Can Psychological Problems Among College Students Be "Seen"?

Wentao Ning[1], Xiuyu Jiang[1], Guang Dong[2]

1College of Psychology, Sichuan Normal University;
2College of Computer Science, Sichuan Normal University, Chengdu 610066

ABSTRACT

Objective: Based on the actual work of counselors' ideological and political education, combined with the diagnostic criteria of abnormal psychology and college students' stress events, a preliminary mechanism has been developed to achieve early detection of psychological problems through daily observation of special college students. Methods: Compiled tools for non psychological professionals, screened out psychological issues' gatekeeper ', and preliminarily verified the experimental data with R language. Results: 1. Psychological issues' gatekeepers ' are selected from college students; 2. After unified training and learning, we should participate in the experience exchange meeting for 3-5 times, and observe after deeply mastering the observation standard; 3. Report the observed abnormal students according to the scoring rules of the observation standard; 4. College counselors or class teachers use the scoring rules of self-evaluation standards to judge whether to refer to professional psychological institutions. Conclusion: Through analysis and verification, the effectiveness of the early detection mechanism of College Students' psychological problems has been preliminarily proved.

KEYWORDS

Psychological issues' gatekeeper; Psychological problem; Stress event; Early detection

DOI: 10.47297/wspiedWSP2516-250010.20230702

With the progress of the times, the psychological problems of college students are also changing rapidly, which brings new challenges to the work of counselors or class teachers in universities. Traditional psychological surveys in universities can't monitor students' psychological problems in real-time, and counselors or class teachers who have long-term contact with college students lack professional knowledge, tools, and time to identify students with psychological problems. This also explains why so many college students today, despite having serious psychological problems, are unable to receive scientific diagnosis and intervention.The psychological problems have become one of the most challenging issues in contemporary university education and student management, and this issue has also become an important obstacle for universities to achieve the fundamental task of cultivating morality and talent.

Since the reform and opening up, the mental health level of Chinese college students has made significant improvements [1], which has also been supported by numerous studies [2]. The mental health level of college students continues to improve, but they experience more negative emotions such as depression, anxiety, and loneliness [1], which makes it easier for contemporary college students to express their negative emotions on social media. In addition, some researches has proven that the suicide rate of Chinese college students has significantly decreased [3], but the suicide risk of Chinese

college students is still relatively high [4].

In order to detect the psychological problems of college students earlier, take timely intervention, and better complete the fundamental educational task of cultivating morality and cultivating talents, we have decided to refer to the relevant research ideas of suicide "gatekeepers" in the West and combine with relevant domestic research results to study a mechanism for early detection of psychological problems in college students.

In order to detect the psychological problems of college students earlier, take timely intervention, and better complete the fundamental educational task of cultivating morality and cultivating talents, we have decided to refer to the research ideas of suicide "gatekeepers" in the West and combine with the domestic research results to study a mechanism for early detection of psychological problems in college students.

Suicide "gatekeepers" refer to those who can come into contact with individuals at high risk of suicide, identify their suicide symptoms in a timely manner, and persuade them to seek help or treatment[5]. This type of research began with Dr. John Snyder in the United States publishing his first research paper on the effectiveness of suicide "gatekeeper" training in 1971 [6]. Subsequently, many Western countries have conducted the research on suicide "gatekeeper" training, aiming to help populations who can come into contact with individuals at high risk of suicide learn theoretical knowledge, identify suicide symptoms, assess suicide risk, and refer high-risk individuals [7]. There is not much research on suicide "gatekeeper" training in China. Zhao Guoxiang and others have demonstrated that short-term suicide "gatekeeper" training for college students is effective [8]. Zhang Wei proposed that QPR training in suicide "gatekeeper" training is an effective crisis prevention model, which is particularly worthy of reference for mental health workers in Chinese universities [9]. Xu Linling and others also proposed to localize the research on suicide "gatekeeper" training in the West [10].

Domestic researchers have also conducted research based on the training of suicide "gatekeepers". Zhai Jianxia et al. developed a others-rating assessment scale for early detection of accidental traumas, aiming to help frontline medical staff identify those who have encountered accidental traumas through direct observation and simple conversation [11]. Yang Xueling et al. also developed a behavioral observation and warning indicator for gatekeepers with psychological disorders in college students, mainly to achieve the observation and warning of "schizophrenia", "depression" "Early warning for anxiety disorder", "obsessive-compulsive disorder", "phobia", and "suicidal and self injurious behavior" [12].

Based on previous research, this study will incorporate more psychological disorders, abnormalities, and other psychological issues into real-time monitoring of symptoms. On the other hand, new mechanisms will also be adopted to identify the psychological issues' gatekeeper. Therefore, in order to better assist college students in their healthy growth and development, and to implement the fundamental task of cultivating virtue and talent, from the perspective of the backbone of ideological and political education in universities - counselors,this study has decided to develop a mechanism for early detection of psychological problems among college students, based on previous research and combined with the actual situation of student education management in Chinese universities.This mechanism can be developed to intervene and treat them in a timely manner.

In foreign research, many researchers believe that "gatekeepers" should be composed of two types of personnel: one is professionals in psychology or medicine, and the other is trained teachers, social workers, coaches, university administrators, etc. [13]. Some researchers also insist that family and friends should serve as gatekeepers [14]. In domestic research, there are not many screening mechanisms for

gatekeepers, but individuals such as dormitory supervisors and psychological commissioners are selected to serve as gatekeepers for practical work needs.

In this study, we believe that college students who can undertake the task of being the psychological issues' gatekeeper should have three characteristics: first, they should be mentally healthy classmates; second, they should have good interpersonal relationship processing skills; third, they should be relatively rational and not subjectively judge others' psychological abnormalities due to individual emotions. Therefore, the screening of psychological issues' gatekeeper will use the following three questionnaires.

The Symptom Checklist-90 (SCL-90) is a tool used to determine the psychological well-being of college students [15].

The tool for determining the rationality level of students is the Self Differentiation Scale for College Students [16].

The Interpersonal Relationship Diagnosis Scale is a tool for determining the interpersonal communication status of students [17].

In practical use, the psychological issues' gatekeeper needs to score well on all three scales simultaneously.

After incorporating more common psychological disorders among college students, new tools will be developed based on the symptom standards for early detection of psychological problems, to facilitate the use of psychological issues' gatekeeper and university counselors or class teachers. Therefore, the preliminary concept of a mechanism for early detection of psychological problems among college students is as follows:

(1) Through appropriate questionnaires, select some college students as psychological observers, i.e. gatekeepers of psychological issues;

(2) Provide unified training to the gatekeepers of these psychological problems using specific tools for early detection of psychological problems;

(3) The psychological issues' gatekeeper uses early detection tools for psychological problems. After observing for a period of time, they promptly report any psychological abnormalities found around them to the counselor;

(4) The counselor uses the established tools to further confirm whether to refer to a professional psychotherapy institution.

1 Object and Method

(1) Object

In a university in Sichuan, a preliminary search was conducted for 362 participants. After screening with the SCL-90 scale, the College Student Self Differentiation Scale, and the Interpersonal Relationship Diagnosis Scale, students who met the requirements for all three scales were selected. After communication and confirmation with their counselors, combined with their interpersonal relationships and dormitory distribution, 72 psychological issues' gatekeeper were ultimately identified.

After signing the confidentiality agreement, the screened psychological issues' gatekeeper receive unified training in accordance with the same guidance language, and have successively studied the

newly compiled questionnaire for early detection of psychological problems, and passed the post learning test to ensure their learning effectiveness.

After a week of observation, the psychological issues' gatekeeper obtained a others-rating score for all classmates around them based on the corresponding tools. Then, all students who were observed by the "gatekeeper" completed the newly compiled questionnaire for early detection of psychological problems, and obtained their self-evaluation scores.

In the end, 232 others-rating data were obtained for processing through observation, and 216 valid data were obtained by deleting invalid data. In addition, self-evaluation data and SCL-90 data from these 216 subjects were also included. Among the 216 subjects, 151 were from sophomore year, 65 were from freshman year, 34 were male, and 182 were female.

(2) Method

1) Three scales for screening psychological issues' gatekeeper

The Symptom Checklist-90 (SCL-90), a tool for determining the psychological well-being of college students, was developed by Derogatis and includes 90 items describing thinking, emotions, behavior, interpersonal relationships, and lifestyle habits, with a total of 10 factors[15]. College students participating in the experiment must score below 160 points and have an average score of no more than 2 points for each individual factor in order to meet the psychological issues' gatekeeper's criteria.

The tool for determining the rationality level of students, the Self Differentiation Scale for College Students, was translated by Wu Yuhui, Wang Guiping (2010), and others based on the revised version of the Difference of Self Inventory (DSI) abroad [16]. In screening, a score of 100 is used as the dividing line, and only subjects with scores higher than 100 can be listed as psychological issues' gatekeeper.

The tool for determining the interpersonal communication status of students, the Interpersonal Relationship Diagnosis Scale, was selected from the questionnaire in the book "Psychological Diagnosis of College Students" edited by Zheng Richang (1999) [17]. Generally speaking, participants with a total score of 8 or below indicate that they have no significant issues with interpersonal relationships.

2) Preparation of a standard questionnaire for early detection of symptoms of psychological problems

In order to incorporate more symptoms of psychological problems into the study, we have decided to refer to the various psychological disorder standards used for clinical diagnosis in materials such as the Chinese Classification and Diagnostic Standards for Mental Disorders (CCMD-3) [18] and the Diagnostic and Statistical Manual for Mental Disorders VI (DSM-5) [19], and develop the necessary tools.

Firstly, based on CCMD-3 in China and DSM-5 in the United States, with the guidance of counselors from university mental health centers and reference to relevant literature, a total of 41 common psychological problems among college students were finally listed. Finally, 281 diagnostic criteria for various psychological problems were collected, and these diagnostic criteria were further coded, summarized, merged, deleted, classified, and translated.

After the above operation, we have grouped the diagnostic criteria that can be directly observed by the psychological issues' gatekeeper through daily life into a set, and obtained a total of 41 questions, named "Observation Criteria for Early Detection of Psychological Problems in College Students" (hereinafter referred to as CPOC); Classify the diagnostic criteria that cannot be observed and can only

be self evaluated into another set, and obtain a total of 37 questions, named "Self evaluation Criteria for Early Detection of Psychological Problems in College Students" (hereinafter referred to as CPSC).

Finally, a total of 78 questions will be translated from the two sets obtained, so that each question can be understood by non psychological "gatekeepers" and other personnel. Before the experiment, a group of participants will be searched, and three screening questionnaires will be used to select 11 psychological issues' gatekeeper. They will learn and use the above tools, and finally provide modification suggestions, Revise items that are prone to ambiguity and items that can cause significant psychological pressure on participants.

Both CPOC and CPSC adopt a "yes" or "no" two-point scoring system rule, because the diagnostic criteria in CCDM-3 themselves have a degree of expression, such as insomnia lasting for two weeks, complete rejection of all overweight foods, etc., so it is not suitable to follow a multi-point scoring system rule.

In addition, based on the "stress-susceptibility" model of suicide theory, it is necessary to determine the stress events experienced by college students in their lives [20]. Based on existing research results on suicide and stress events, 12 types of stress events that are most likely to cause significant stress to college students were ultimately cited. These 12 types of stress events mainly include academic setbacks, love setbacks, serious family conflicts, and other stress events [21-22]. After re coding, analyzing, and translating these events, a total of 20 questions were obtained, forming the "Stress Events for Early Detection of Psychological Problems in College Students" (hereinafter referred to as CPSE).

In summary, the observation tools used by psychological issues' gatekeeper are CPOC and CPSC; The tools used by ideological and political education workers such as counselors are CPSC and CPSE.

(3) Statistical processing

This data analysis uses R language to program multiple data models of machine learning, and then analyze the data results.

2 Results

(1) Common method bias testing

Using SCL-90 data as the dependent variable, exploratory factor analysis, KMO test, and Bartlett's sphericity test results showed that the data was suitable for factor analysis. The total variance explained in the factor analysis results was less than 40%, indicating that the data results met the requirements after testing.

(2) Data analysis on the early detection mechanism of psychological problems among college students

For the convenience of subsequent data calculations, the collected data of 216 college students were classified into five categories, with four independent variables, namely, the psychological issues' gatekeeper observed the others-rating data of the subjects in two categories, namely CPOC score recorded as observation data A and CPSE score recorded as others-rating pressure data B; In addition, there are two types of self-evaluation data obtained from the participants, namely CPSC score recorded as self-evaluation data C and CPSE score recorded as self-evaluation stress data D, with the dependent variable being the SCL-90 score of college students observed by the gatekeeper.

This data analysis uses R language to program multiple data models of machine learning, and then analyze the data results. The specific logic is that if the scores of the four categories of the observed person are not 0, it indicates that the student's self-evaluation data or others-rating data is abnormal, while SCL-90, based on its own scoring rules, identifies subjects with a total score higher than 160 points or a single factor score higher than 2 as abnormal. Record all data classified as abnormal as 1 and normal as 0, making this analysis a binary classification problem. The data analysis results are shown in Tables 1 and 2.

Tables 1

set	model	accuracy	accuracy_ warning	cv	cv_warning	AUC
A	Logistic Regression0.5	0.48	0.28	0.44	0.45	0.534
	Logistic Regression0.2	0.59	0.86	0.54	0.88	0.534
	Random Forest	0.46	0.36	0.49	0.78	0.477
	SVM	0.57	0.92	0.43	0.71	0.514
B	Logistic Regression0.5	0.54	0.94	0.46	0.79	0.527
	Logistic Regression0.2	0.54	0.94	0.59	1.00	0.527
	Random Forest	0.54	0.94	0.57	0.98	0.472
	SVM	0.56	0.97	0.57	1.00	0.486

The AUC values in Table 1 are generally around 0.5, indicating that the overall significance of the data is not high and it is difficult to support the research hypothesis.

Tables 2

set	model	accuracy	accuracy_ warning	cv	cv_warning	AUC
C	Kernel SVM	0.68	0.69	0.67	0.64	0.681
	Logistic Regression0.5	0.65	0.64	0.58	0.56	0.643
	Logistic Regression0.2	0.59	0.83	0.54	0.78	0.643
	Random Forest	0.60	0.50	0.63	0.60	0.620
	SVM	0.67	0.61	0.62	0.57	0.676
D	Logistic Regression0.5	0.60	0.64	0.60	0.64	0.637
	Logistic Regression0.2	0.57	1.00	0.54	0.95	0.637
	Random Forest	0.63	0.64	0.56	0.56	0.634
	SVM	0.62	0.58	0.49	0.67	0.625

In Table 2, among the self-evaluation data C scores of the participants, five machine learning models had AUC values exceeding 0.6, indicating that the self-evaluation data C of the participants had a certain predictive effect on the SCL-90 data, which preliminarily proves the validity of the research hypothesis. Similarly, among the four prediction models in machine learning, the AUC score of self-evaluation stress data D exceeds 0.6. However, the prediction accuracy of self-evaluation stress data D is not high, generally around 0.6.

On the basis of confirming its effectiveness, the analysis found that the prediction accuracy of the self evaluated CPSC and CPSE by the participants was generally not high, with most of them around 0.6. However, among all students with abnormal SCL-90 data, the accuracy of predictions has improved to a certain extent. The logistic regression prediction of 0.2 for self-evaluation data C reached 0.83, and even for cross validation data, it reached 0.78, indicating that the self-evaluation data of the subjects has a higher probability of accurately predicting whether they have mental disorders.

Considering that in this confirmatory study, some members of the psychological issues' gatekeepers were freshmen who mainly observed classmates who had just lived in the same dormitory for 3 months. They may not be able to accurately complete the observation and obtain

effective others-rating data, which is why the others-rating data in Table 1 is invalid, while others-rating data in Table 2 is valid. Therefore, the new student data is excluded, Perform the same data validation again and obtain four types of data A1, B1, C1, and D1. The analysis results are shown in Tables 3 and 4.

Tables 3

set	model	accuracy	accuracy_ warning	cv	cv_warning	AUC
A_1	Logistic Regression0.5	0.61	0.78	0.39	0.44	0.610
	SVM	0.65	0.89	0.46	0.74	0.602
B_1	Logistic Regression0.5	0.50	0.59	0.53	0.69	0.451
	SVM	0.50	0.56	0.57	0.88	0.488

As shown in Table 3, the AUC value of two models in the subjects' observation data A1 score is greater than 0.6, and the accuracy of prediction also exceeds 0.6. Among all students with abnormal SCL-90 data, the accuracy of prediction of support vector machine (SVM) model data reaches 0.89, and the value of cross validation also reaches 0.74. This indicates that the observation data obtained by the second year gatekeeper is highly effective and the accuracy of predictions is also high.

However, the model others-rating stress data B1 showed that stress score evaluated by others was not ideal in machine learning prediction models, even the model with the best AUC values.

Table 4

set	model	accuracy	accuracy_ warning	cv	cv_warning	AUC
C_1	Random Forest	0.65	0.63	0.68	0.65	0.657
	SVM	0.57	0.44	0.60	0.57	0.591
D_1	Logistic Regression0.5	0.50	0.74	0.42	0.54	0.487
	Logistic Regression0.2	0.59	1.00	0.58	0.99	0.487
	Random Forest	0.57	0.59	0.46	0.72	0.560
	SVM	0.59	1.00	0.55	0.94	0.500

The self-evaluation data C1 in Table 4 is similar to Table 2, with AUC values exceeding 0.6, indicating that the self-evaluation data C1 also has some validity, but the accuracy of prediction is not high. On the other hand, the self-evaluation pressure data D1 has generally poor AUC scores in all prediction models of machine learning, which is not worth analyzing for its effectiveness.

3 Discussion

(1) Psychological issues' gatekeeper should spend a considerable amount of time with the observed person

In data analysis, it was found that after excluding freshmen, there were significant changes in the predictive validity and accuracy of various observational data for SCL-90. Therefore, it can be inferred that compared to freshmen who have just known each other for more than three months, sophomores who have been together for more than a year have obtained more effective and accurate observational data. This indicates that the use of the gatekeeper mechanism for psychological issues should only be appropriate after students have a deeper understanding of their peers one year into college.

(2) Scoring rules in the early detection mechanism of psychological problems among college students

In order to enable the CPOC, CPSC, and CPSE to determine whether the subjects may have psychological problems, three sets of tools need to have their own scoring mechanisms, that is, when the subjects are screened based on their scores.

In order to achieve this goal, R language was used to analyze observation data A,others-rating pressure event data B, self-evaluation data C, and self-evaluation pressure data D with the dependent variable SCL-90. However, in the model calculation results of the total score obtained, the results of observation data A and others-rating pressure event data B were not satisfactory, which means that an effective data model cannot be established solely based on the total score, This means that predictions and judgments cannot be made solely based on the total score of observed data.

Therefore, a set of scoring rules can only be established by combining the diagnostic criteria for psychological disorders in previous data analysis and questionnaire development.

Firstly, in the compilation of the standards involved in CPOC and CPSC, the criteria for severe psychological disorders, such as schizophrenia, emotional disorders, neurosis, hysteria, and other mental disorders that seriously affect individual physical and mental health and even life safety, are listed as severe criteria; Other psychological disorders that do not seriously affect individual health, such as personality disorders, anorexia, and narcolepsy, are classified as mild criteria.

Among all the criteria for severe illness, the criteria for diagnosing schizophrenia and hysteria are relatively special, as patients may have cognitive problems that are easily detected and diagnosed. Therefore, their diagnostic criteria are that patients only need to have two or more symptoms present simultaneously; The diagnostic criteria for other serious mental disorders are relatively strict, and generally speaking, patients need to have at least 4 or more symptoms occurring simultaneously, and the duration should be at least 2 weeks before diagnosis can be made. For psychological disorders diagnosed according to mild criteria, it is generally necessary to have three or more conditions at the time of diagnosis.

In data analysis, the accuracy of CPSE's self-evaluation and others-rating data is not too high. Only in the self-evaluation data of all participants, there is a certain degree of validity and accuracy, which indirectly proves the susceptibility stress theory of suicide, that is, stress events are a necessary condition for college students to commit suicide to a large extent, but it is not necessarily a sufficient condition. If college students are in an abnormal psychological situation, When encountering one or more stress events, it can be determined that the student has a relatively high risk of suicide.

So, the scoring rules for CPOC are:

<table>
<tr><th>The reporting conditions for psychological issues gatekeepers</th><th>Conditions for counselors or class teachers to report to professional institutions</th><th>Professional institutions such as mental health centers</th></tr>
<tr><td>The criteria for symptoms of schizophrenia and hysteria meet two or more criteria</td><td rowspan="2">Focus on and use self-assessment criteria for further communication and confirmation before reporting</td><td rowspan="4">psychological intervention</td></tr>
<tr><td>Severe illness criteria meet 4 or more criteria and last for more than 2 weeks</td></tr>
<tr><td>Mild criteria should meet three or more criteria</td><td>Focus on and encourage self acceptance of psychological intervention</td></tr>
<tr><td>Meet any of the above three conditions and encounter one or more stress events</td><td>Focus on whether students have suicidal thoughts and report them in a timely manner</td></tr>
</table>

Although such scoring rules are established based on diagnostic criteria for mental disorders or

psychological disorders, they should also be based on a relatively large sample of subjects, and can only be proven effective through extensive observation, analysis, and consistency verification. This study is limited by human, material, and financial resources, so the scoring rules in the early detection mechanism of psychological problems among college students still need to be improved. We can only hope that future researchers can solve them.

4 Results

This study has preliminarily established an early detection mechanism for psychological problems among college students, which can dynamically provide real-time warning for their psychological problems. The specific content of this mechanism is as follows:

(1)Using the Symptom Self Rating Scale, College Student Self Differentiation Scale, and Interpersonal Relationship Diagnosis Scale, select college students who have relatively ideal scores in all three questionnaires as gatekeepers;

(2)Provide unified training for these "gatekeepers" using the tools developed for early detection of psychological problems, namely CPOC, CPSC, and CPSE;

(3)The psychological issues' gatekeeper uses tools for early detection of psychological problems, observes classmates around them, obtains abnormal student data, and conducts 3-5 concentrated discussions with experienced psychological counselors. Through the interpretation and confirmation of psychological counselors, the gatekeepers deepen their understanding of tools for early detection of psychological problems in college students;

(4)The The psychological issues' gatekeeper dynamically monitors classmates around them, and once it is found that a student's score reaches the warning line in the scoring rules, it is promptly reported to the counselor;

(5)The counselor uses the established tools to further confirm whether the students selected by the The psychological issues' gatekeepers have reached the warning score, and then chooses whether to refer them to professional psychological treatment institutions.

Funding

2020 Sichuan Normal University Ideological and Political Work Research Project (XJSZ202018).

About the Author

Wentao Ning (1985-10), male, Han ethnicity, Handan City, Hebei Province, master's degree student, teaching assistant, research direction: psychological counseling and mental health education, ideological and political education for college students;

Xiuyu Jiang (1992-05), male, Han ethnicity, Suzhou City, Jiangsu Province, Master's degree in progress, research direction: big data research;

Guang Dong (1992-12), male, Han ethnicity, Guangyuan City, Sichuan Province, master's degree student, lecturer, research direction: ideological and political education for college students, guidance for innovation and entrepreneurship for college students.

References

[1] Xin Ziqiang, Chi Liping The trend of psychological health changes among contemporary Chinese people [J] People's Forum, 2020, (1): 46-50.

[2] Liao Youguo, Lian Rong A cross-sectional historical study on the changes in national mental health over the past thirty years [J] Journal of Southwest University (Social Sciences Edition), 2019, 45 (2): 105-16, 197.
[3] Yang Zhenbin, Li Yan. Exploration of Suicide among Chinese College Students [J]. Education Research at Tsinghua University, 2013,34 (05): 59-63.
[4] Wu Caizhi, Jiang Guangrong, and Duan Wenting A Study on the Current Situation and Countermeasures of Suicide among Chinese College Students [J] Heilongjiang Higher Education Research, 2018, 36 (5): 95-99.
[5] Matthieu M, Cross W, Batres AR, et al.Evaluation of gatekeeper training for suicide prevention in veterans[J]. Archives of Suicide Research,2008,12(2):148–54.
[6]Snyder, J. The use of gatekeepers in crisis management[J]. Bulletin of Suicidology, 1971,8(3), 39–44.
[7] Liang Ting, Zhang Xiaoyuan, Wang Zhe. Review of research on training suicide "gatekeepers" [J]. Progress in Psychological Science, 2012,20 (08): 1287-95.
[8] Zhao Guoxiang, Jing Chunxia, Wang Shengyong, et al. Evaluation of the effect of short-term training on "suicide goalkeepers" for college students [J]. Chinese Journal of Disease Control and Prevention, 2010,14 (10): 984-87.
[9] Zhang Wei. Building a new model for preventing psychological crises in universities through the integration of Chinese and Western cultures: insights from "suicide gatekeeper training" abroad [J]. Ideological and Theoretical Education, 2013, No. 407 (15): 71-75.
[10] Xu Linling, Xu Hongzhi. New Measures for Psychological Crisis Prevention and Control among College Students: Taking the "Suicide Gatekeeper Training" to "Life Gatekeeper" Project as an Example [J]. Journal of College Counselors, 2019, 11 (05): 68-72.
[11] Zhai Jianxia, Wu Jing, Liu Xiaohong. Development and application of early psychological assessment scale for accidental trauma patients [J]. Psychological Science, 2009,32 (05): 1124-26.
[12]Yang Xueling, Zhang Peining, Liang Ting, et al. A study on the observation and warning indicators of gatekeeper behavior in college students with psychological disorders [J]. Modern Preventive Medicine, 2016,43 (07): 1246-49.
[13]Windfuhr K. Suicide: Rates, risk factors and future directions for prevention[J]. British Journal of Hospital Medicine ,2011,72(7), 364–65.
[14]Barnes LS, Ikeda RM,Kresnow MJ. Help-seeking behavior prior to nearly lethal suicide attempts[J]. Suicide and Life-Threatening Behavior, 2001,32 (Suppl), 68–75.
[15] Wang Zhengyu. Symptom Checklist 90 (SCL-90) [J]. Shanghai Psychiatry, 1984 (02): 68-70
[16] Wu Yuhui, Wang Guiping. Preliminary revision of the Self Differentiation Scale for College Students [J]. Psychological Research, 2010,3 (04): 40-45.
[17] Edited by Zheng Richang Psychological Diagnosis of College Students [M]. Jinan: Shandong Education Press, 1999 339-44.
[18] Editor of the Psychiatric Branch of the Chinese Medical Association Chinese Classification and Diagnostic Criteria for Mental Disorders (3rd Edition) [M]. Jinan: Shandong Science and Technology Press, 2001 23-143.
[19] Edited by the American Psychiatric Association Diagnostic and Statistical Manual of Mental Disorders (Fifth Edition) [M]. Beijing: Peking University Press, 2015 144-579.
[20] Wang Qiushi, Liu Jianxin, and Shen Heyong Research and Theoretical Review of Suicide Psychology Abroad [J] Progress in Psychological Science, 2006, (1): 105-10.
[21] Chao Chuanxuan, Liu Jianping, Zeng Xiaoqing A Psychoanatomical Study on Life Events of Suicide College Students [J] Exploring Psychology, 2012, 32 (6): 548-52.
[22] Wu Caizhi, Yu Lixia, Sun Qiwu, et al Stress events among suicidal college students [J] Chinese Journal of Clinical Psychology, 2018, 26 (3): 472-76.