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# Research Article

# Ternary interactive determinism: A narrative review on the problems and innovation paths of college students' mental health education

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## ABSTRACT

These days, psychological problems among college students are increasingly prominent due to various factors. It is crucial for colleges to improve and innovate the working mode of mental health education to promote the healthy development of college students' body and mind. Based on ternary interactive determinism of human's internal factors, behavior and environment, this study creatively combines the environmental atmosphere, personality characteristics and behavior habits of contemporary college students organically, analyses the existing deficiencies in the construction of the current psychological education system from these three perspectives deeply, and puts forward practical paths for the innovation of the psychological education system in colleges.

*Keywords:* ternary interaction determinism; college students; mental health education

## 1. Introduction

In the current Center for Collegiate Mental Health (CCMH: Center for Collegiate Mental Health is an international multidisciplinary, member-driven, Practice-Research-Network (PRN) focused on providing accurate and up-to-date information on the mental health of today's college students[1]) 2022 Annual Report, rates of prior treatment (counseling, medication, hospitalization) showed a slight increase in the past year among college students, and the rates of them with histories of threat-to-self characteristics rebounded in 2021–2022[2].

A survey report on mental health status of college students in 2022 in "Mental Health Blue Book: China National Mental Health Development Report (2021–2022)", included the mental health status of more than 70,000 college students in 31 provinces in China. The results showed that there were 21.48% students with different degrees of depression risk and 45.28% students with different degrees of anxiety risk. In addition, the survey results indicate that sleep, pressure, boredom, academic and love status of college students have different degrees of influence on the mental health of college students[3].

In a nutshell, the current mental health status of college students is still not optimistic and closely related to individual psychological characteristics, behavioral habits, interpersonal relationships, environmental atmosphere and many other factors, so colleges should carry out multi-angle, all-round,

targeted mental health education to effectively improve the level of mental health of college students. Based on ternary interaction determinism, this review deeply analyzes the deficiencies in the construction of the current psychological education system in Chinese colleges from the perspectives of the environment, personality characteristics and behavior habits of contemporary college students, and systematically expounds the innovation of the psychological education system in colleges and universities.

Analyzing human behavior is a key concept while discussing the mental health of college students. Describing the ternary interaction determinism highlights humans' psychological and physical functions to understand the importance of including educational psychology. Ecosystem theory is vital to understanding how to develop an educational environment for students. On the other hand, perspectives of Chinese colleges are included in the research to explain the psychological factors faced by students being a part of a developed country. Increasing competitiveness, societal elements, and patterns of education are growing challenges faced by students in China which targets effective technological and psychological measures. Explaining the process of meeting individual needs is an important knowledge-gathering area by highlighting activities taken by Chinese colleges. Behavioral problems are solved by using the way of cultivating students which highlights teachers' ideological roles. Analysing phenomena related to the ways of influencing the behavior of students in a positive way through mental health education adds to the upbringing styles of families, and environmental systems in colleges. Facilities and social environments play vital roles in contributing in students' positive upbringing. The roles of constructive courses like online classes, strengthening humanistic care along psychological counseling highlight the importance of green channels. Gaining knowledge on the process of building a positive psychological state of students is analyzed with the help of gathering real data. Psychological abnormalities are addressed by conducting surveys on students to highlight factors like sensitivity, anxiety, and mental stresses of students. Therefore, the entire research includes mental problems faced by students to highlight effective strategies.

## 2. Literature review and theoretical basis

### 2.1. Ternary interaction determinism

The concept of ternary interaction determinism was first proposed by American psychologist Albert Bandura in 1971. This theory refers to the mutual influence and causation of three factors: people, behavior and environment (as shown in **Figure 1**). "P" represents the individual, "B" represents the behavior, "E" represents the environment of the individual, and the two-way arrow indicates mutual influence and causation. Ternary interaction determinism holds that human individual, human behavior and individual environment are relatively independent and interact with each other, and finally they determine each other. Among them, the individual refers to the human body function, psychological and cognitive level[4].



**Figure 1.** The model of triadic interaction determinism.
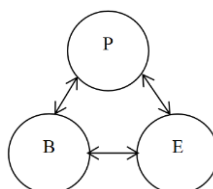
### 2.2. Research on ternary interaction determinism

Ternary interaction determinism was originally used in the field of educational psychology. Based on this theory, Yang and Tao[5] have conducted relevant studies on how colleges improved the effectiveness of moral education from environmental education, self-education and process education. Liu[6] used this theory

to discuss the cultivation of students' personal qualities. In addition, peer education and adaptability structural equation model was developed based on ternary interaction determinism to study the influence mechanism of peer education on college students and its influence on their adaptability[7]. Lo Schiavo et al.[8] studied the stability of the ternary interaction model from the perspective of system dynamics, and the results showed that the model presented a stable equilibrium state. A dynamic knowledge recommendation service model oriented to online academic communities based on ternary interactive determinism was also constructed[9]. Ternary interactive determinism (TID) has included the concepts related to genetics, environment and self-determination which have been shaping the behavioral aspect of students. However, families and society have been playing a major role in shaping the behaviors of students by increasing their ability for self-determination. Parents' nature and psychological behaviors used to be prioritized to determine the nature of students which is a scientific way to emphasize individuals' actions[10]. Genetics is the main factor while evaluating the parental power to influence the behaviors of children. Students used to learn the behavioral aspects from their parents which are the main reason to become primary influencers in students' lives. Genetically dynamic has been included in TID which impacted individuals' self-determination skills. Parents are the primary teachers in students' lives who have been nurturing by using traditional models. Traditional models of education have prioritized the physical health of students rather than the mental perspective to develop a brighter future to fulfill individual needs. Gaining the eligibility to fulfill the needs is the concept under self-determination in TID[11]. The ternary model has focused on developing a decision-making system by prioritizing the academic courses and learning activities. However, advanced models like developing curriculums to identify abnormalities have been playing major roles in strengthening the concept of home school. There are programs organized by schools in Chinese colleges to provide open platforms to discuss with parents. Teachers used to participate in family mental health programs to increase awareness on guidelines. Traditional systems under ternary are focused on in-depth teaching which has excluded the roles of parents to provide a healthy environment to students. Teachers used to take responsibility to generate skills of self-learning among students which created problems to grow the skill of adaptability. Academic communities have been pressurized by societal and environmental factors like stability in studies to focus on the quality of students[12]. Reaching the equilibrium state is the main target of the TID model which has included innovational strategies to priorities the mental health of students. Exploring the concept of the ecosystem has included in the model to include technological perspectives to improve educational courses. The advanced self-learning model has made strong relationships between teachers and parents by developing mental health programs. Increasing parent's attention towards the mental conditions of students has become the prime goal of the current education system. There are some new elements included in advanced learning like the role of media, and medical institutions to gather information about the changing psychological needs of students to take quick actions to prevent mental diseases[13]. Rapid changes in society after digitalization have provided opportunities to students to share their problems openly by using a platform like WeChat. Experienced and skilled educational professionals have taken the responsibility to support students by using online platforms which has added a new degree to the education system.

## 2.3. Research on mental health education of college students

At present, scholars at home and abroad pay more attention to the study of college students' mental health education. Huang[14] and Guo and Liu[15] discussed the model of college students' mental health education from the perspective of ecosystem theory for the relevant research of contemporary college students' mental health education. Liu[16] explores the innovation path of college mental health education through improving the quality of college students' mental health education courses based on the theory of

positive psychology and the current situation of college students' mental health education; Zhao[17] explored the effective path of mental health education for college students from the perspective of "three-whole education". Gao and Wei[18] investigated the development and use of a cultivation mechanism for mental health education of college students in campus culture creation from the perspective of deep learning. In addition, foreign researchers have studied help-seeking behaviors regarding British students' mental health aimed to identify the facilitators and barriers to formal and informal sources of help for students seeking mental health difficulties, highlighting their reluctance when in higher education[19]. These scholars have conducted relevant research on college students' mental health education from different perspectives, which has laid a theoretical foundation for the study of college students' mental health education model.

However, few scholars have conducted research on the working system of college students' mental health education from the perspective of the interactive decision relationship of "human's internal factors, behavior and environment" based on the ternary interaction determinism. By applying Bandura's ternary interaction determinism to college students' mental health education, this review builds a new college students' mental health education system based on the interrelationship among college students' environment, personality characteristics and behavior habits (as shown in **Figure 2**), which puts forward a new research perspective for the theoretical development of mental health education model for contemporary college students, and also provides practical reference for how colleges and universities improve the effectiveness of mental health education from three aspects: the construction of harmonious environment atmosphere, the shaping of good personality characteristics and the formation of scientific behavior habits.
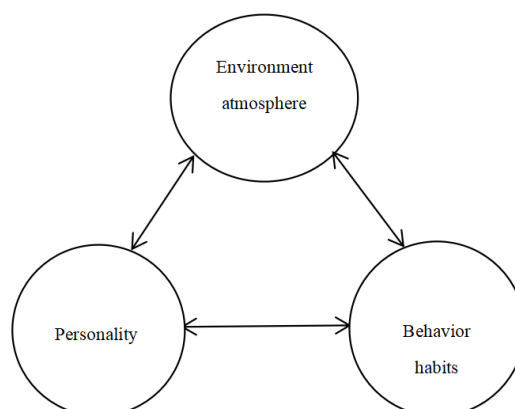


**Figure 2.** A new college mental health education system based on ternary interactive determinism.

# 3. Existing problems in the construction of mental health education system in colleges

### 3.1. The working mechanism of multi-environment collaborative mental health education is inconclusive

At present, Chinese colleges still have many flaws in the cooperative education with families and society, such as deviation of concept and understanding, lack of communication, sound guarantee mechanism, establishment of evaluation and feedback mechanism[20]. Therefore, the author proposed that the construction of psychological education system in colleges is still dominated by schools and supplemented by network propaganda in terms of environmental atmosphere creation. There are relatively few psychological education activities through the creation of family, society and other off-campus environment, and the work pattern of school, family, society and network environment is not mature. At present, many psychological problems and crises among college students are not directly caused by the campus environment after admission, but

usually come from the family of origin, past school experience, social environment and other aspects. If psychological education is carried out only from the perspective of creating campus cultural atmosphere, it cannot grasp the internal causes of psychological problems of students comprehensively and accurately. Therefore, it is impossible to formulate more scientific, targeted and effective problem-solving measures. Besides, it is urgent for colleges and universities to establish and improve the working mode of multi-environment collaborative psychological education to promote the healthy growth of college students.

### 3.1.1. Lack of communication

Students have a generational gap with teachers and parents who make a lack of communication skills share personal problems. There is a misconception among students about sharing mental health with people. Moreover, parents have failed to create a secure environment to feel safe to make open communications. Misinformation, fear and taboos are the main reasons that students are not comfortable sharing their thoughts[21]. On the other hand, parents and teachers are not concerned about the problems faced by students in schools, public and private places related to discrimination, sexual orientation and physical characteristics. College students are in their transition from the teenage phase which has created a sense of embarrassment while sharing personal thoughts. There are berries created by parents and teachers to feel free to share health conditions to take necessary actions. Parents are not aware of the experiences faced by students which delay the treatment process to overcome challenges. A lack of communication increases mental stress which generates suicidal tendencies among students. Students used to reach the chronic stages of mental health due to negligence in treatment processes.

### 3.1.2. Flaws in the cooperative education with families

Increasing changes in societies have pressurized parents to become busy with activities to provide high-quality materialistic elements to children. Parents have less time to spend with students in the cooperative learning system. Digitalization has included advanced features and tools like visuals digital boards, and AI-based systems to develop the visualization abilities of students[22]. However, parents have been facing problems in learning new skills to guide students in the education system. Lacking interest and knowledge on educational technologies has reduced the interdependence between students and parents to share problems. Moreover, students have busy schedules which has reduced the interactive nature to corporate with parents. Parents have shown less interest in understanding the skills of digitalization to reduce the age gap by including modern attributes[23]. Parents have stated spending time on social media has created mental distance with students. Digital platforms have been influencing students which has created a lack of interest in studies. Parents have not actively involved themselves in cooperative learning programs which have increased distance with students.

### 3.1.3. Poor feedback mechanism

Despite advancements in mental health education, students have been facing mental diseases and stressor conditions due to a lack of effective feedback mechanisms. Facing mental issues and traumatized situations are stigma in society which has made it challenging to provide effective feedback mechanisms to students[24]. Moreover, advancements in academic institutions could not remove the judgmental nature of individuals which has created unsafe places. There is a lack of acceptance in people to discuss the topic of different mental health. Students have been facing difficulties in normalizing the topics on mental health. Moreover, feedback-taking channels are not utilized properly by using online platforms, face-to-face meetings and surveys[25]. Teachers have to manage different activities like administrative work, curriculum setting, and assignments which reduce the energy to make continuous improvements in the feedback process. Misbehaviors of students and increasing lack of interest in studies are examples of applications of poor

feedback processes.

## 3.2. One size fits all mental health education does not meet the individual needs of students

### 3.2.1. Mental health education activities are curricular

At present, most of the teachers in the mental health education counseling centers in China's colleges are from psychological backgrounds, but some schools have limited personnel and cannot meet the requirement of 1 to 4000 ratio between college teachers and students stipulated by the Ministry of Education of China. Moreover, most teachers engaged in mental health education are not psychology majors, which will inevitably affect the effective development of mental health education in schools[26]. Therefore, to maximize the promotion and popularization of mental health knowledge among students, colleges usually encourage students to take courses, special lectures, job skills training and group psychological activities to equip them with mental health literacy. In terms of content, such activities tend to be curricular and aim to enhance students' basic psychological knowledge and skills. Based on the common problems existing in the psychological development process of college students, these general activities are not able to meet the differences of students' psychological needs in gender, major, grade and their own confusion. In the process of carrying out these activities, students sometimes have a low degree of interaction with each other due to the lack of interest and innovation, and it is difficult to ensure the effectiveness of activities.

### 3.2.2. The psychological counseling method is simple

Colleges still take one-to-one psychological counseling as the main way for the psychological problems existing in the personal characteristics of college students. However, some college students still have misunderstanding and stigmatization towards psychological counseling. As a result, they are not willing to seek help and support from psychological counseling when they have psychological problems. Therefore, in carrying out mental health education activities, colleges should try to broaden the ideas and methods of work on the basis of meeting the common needs of the majority of young students, and cater to their individual development needs through the use of activities closer to students' aesthetic taste, so as to better meet the differences of students' psychological needs.

## 3.3. The effect of mental health education on the cultivation of students' good behavior habits is not obvious

### 3.3.1. It is vital to strengthen the positive effect of good family education on college students

Abnormal psychological and behavioral problems of college students have become increasingly prominent, attracting more and more attention from colleges. These problems are the formation of psychological and behavioral habits in the final analysis[27]. The formation of college students' behavior habits mainly come from the long-term influence of family education. Parents' lack of family education for their children, their own bad habits and improper family upbringing (such as too much indulgence or too autocratic upbringing) will likely lead to college students to develop psychological problems and behavioral deviations to a serious level. In Ecological Systems Theory, Bronfenbrenner emphasizes that developing individuals are nested in a series of interacting environmental systems, each system interacts with other systems and individuals and influences many important aspects of development such as family, school, society, etc.[28].

### 3.3.2. It is necessary to strengthen home-school co-education to promote the healthy growth of college students

Ecological Systems Theory proposes that for students, school is the microsystem that has a greatest influence on them apart from family[29]. Therefore, in order to improve students' bad behavior habits such as

study habits, living habits, consumption habits, civilized habits, etc.[30], colleges should not only give play to the ideological guidance of teachers and the exemplary role of students' backbone, but also establish a long-lasting home-school co-parenting mechanism to jointly promote college students to establish a rational, peaceful, positive and sunny state of mind in order to form better and lasting behavior habits.

# 4. Constructing mental health education system based on ternary interactive determinism

## 4.1. Building a positive school, family, social and internet environment to help college students develop healthy personality and healthy behavior habits

Developing feedback channels:

Providing different opportunities to take feedback from students is an effective solution to identify common mental problems faced by students. Skilled and experienced teachers are required to provide feedback sessions to prioritize students' mental health. Developing peer groups to monitor the development of students is important to provide open opportunities[25]. Academic institutions in China need to communicate with peer groups to organize educational programs.

Improving curriculum:

Current education systems are focused on developing curriculums which need to prioritize the mental health issues of students. Conducting workshops can be an important measure to encourage student to share their valuable feedback. Digital-based reporting systems can use the digital literacy of students to understand their perspectives regarding mental health-related matters[31]. Curriculums have to be designed in a way to remove stigma and the judgmental nature of individuals which can reduce hesitation in students.

Developing cooperative learning:

Students have felt resisted and hesitated to share their feelings regarding mental illness with parents and teachers. Providing online platforms and channels can change the surveying process to take quick and short-term initiatives. Implementing changes in curriculums is required to create sustainable momentum in the feedback-taking system. Organizing platforms to increase awareness among parents and teachers can increase the effectiveness of communication processes. Funding and time management are two vital resources to develop the current condition of mental health education. Involving skilled teachers to prioritize the feedback of students can prevent mental issues from reaching chronic stages[32]. Specialised training courses can enhance the skills of teachers to change the perception of mental health.

### 4.1.1. To create high-quality courses of mental health education for college students based on the main position of school psychological education

"College Students' Mental Health Education" is a public compulsory course that all college students should learn in school, but also an important way to achieve full coverage of psychological education knowledge. Colleges should give full play to the main channel role of this course in the publicity and popularization of mental health knowledge, innovate and improve the teaching form and content. On one hand, the author propose that colleges can change the current teaching mode based on classroom teaching. Through combining classroom teaching, offline independent learning and extracurricular practice activities, students can master the knowledge of mental health at the same time to apply what they have learned. On the other hand, the author propose that colleges can combine teaching content with students' personality characteristics. According to the main psychological needs of students, teachers try to use case analysis method, scenario simulation method, role playing method, psychological assessment method and other

methods to give systematic in-depth teaching of relevant chapters. Through constructing a teaching curriculum system with diverse forms, distinct themes, strong practicality and high participation of students and unifying mental health education with guiding college students' healthy growth and success to improve the effectiveness of "College Students' Mental Health Education" course teaching.

### 4.1.2. Carry out home-school co-education online classes to help create a harmonious family environment

In combination with the characteristics and rules of physical and mental development of students, well-known experts and scholars are invited to regularly carry out online classes of "home-school co-parenting" for parents of students. The classes come under different themes, such as parent-child relationship, effective communication, new students' adaptation. In addition, "Guidelines for Family Mental Health Education of College Students" needed to be compiled to enhance parents' attention and emphasis on children's mental health in various forms. It provides effective practical skills for parents to carry out family education for their children, strengthens the "home-school" cooperative education system, and helps and guides parents and children to jointly create a family atmosphere conducive to the establishment of healthy and sunny mentality and the formation of good behavior habits of college students.

### 4.1.3. Strengthen the cooperation between school and medical institutions and strengthening social humanistic care and psychological counseling for students

Colleges should strengthen the cooperation with authoritative psychiatric hospitals in the aspects of mental health education, psychological problem investigation, psychological disorders and psychological crisis individual referral. They can establish a smoother, orderly and controllable green channel for psychological crisis intervention and rapid treatment in order to improve the prevention and treatment system of college students' psychological problems and mental diseases. By guiding and intervening students in psychological crisis in various forms, effectively promote the rehabilitation of mental disorders and mental health development of students, and further enhance the social level of psychological support services for students.

### 4.1.4. Expanding new media publicity channels for mental health knowledge and build various online education platforms

At present, the network platform for the popularization and publicity of mental health knowledge for college students is mainly WeChat public account, which usually uses static graphic resources for publicity and promotion in students' QQ and WeChat group. The publicity content is a little more than a formality, which is difficult to attract students' attention. Colleges and universities should make full use of a variety of new media platforms, such as WeChat video account, Douyin, Weibo and some popular live streaming platforms. By integrating beautiful articles, pictures, audio, short videos and other vivid forms of presentation, the relatively profound and boring psychological principles are presented in a way that is easy to understand and more pleasing to students, so that students can get the mental health knowledge instilled in their minds and hearts.

### 4.2. Shaping the positive psychological quality of college students and lead the healthy behavior habits and realize the organic unity of themselves and the environment

In order to deeply explore the main psychological needs of contemporary college students, the investigator quoted the data analysis result of psychological abnormalities of various factors of SCL-90 of all the college students from 'Annual Student's General Mental Health Survey Report'[33], and the result of individual psychological counseling problems of 500 college students from 'Annual Student's Individual Psychological Counseling Report'[34]. These data analysis results were derived from the data of college

students in Shandong Youth Political Science College from 2020 to 2022.

**Table 1** shows the number of abnormal students in each factor of SCL-90 scale in the general mental health test in Shandong Youth University of Political Science during the autumn of 2020–2022. The number of abnormal students in each factor every year was for students who score more than 3 points for that factor. The total number of abnormal students every year was for students with a total score of more than 160 points, or more than 43 positive items, or more than 3 points on any factor. The abnormal students with each factor have a certain overlap for the reason that each abnormal student may contain multiple factors, so the number of abnormal students in each factor will exceed the total number of abnormal students after adding up.

**Table 2** shows the abnormal rate of students with various factors of SCL-90 scale in the general mental health test in Shandong Youth University of Political Science during the autumn of 2020–2022. The abnormal rate of each factor every year was calculated by dividing the number of abnormal students with this factor by the total number of abnormal students in the SCL-90 (as shown in **Table 1**). The top 5 factors with abnormal rates were obsessive-compulsive symptom, interpersonal sensitivity, depression, anxiety and hostility, among which the top 3 factors with abnormal rates for three consecutive years were obsessive-compulsive symptom, interpersonal sensitivity and depression from high to low.

**Table 3** shows the number and proportion of cases for psychological counseling problems among 500 college students in Shandong Youth University of Political Science from 2020 to 2022. The proportion of cases for each type of psychological counseling problem was calculated by dividing the number of cases with this type of psychological counseling problem by the total number of cases with all types of psychological counseling problem. The top 5 types of psychological counseling problems and their proportions from high to low were emotional distress (102 cases, 20.40%), interpersonal relationship (82 cases, 16.40%), love emotion (74 cases, 14.80%), self-exploration (73 cases, 14.60%) and academic problem (61 cases, 12.20%).

**Table 1.** Number of abnormal students with various factors of SCL-90 scale in the general mental health test in Shandong Youth University of Political Science during the autumn of 2020–2022.

| Factor of SCL-90 | Number of abnormal students from 2020 to 2022 | | |
|---|---|---|---|
| | **2020** | **2021** | **2022** |
| Somzatization | 72 | 55 | 127 |
| Obsessive-Compulsive Symptom | 287 | 205 | 492 |
| Interpersonal Sensitivity | 213 | 146 | 359 |
| Depression | 179 | 129 | 308 |
| Anxiety | 139 | 96 | 235 |
| Hostility | 111 | 95 | 206 |
| Horror | 101 | 62 | 163 |
| Paranoid | 97 | 84 | 181 |
| Psychosis | 86 | 55 | 141 |
| Others | 106 | 88 | 194 |
| Total number of abnormal students | 1074 | 746 | 1187 |

**Table 2.** Abnormal rate of students with various factors of SCL-90 scale in the general mental health test in Shandong Youth University of Political Science during the autumn of 2020–2022.

| Factor of SCL-90 | Abnormal rate from 2020 to 2022 | | |
| --- | --- | --- | --- |
| | **2020** | **2021** | **2022** |
| Somzatization | 6.70% | 7.37% | 5.81% |
| Obsessive-Compulsive Symptom | 26.72% | 27.48% | 30.16% |
| Interpersonal Sensitivity | 19.83% | 19.57% | 18.96% |
| Depression | 16.67% | 17.29% | 15.84% |
| Anxiety | 12.94% | 12.87% | 10.95% |
| Hostility | 10.34% | 12.73% | 12.30% |
| Horror | 9.40% | 8.31% | 11.04% |
| Paranoid | 9.03% | 11.26% | 9.44% |
| Psychosis | 8.01% | 7.37% | 8.09% |
| Others | 9.87% | 11.80% | 9.44% |

**Table 3.** Number and proportion of cases for psychological counseling problems among 500 college students in Shandong Youth University of Political Science from 2020 to 2022.

| Types of psychological counseling problems | Number of cases for each psychological counseling problems | Proportion of cases for each psychological counseling problems |
| --- | --- | --- |
| Emotional dsturbance | 102 | 20.4% |
| Interpersonal relationship | 82 | 16.4% |
| Love emotion | 74 | 14.8% |
| Self-exploration | 73 | 14.6% |
| Academic problem | 61 | 12.2% |
| Psychosis | 50 | 10.0% |
| Life-career development | 18 | 3.6% |
| adapt problem | 15 | 3.0% |
| Parent-child relationship | 13 | 2.6% |
| Personality Problem | 12 | 2.4% |

Based on the above data results, college students' current needs for main psychological problems can be summarized into five aspects: emotional distress, interpersonal relationship, self-exploration, academic problems and love and emotion. Therefore, according to these typical types of psychological problems colleges and universities can be targeted to develop a systematic program of psychological education activities, such as activities can be divided into "Explore and Accept Yourself", "Say Goodbye to Procrastination", "Bid Farewell to Inner Anxiety", "Building Friendship Bridge", "Out of Haze of Depression", "Grasp Sail of love" and other characteristic themes. Through group psychological counseling, group sand table games, "OH" cards and other forms of group activities, means of edutainment can be used to guide college students with common psychological problems to relax their psychological guard and mental alertness. By giving their own subjective initiative into full play, they can enhance their understanding and acceptance of themselves and actively explore their own advantages in the process of mutual support and offer help among group members. Eventually students are able to rationally face their own disadvantages, cultivate, and improve their own habits and enjoy a healthy family, school, social and virtual life.

### 4.3. Guiding college students to adjust and change their behavior habits and establish a sunny attitude and actively integrate into the family, school and social environment

### 4.3.1. Strengthening the construction of psychological education team in colleges and universities and promote students to develop good behavior habits through teachers' guidance and peer guidance

According to the actual work needs of different groups in the psychological education team of colleges and universities, such as school psychological counseling teachers, college counselors, class teachers, commissaries in charge of class psychology and dormitory observers, mental health skills training and salon exchange and sharing meetings on different topics are carried out regularly on a graded and classified basis, focusing on improving the professional, standardized and scientific level of the work team. Give full play to the role of behavioral guidance and peer guidance to a greater extent, guide most students to enhance their awareness of norms of behavior and set up correct world outlook, outlook on life and values in the process of practical participation through different forms of themed class meetings such as on-site teaching, video broadcast, knowledge competition and scene simulation. Consciously adjust their own bad behaviors and habits in study, life, network, and society, and constantly shape positive psychological quality, to promote the overall development of personal quality in school in real life, strive to be a qualified netizen in the network world, and strive to become a responsible person after entering the society.

### 4.3.2. Give full play to the subtle effect of family education on the formation of good behavior habits of college students

For college students, parents are the group that accompany them to grow up the longest. Therefore, in addition to relying on school education, family education is also crucial to the formation of college students' good behavior habits. Since most of the students have grown up, their self-consciousness is becoming more mature, and they hope to be able to think and judge independently and choose behaviors in many aspects. In family education, parents often adopt adult's thinking mode to preach to their children and tend to be impatient in the process of teaching and correcting their bad behaviors and habits. They often impose high requirements on their children from their own perspective. As a result, children's rebellious psychology will be intensified, resulting in a vicious cycle. Therefore, first of all, parents should change the past idea, establish a parent-child relationship of equality, democracy, mutual respect and trust with their children, treat their children as an independent individual to talk, and reserve appropriate freedom and independent space for them. Secondly, parents should try to use "Rosenthal effect" (Rosenthal effect: The core concept is "expectation", which implies certain expectation for a person and transmits this expectation to him through his words and deeds, etc., so that he will be more confident and achieve success[35]) in family education, giving more praise and encouragement to their children's behavior habits on the basis of correcting and correcting mistakes to help them explore their own advantages and potential. Last but not least, the development of children's behavior is inseparable from parents' example. Only parents themselves will adhere to the principle that suit the action to the word and mistakes must be corrected to win the trust and respect of their children, in order to help college students gradually improve their personal behavior habits from passive to active and from hetero to self-discipline, and then work together with their families to build a harmonious and trusted family environment.

### 4.4. Method of data collection

The principal investigator of this study is currently working at the Psychological Counseling Center of Shandong Youth Political Science College, Jinan City, Shandong Province, China, and now responsible for mental health education of students in this college. One of the important tasks is to carry out general mental health survey and psychological counseling services for students in this college, and then write the annual

general mental health survey report and student's individual psychological counseling report. Besides, SCL-90 is a secure process used in the annual general mental health survey to secure information of students by respecting their participation. The data generated in these two reports did not cause any interference to students' daily life and academic. Moreover, the data presented in the report is anonymous overall data and does not contain any personal information of students.

## 4.5. Ethical consideration

According to the 'Approaches to ethical review of life sciences and medical research involving humans'[36] issued by National Health Commission of the People's Republic of China, researchers using data that obtained legally, does not interfere with public behavior or is anonymized to conduct research can be exempted from ethics approval. The data used in this study conforms to the circumstances stipulated in the document that can be exempted from ethical approval, thus there is no ethical consideration.

# 5. Conclusion

College students are the future builders and successors of the country. Mental health plays an important role in developing their own good character and behavior, family happiness and social stability and harmony. College students' mental health education also plays an irreplaceable role in the education and management of colleges. College mental health educators should be based on the psychological needs and mental health status of contemporary college students, and constantly improve and innovate the working mode of mental health education on this basis. Improving the mental health level of college students from these three aspects of environmental atmosphere, personality characteristics and behavior habits, create a harmonious environment atmosphere, and promote the comprehensive and coordinated development of college students, will help them to make greater contribution to the national revitalization and social development.

## Findings and recommendations

Researching the psychological health of college students has provided relevant ideas on the modern education system. Campus culture and the cultural background of families have become important elements in understanding the mental challenges faced by students in colleges. Developing an ecosystem of learning is promised by analysing the contribution of educational institutions and parents. There is a lack of real cases addressed in the research which can reduce the theoretical foundation[37]. Identifying real mental cases can highlight the importance of developing mental health curriculums in colleges.

Analysing the existing problems in mental health education has included the importance of multi collaborative nature of institutions. However, developing an effective collaborative nature needs governmental support and funding. There is a lack of governmental perspectives included in the research which has reduced the description of potential strategies for development. Mechanisms in Chinese education can be represented by including the teachers' and parental perspectives. Highlighting the stressor elements faced by teachers can represent the reasons behind inefficiencies in the development in mental health programs. There are courses discussed to identify mental factors faced by students which have eliminated the problems faced by the academic system to manage the increasing competition.

Using the SCL-90 scale has helped to identify abnormalities among students by conducting the health survey. Problems are promised in the survey like emotional stress, interpersonal relationships and love emotions. However, including survey on the counseling processes can help to identify the needs of students to reduce psychological problems[38]. Moreover, increasing population and generational changes have made changes in psychological health which needs an effective system to handle sensitive issues. Therefore, counseling problems need to be highlighted to increase the effectiveness of the research.

# Author contributions

Conceptualization, CC and HSK; methodology, CC; software, CC and CL; validation, CC, HSK and YCK; formal analysis, CC; investigation, CC and CL; resources, CC and CL; data curation, CC and CL; writing—original draft preparation, CC; writing—review and editing, HSK, YCK and CL; visualization, CC; supervision, HSK and YCK. All authors have read and agreed to the published version of the manuscript.

# Conflict of interest

The authors declare no conflict of interest.

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