paranoia, hostile aggression, school adjustment difficulties, interpersonal troubles, academic pressure, employment pressure, and love disturbance.

Data Availability

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Conflicts of Interest

The authors declared that they have no conflicts of interest regarding this work.

References

[1] Q. Shi, N. Cai, and W. Jiao, "Monitoring and evaluating college students' mental health based on big data analysis," *American Journal of Health Behavior*, vol. 46, no. 2, pp. 164–176, 2022.

[2] P. Wang, D. Li, and X. Meng, "The management mode of college students' mental health based on wireless sensor

network," *International Journal of Frontiers in Sociology*, vol. 40, no. 2, pp. 45–49, 2022.

[3] X. Zhang, "Problems and countermeasures of college students' mental health education," *Journal of healthcare engineering*, vol. 68, no. 215, pp. 45–50, 2022.

[4] H. Gao, "Research on the construction of college students' mental health security system," *Journal of healthcare engineering*, vol. 49, no. 5, pp. 33–42, 2022.

[5] W. Zheng, "Cluster Analysis algorithm in the analysis of college students' mental health education," *Applied Bionics and Biomechanics*, vol. 63, no. 6, pp. 19–21, 2022.

[6] H. Wang, "Exploration on the innovative path of college students' mental health education under the background of epidemic situation--take the psychological salon as an example," *Advances in Educational Technology and Psychology*, vol. 5, no. 8, pp. 66–70, 2021.

[7] L. Yi, "Analysis on the innovative strategies of college students' mental health education under the background of we-media," *International Journal of Education and Teaching Research*, vol. 2, no. 3, pp. 32–38, 2021.

[8] T. Kodish, "Enhancing racial/ethnic equity in college student mental health through innovative screening and treatment," *Administration and policy in mental health*, vol. 49, no. 2, pp. 1–16, 2021.

[9] H. B. Holly, "Risks and resources for college students' mental health: ACEs, attachment, and mindfulness[J]," *Journal of American College Health: J of ACH*, vol. 45, no. 5, pp. 11–16, 2021.

[10] S. Ma, J. Yang, J. Xu et al., "Using network analysis to identify central symptoms of college students' mental health," *Journal of Affective Disorders*, vol. 311, no. 7, pp. 47–54, 2022.

[11] Z. Xu, "Systematic thinking on college students' mental health education," *Advances in Educational Technology and Psychology*, vol. 12, no. 6, pp. 12–15, 2022.

[12] F. Tao, "Research on informatization teaching of college students' mental health course," *Lifelong Education*, vol. 9, no. 4, pp. 67–69, 2020.

[13] J. Matthew, "Pesko. Anxiety disorders' effect on college and university students' mental health: a common and growing concern," *Current Psychopharmacology*, vol. 9, no. 2, pp. 82–90, 2020.

[14] Yi. Zhan, "Research on status and strategies of college counselors in psychological intervention of poor students," *Journal of Huanggang Polytechnic*, vol. 21, no. 3, pp. 63–66, 2019.

[15] S. Y. Jiang, W. H. Ying, W. E. I. Qing bo, and W. U. Dexin, "Resident travel characteristics analysis method based on multi-source data fusion," *Journal of Transportation Systems Engineering and Information Technology*, vol. 20, no. 5, pp. 56–63, 2020.

[16] F. Zhang, Di. Liu, and Y. Gao, "Learning behavior characteristics analysis of students based on SPOC videos learning data," *Computer Engineering & Software*, vol. 41, no. 2, pp. 84–89, 2020.

[17] Q. I. N. Li-juan and F. E. N. G. Nai-qin, "Sparse data feature extraction of sparse data based on deep learning back propagation," *Computer Simulation*, vol. 39, no. 5, pp. 333–336, 2022.

[18] F. E. N. G. Xin, D. E. N. G. B. A. Da-ji, and S.-x. Kong, "Forecasting the seed yield of Tibetan herb medicine herpetospermum pedunculosum Baill.and analyzing for its influencing factors based on linear regression analysis model," *Modern Chinese Medicine*, vol. 22, no. 3, pp. 409–411, 2020.

[19] Y. Jin, J. Liu, and Z.-hua Yang, "Ambiguity algorithm integrated into new structure to realize oil temperature monitoring of power transmission and transformation equipment," *Automation & Instrumentation*, vol. 35, no. 1, pp. 71–75, 2020.

[20] S. Wang, L. Wu, Z. You, W. Fu, and F. Jiyuan, "A fast ambiguity solution method for network RTK reference station," *Journal of Electronics and Information Technology*, vol. 43, no. 8, pp. 2324–2333, 2021.

[21] S. H. A. O. Ya-li, H.-h. Chen, and L.-c. Zhang, "Real-time data service of cyber-physical system," *Computer Technology and Development*, vol. 31, no. 5, pp. 113–118, 2021.

[22] T. U. Sheng-qian, "Multi-tag feature selection algorithm for trusted data based on local subspace," *Journal of Shanxi Normal University (Philosophy and Social Sciences edition)*, vol. 35, no. 1, pp. 67–71, 2021.

[23] H. Xu, Yu Cai, X. Wan et al., "Architecture and key technologies for big data platform in power grid," *Power System Technology*, vol. 45, no. 12, pp. 4798–4807, 2021.

[24] H. Li, C. Sun, Ma lin, Bo Hongjian, and Xu Zhongliang, "Timbre feature extraction of musical instrument based on TVF-EMD and its application," *Journal of Signal Processing*, vol. 36, no. 6, pp. 932–941, 2020.

[25] H. Yu, F. A. N. G. Zhou, and M. A. Chao, "Spatiotemporal user profile mining algorithm in Internet of things," *Computer Integrated Manufacturing Systems*, vol. 26, no. 9, pp. 2429–2444, 2020.

[26] N. Zhou, "Research on feature mining method of engineering data clue based on attribute classification," *Journal of Information Engineering University*, vol. 21, no. 6, pp. 694–698, 2020.