Empathy, emotional expression and peer relationship among Chinese college students

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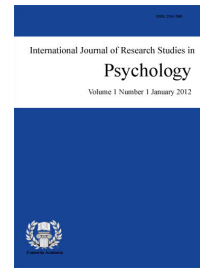*Jinan Preschool Education College, China*

Abstract

Empathy, emotional expression and peer relationship are important factors affecting the social development of college students. However, the current research on college students' empathy is still in the exploratory stage, and the research on the relationship among empathy, emotional expression and peer relationship is scarce. Therefore, to carry out the research on these aspects is not only the objective needs of the psychological development of college students, but also the realistic requirements of mental health education. This study explores the effects of empathy and emotional expression on the peer relationship of Chinese college students and its mechanism, so as to provide relevant data basis for improving the group mental health level of college students. Through literature analysis, this study investigated the empathy, emotional expression and peer relationship of 700 college students from 5 universities in Shandong province with a questionnaire survey, and 643 valid questionnaires were collected. Regression models were used for data analysis. The results showed that the correlation between the study variables of empathy and emotion expression was significantly positive (P < 0.01). If college students had better emotional empathy ability, their emotional expression would be better, and the total score of empathy and emotion expression and peer relationship was negatively correlated, indicating that college students with better empathy and stronger expression ability would have better peer relationship. Therefore, schools and families should encourage college students to enhance their emotional empathy ability and actively express emotions, so as to guide college students to cultivate good interpersonal relationships and increase the quality of peer relationships to promote their good mental health level.

Keywords: Chinese college students, emotional empathy, expressive competence, peer relationship

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1. Introduction

With the popularization of higher education in China and the increasingly fierce competition, the frequency of psychological and behavioral problems among college students presents a rising trend (Li et al., 2020). The physical and mental development of college students is rapid, and it is also a more sensitive and fragile period, which is often troubled by internal and external factors. Peer relationship is the main demand of college students for interpersonal relationship, and college students' Empathy and emotional expression are one of the important factors affecting college students' peer relationship (Zhang, 2019). For college students with high Empathy ability, if their emotional expression is low, they will easily neglect solving practical problems and fall into negative emotions without realizing it, which will lead to a vicious cycle in the long run, causing more negative emotional expression of college students to affect peer relationships and further affect their mental health level (Li, 2018). Therefore, this study explores the relationship between Empathy, emotional expression and peer relationship among college students.

Empathy is the ability to experience the inner world of others (Abdullah et al., 2020). Rogers made people familiar with the term empathy, which he discussed widely in the field of psychology, especially counseling (Yan, 2022). Empathy, as a behavioral response ability, is a booster of helping behavior and prosocial behavior, as well as an adhesive for harmonious interpersonal relationship. Empathy resonates with the emotional experience of others at the cognitive and emotional levels, and plays an important role in interpersonal communication (Ou, 2018). In universities, many college students' poor ability to empathize will cause peer relationship troubles and lead to different psychological problems (Qiu, 2022). Some college students have a high level of empathy, are too sensitive to what is happening around them, and excessively identify the bad emotions of others. Inappropriate emotional expression will also lead to interpersonal tension and affect peer relationships. If the ability of empathy is appropriate, college students can well identify others' emotions and capture subtle interpersonal information. Such college students are more cordial and warm, and they are more loved and welcomed by others, which is more conducive to the improvement of their peer relationship (Chang, 2023). Based on the above studies, the definition adopted in this paper believes that empathy is the process of individuals recognizing and judging others' thoughts and understanding others' experiences and feelings at the cognitive and emotional levels.

Emotional expression is the process of transmitting and manifesting an individual's internal psychological state (Long, 2023). Friedman et al. believe that emotional expression is the ability to express internal emotional states. Gross and John define emotional expression as the typical behavioral change associated with emotional experience, which is accompanied by different expressions of action, such as happiness, crying, anger, sadness, etc. (Song, 2021). Xu Yuanli defined emotional expression as the expression of emotional information in the form of facial representation, verbal representation, physical representation and physical representation (Cao et al., 2021). Positive emotional expression can effectively promote interpersonal harmony and promote social harmony. The important significance of cultivating college students' ability to express positive emotions lies in encouraging them to express their ideas, interact with others better, and handle the relationship with classmates and friends (Jones, 2022). Study the expression of emotions in order to better study peer relationships. Based on existing research results, this study defines emotional expression as the process in which individuals convey their inner emotions through corresponding behaviors through verbal or non-verbal means, which fully reflects certain social interaction (Song, 2021).

For college students, peer relationship is one of the most important interpersonal relationships and an important part of their social support system. The quality of peer relationship directly affects the physical and mental health of college students (Ji et al., 2020). Peer relationship refers to a kind of parallel interpersonal

relationship established through mutual activities or cooperation between people close to or of the same age (Lisha et al., 2021). As a full-time psychology teacher in a university, the researcher found in the course of his work that more than 85% of the students in need of psychological counseling have interpersonal relationship troubles. Therefore, this study discussed the empathy and emotional expression that affect the peer relationship of college students, and conducted the research by selecting students from several representative universities. This paper tries to find an effective way to promote college students' peer relationship and further improve their mental health level. Based on the existing research results, peer relationship is defined as an equal and parallel interpersonal relationship cultivated among students, peers and friends in the process of interaction, which plays an important role in the social development of college students.

Previous studies on college students' peer relationship mainly focused on the current situation investigation and related research, specifically exploring the impact of college students' peer relationship on academic performance, mental health, socialization and other aspects, while there were few related studies on other aspects (Song, 2021). In this study, college students from five universities in China were selected as the main subjects to explore the relationship between empathy, emotional expression and peer relationship among college students. In previous studies, some study the influence factors of peer relationship on learning engagement (Peng, 2021), some study the relationship between adult attachment, emotional expression and Empathy (Qiu, 2022), and others study the relationship between college students' Empathy ability, social self-efficacy and interpersonal skills and intervention studies (Wei, 2021), but no researchers have studied the relationship among college students Empathy, emotional expression and peer relationship.

In order to improve college students' peer relationship more effectively, we explore how college students' empathy and emotional expression affect their peer relationship and the relationship between the three. To sum up, this study hopes to further explore the possible intermediate mechanism of action by exploring the relationship among college students' empathy, emotional expression and peer relationship, with a view to improving individual emotional expression ability through later empathic training and intervention, thereby enhancing college students' peer relationship and further improving their mental health level.

Objectives of the Study - This study explores the influence of Empathy on emotional expression and peer relationship in Chinese college students, as well as the possible relationship between empathy, emotional expression and peer relationship. Specifically, this paper first described the demographic variables of Chinese college students from the aspects of gender, age, grade level, major, university type, residence, family monthly income, whether the only child or not, father's occupation and mother's occupation; determined the respondents' empathy, emotional expression and peer relationship; compared the variables when grouped based on profile; tested the relationship among the variables; investigated the effect of empathy on emotion expression and peer relationship; and proposed an intervention plan of Chinese college students in promoting personal growth, improving empathy, emotion expression ability, improving peer relationship and increasing overall happiness.

2. Methods

Research Design - In the study "Empathy, Emotional Expression and Peer Relationship among Chinese College Students", descriptive survey method was used to collect quantitative data of subjects. This approach involves conducting structured questionnaires or surveys of the sample population to gather information about their thoughts, feelings, attitudes, and behaviors in relation to the variables being studied. The collected data is analyzed using statistical techniques such as mean, standard deviation, and correlation to describe the relationship between the variables. By using standardized questionnaires, researchers can ensure consistency in data collection and facilitate comparisons between participants. The descriptive survey method was chosen because of its efficiency in collecting data from a large number of participants in a relatively short period of time. This approach enables objective and systematic analysis of the prevalence of empathy, emotional expression and peer relationships in the assessed target population. By quantifying these variables, the researchers got a clear picture of their distribution. In addition, statistical analysis of the data allows for the identification of correlations

between variables, providing valuable insights into the underlying mechanisms and influencing factors of college students' emotions and emotional expression. This information is essential for the development of targeted interventions and support services.

Participants of the Study - In this study, students from 5 representative colleges and universities in Shandong were selected as research objects, including 4 public colleges and 1 private college. There are 2 undergraduate colleges and 3 junior colleges. Using the method of questionnaire survey, 700 questionnaires were distributed in these 5 universities, and 643 valid questionnaires were collected. Students are invited to conduct a questionnaire survey on a voluntary and confidential basis. The researchers conducted an online questionnaire survey using the questionnaire magnitude, including students from different places of origin, majors, grades, and genders. After college teachers explain the purpose of the survey to the students, the students voluntarily scan the two-dimensional code and open the questionnaire link, and say that they will be paid to participate in the questionnaire.

Measures - *Interpersonal Response Indicator Questionnaire* Liu Yumin pointed out that most questionnaires used to measure empathy were Interpersonal Response Indicator Questionnaire (IRI-C), which was adapted by Wu Jingji et al.'s based on the interpersonal response Indicator scale compiled by Davis and adapted according to China's national conditions, with a total of 22 questions (Xu et al., 2018). There are four dimensions: opinion selection, empathic attention, imagination and personal sadness. The cognitive component includes opinion selection, and the affective component includes imagination, empathic attention and personal sadness. The cognitive component is also called the cognitive empathy dimension (point of view selection). In the questionnaire, the corresponding questions are: 6, 9, 15, 19, 22, which mainly tests whether an individual can think from the perspective of others and distinguish the views of others from his own. The corresponding questions of imagination in the questionnaire are: 3, 5, 10, 12, 17, 20, which mainly investigate the emotional and behavioral involvement of individuals in objective things; The questions of empathy concern in the questionnaire are as follows: 1, 2, 7, 11, 14, 16, mainly examining the individual's concern for the situation of others and their emotional and behavioral responses; The corresponding questions of personal sadness in the questionnaire are: 4, 8, 13, 18, 21, which mainly examines the feelings of anxiety and fear generated by individuals in a stressful environment; Reverse scoring questions are: 2, 5, 10, 11, 14. A 5-point rating system is adopted, which is completely consistent, basically consistent, uncertain, basically inconsistent, and completely inconsistent. The Cronbach's α coefficient of internal consistency of the scale was 0.750, and the partial-half reliability was 0.734, indicating that all items had reached a good level of internal homogeneity, and the Cronbach's α coefficient of internal consistency of each factor was 0.532-0.758. It is basically consistent with the results of IRI-C (the Taiwan study) (Cronbach's α coefficient is 0.53 to 0.78) (Li, 2022). The retest reliability of the total score of the scale was 0.737, and the retest coefficients of each factor ranged from 0.625 to 0.735, which was consistent with the results of the Taiwan study (0.56 0.82), indicating that the scale scores had good cross-time stability. After repeated tests, the internal consistency of the four dimensions of the scale was between 0.71-0.77, the retest reliability was 0.62-0.80, the correlation coefficient r between the total score of IRI and each factor was between 0.564 and 0.736, and the correlation coefficient r between each factor was between 0.087 and 0.410, and the correlation degree was statistically significant. Thus, it is known that the questionnaire has good reliability and validity in this study (Xu et al., 2018).

Berkeley Emotion Expression Scale Berkeley Emotional Expression Scale Questionnaire (BEQ) (Gross, John, 1997) was compiled based on the theory of multidimensional emotional expression correlation model created by Gross and Munoz, and was used to collect data on emotional expression of subjects (Yang, 2023). The scale consists of 16 items, involving three dimensions, which can be used to indicate the components of emotional Expressivity. Positive Expressivity refers to the expression of positive emotions, corresponding to four items in the questionnaire: 1, 4, 6, 10; Negative Expressivity refers to the expression of negative emotions, corresponding to 6 questions in the questionnaire: 3, 5, 8, 9, 13, 16; Intensity of Expression refers to the degree of willingness and tendency of an individual to express, and the corresponding six questions in the questionnaire are: 2, 7, 11, 12, 14, 15. A Likert score of 7 is used to indicate an individual's performance on the project

description, from low to high. Among them, positive emotion expression and negative emotion expression focus on behavior, referring to different expression ways of emotion at the behavioral level, while the intensity of emotional expression is described and explained as the degree of tendency and willingness of emotional response (Qiu, 2022). By adding up the scores of the 16 questions, the higher the score indicates the stronger the tendency and degree of emotional expression of the individual. This study aims to explore emotional expression from a multi-dimensional perspective, so this scale is used for measurement, which can better see different aspects of emotional expression compared with the single-dimensional scale (Zhan, 2022). The research shows that the overall internal consistency coefficient of the questionnaire is 0.77, and the internal consistency reliability of the five subscales is between 0.58 and 0.72, indicating that the reliability and validity of the scale are good (Li, 2018).

The Student Peer Relationship Scale The Student Peer Relationship Scale was compiled by Asher (1986) and consisted of 16 questions (Yang, 2021). In this study, the scale revised by Zhang Yali was divided into 4 grades, from a "completely agree" to D "completely disagree". The higher the score, the worse the peer relationship. The scale has been widely used in a large number of data studies in China, and has a high internal consistency reliability. Reverse grading questions :2, 4, 6, 8, 9, 11, 12, 13, 14, 16. The scale is divided into three dimensions: undesirability, exclusion and loneliness. Unpopularity :1, 2, 3, 4, 5, 15, exclusion :6, 7, 8, 12, 14, loneliness :9, 10, 11, 13, 16. The higher the total score of each subscale, the higher the degree of unpopularity, rejection and loneliness, the worse the peer relationship. In this study, the internal consistency coefficient of the scale was 0.94, and the internal consistency coefficient of the subscales of unwelcome exclusion, exclusion and loneliness were 0.92, 0.91 and 0.88, respectively (Liu, 2021). In her study, Jin (2022) measured the Cronbach's alpha coefficient of the whole scale at 0.823, indicating a good reliability index. The internal consistency coefficient of the scale was 0.776 and the structural validity was 0.792, showing good reliability and validity (Hong, 2023).

Data Gathering Procedure - As a full-time psychology teacher in colleges and universities, the researcher found that more than 85% of the visitors had peer relationship problems in the course of work. After more than ten years of work accumulation and precipitation, he deeply thought about the problems faced by students and conducted in-depth discussions with college students, accumulating rich research materials. After a large number of face-to-face psychological counseling and on-site observation, In combination with structured and unstructured interviews, the researchers found that among college students with peer relationship distress, poor empathy ability or poor emotional expression ability are important influencing factors of their peer relationship.

College students are the hope of the future, bearing high expectations from families and society, and their healthy physical and mental development is very important (Wu, 2020). Since 1994, all kinds of schools in China have gradually incorporated mental health into moral education (Liang et al., 2018). Due to China's population policy, some of today's college students are the only child. At the same time, under the influence of diversified information, today's students emphasize the development of "personality". Some students blindly pursue "non-mainstream", "maverick" and "exclusive" (Li et al., 2022), and the influence of some media may lead to the reduction of their empathy ability. They are self-centered and rebellious, unwilling to put themselves in others' shoes, respect and listen to others' points of view. As a result, they are more likely to be emotional and go to extremes when they are still in the "psychological wetness", with low interpersonal emotions and apathy, and serious psychological problems (Li et al., 2018).

The development of modern information society is integrated and two-faced. It not only brings abundant information resources to people, but also brings people's social isolation in reality (Li et al., 2021). The degree to which college students express the emotions they experience will affect their lonely experience in interpersonal relationships. The less loneliness you will feel in your life, and the suppression of emotional expression will hinder interpersonal interaction and adversely affect your physical and mental health (Sun et al., 2021). Individual suppression of emotion will lead to the weakening of useful information exchange function in interpersonal interaction (Li et al., 2021). Previous studies have found that there are many reasons for the

disharmony of Chinese college students' peer relationship, but no separate study has studied the relationship between Empathy, emotional expression and peer relationship. In light of these issues, the researchers decided to explore college students' peer relationships and their related factors. On the basis of reading a large number of monographs and literature, the researchers decided to focus on the study of Empathy and emotional expression in college students. After confirmation with the research supervisor, the relationship between Empathy, emotional expression and peer relationship of college students was finally determined as the study variable.

The researcher collects data around the research topic and variables, and on this basis, repeatedly discusses with the supervisor, and carries out the research strictly and gradually with the approval of the supervisor. Read, select and write papers with the help of a supervisor. Considering the convenience of measurement in the Chinese cultural environment, the researchers searched the previously revised Chinese version of the questionnaire, and the translated version was also selected with good reliability and validity. After completing the above work, the researchers began to issue questionnaires through the Internet. From June 1 to 7, the questionnaires involved 5 universities and 4 public schools in China: Jinan Early Childhood Teachers College, Taishan University, Shandong Institute of Arts and Crafts, and Shandong Labor Technical School, including 2 undergraduate colleges and 2 vocational colleges. There is one private school: Shandong Shenghan Finance and Trade College. These five schools cover normal, comprehensive, art and skill colleges. It is planned that no less than 100 valid questionnaires from each university will be analyzed, and SPSS 27.0 will be used for data statistics, and the results obtained after data analysis will be analyzed, discussed and summarized.

Data Analysis - This study intends to use SPSS27.0 software for data analysis, mainly using the following methods: descriptive analysis, internal consistency coefficient analysis, correlation analysis and regression analysis. Specifically, quantitative data, such as frequency and percentage, mean and standard deviation, are first processed using descriptive statistics. Mann-Whitney and Kruskal-Wallis were then used to statistically treat the significant differences between the variables grouped according to their profiles.

Ethical Consideration - The study design must be reviewed and approved by the Ethics Committee Lyceum of the Philippines University-Batangas Campus before the research can continue. This study resolutely protects the rights of the subjects, and strictly follows the principles of ethics, voluntariness, confidentiality, and benefit and harmlessness. At the beginning of each questionnaire, the researcher explained the purpose and significance of the research to the participants in detail. Before all participants participated in the test, an informed consent form was issued. After obtaining the informed consent of the participants, the survey was carried out, and the privacy of the participants and the content of the questionnaire were guaranteed not to be leaked. Each participant participated voluntarily, anonymously, and was asked to answer questions truthfully and honestly. They were also told that they could voluntarily withdraw from the survey if they did not wish to participate. If the scale in the survey induces the patient's bad emotions, the researcher can also provide appropriate psychological support.

3. Results and discussion

Table 1 displays the distribution of the profiles of the subjects. At the gender level, there were 260 males (40.4%); There were 383 women, accounting for 59.6%, and a total of 643 subjects were surveyed. In terms of age, there are 562 students between 16 and 20 years old, accounting for 87.4% of all the subjects, which is consistent with the main age range of college students to be investigated in this research. There are 80 students between 21 and 25 years old, accounting for 12.4%. Among some students who enter the school late, based on the current education system in China, Students who are nearing the end of their college years may reach the age of 23 or 24, so this part of the subjects is also involved in this study. In this study, 458 students in the first year of college, accounting for 71.2%, 172 students in the second year of college, accounting for 26.6%, and 13 students in the third year or above of college, accounting for 2%. The subjects in this research are mainly freshmen. Since freshmen are admitted, every student is faced with the problem of school adaptation, some students can adapt well while others can't adapt well (Zeng, 2024). One of them may be that the students have poor ability to

empathize with others during the communication process. Even if some students have good empathy for others, if they do not have good emotional expression, their interpersonal relationships will be affected (Li et al., 2019). This is roughly in line with survey expectations.

Table 1
Percentage Distribution of the Respondents Profile (N=643)

Profile Variables	Frequency	Percentage %
Sex:		
Male	260	40.4
Female	383	59.6
Age:		
16-20 yrs old	562	87.4
21-25yrs old	80	12.4
Others	1	0.2
Major:		
Science	37	5.8
Liberal arts	424	65.9
Arts	42	6.5
Physical Education and Health	140	21.8
technical	0	0
Grade level:		
Freshman student	458	71.2
Sophomore	172	26.7
Junior	7	1.1
Senior	0	0
Graduate	6	0.9
Others	0	0
Type of university:		
Public	389	60.5
Private	254	39.5
Where you live:		
Urban	275	42.8
Rural	368	57.2
Monthly household income:		
Less than 5000 yuan	169	26.3
5000-10000 yuan	334	51.9
10000-30000 yuan	106	16.5
30,000-50000 yuan	10	1.6
50,000 yuan or more	24	3.7
Only child or not:		
Only child	135	21.0
not only child	508	79.0
Father's occupation		
Administrative unit	33	5.1
Public institution	65	10.1
Enterprise	90	14.0
Services	85	13.2
Others	370	57.5
Mother's occupation		
Administrative unit	25	3.9
Public institution	65	10.1
Enterprise	74	11.5
Services	122	19.0
Others	357	55.5

The classification of subjects' majors is based on the Catalog of Undergraduate Majors of Ordinary Colleges and Universities (2012) issued by the Ministry of Education and the addition of new majors approved and included in the catalog in recent years. As of March 2024, the professional catalog of China's higher education includes 12 subject categories (excluding military science), 93 professional categories, and 816 kinds of majors. The 12 disciplines include 4 natural sciences: Science, engineering, medicine and agronomy; 8 Humanities and Social sciences: Literature, History, Philosophy, Economics, Management, Law, Education, and Arts. These disciplines combined with the research institute to investigate the main majors of the school, four categories of

science, liberal arts, art, sports and health. In this study, a total of 424 students of arts and sciences participated, accounting for 65.9% of the total subjects; 27 students of science, accounting for 5.8%; 42 students of art, accounting for 6.5%; and 140 students of physical education and health, accounting for 21.8%. Since the surveyors are teachers from normal colleges and universities, and their major majors include liberal arts majors such as primary education and preschool education, more students are selected from liberal arts colleges and universities.

In terms of university types, Chinese universities are roughly divided into two categories: public schools and private schools. In the process of this survey, I pay attention to the balance. The proportion of private colleges and universities is relatively low, so 389 subjects choose public students, accounting for 60.5%, and 254 subjects choose private schools, accounting for 39.5%. In China, public schools attach importance to general higher education. Cultivate compound management talents (Jia et al., 2019), and private schools carry out more vocational education to cultivate compound applied talents, that is, "skilled talents". No matter what kind of school students are, they all have emotional distress and peer relationship distress (Zeng 2024).

In terms of student origin, there are 368 students from rural areas, accounting for 57.2% of the total proportion of the subjects, and 275 students from urban areas, accounting for 42.8%. This is also in line with the proportion of urban and rural population in China. China is a big agricultural country, and the large proportion of students from rural areas is in line with China's national conditions (Li, 2019). In order to ensure the universality and quality of education, more higher education institutions in China are public schools, which have lower tuition fees and can provide financial support such as scholarships and bursaries for students with financial difficulties to ensure their completion of their studies (Zheng et al., 2024). In public schools, students from rural areas make up the majority and are relatively large. This shows that the Chinese government tries its best to provide a fair education environment for Chinese students receiving higher education (Zhang, 2024).

In terms of family income, 169 students have a monthly income of 5,000 yuan, accounting for 26.3%; 334 students have a monthly income of 5,000 yuan to 10,000 yuan, accounting for 51.9%; 106 students have a monthly income of 10,000 yuan to 30,000 yuan, accounting for 16.5%; 10 students have a monthly income of 30,000 yuan to 50,000 yuan, accounting for 1.6%; 24 students have a monthly income of more than 50,000 yuan. It can be seen that China, as a country with a large rural population, has a relatively large rural population, underdeveloped rural economy and low family income. Therefore, students from the middle and lower levels of family income account for a relatively large proportion, which is in line with China's national conditions, and the high-income family income groups are relatively small (Li et al., 2019). According to the general economic law, the social family income tends to be distributed in a pyramid shape, that is, the lower the income, the more the number of people. It can be seen that in Chinese universities, there are more students from rural areas and their family income is not high, which is in line with China's national conditions (Zheng et al., 2024).

In China, the family planning policy on population was introduced in the 1970s and 1980s to control the population, also known as the one-child policy, which means that each couple and each family are only allowed to have one child. This is a unique phenomenon of China's population policy, and the order of birth of children from families with only child and non-one-child family, as well as children in non-one-child family, will affect their Empathy, emotional expression and possible relationship with classmates and friends (Wang, 2020). During the study, information was collected about whether the participants were only children. In the data results, it can be found that among all the participants in the study, 135 were the only child, accounting for 21%, and 508 were not the only child, accounting for 79%. China has relaxed the birth policy in 2016, allowing a family to have more than one child (Ou, 2018). Therefore, some parents of current college students choose to have another child. In this study, the non-only child may have younger brothers and sisters, so the proportion of these children accounts for the majority, which is in line with the current national conditions of China (Wang, 2020).

In terms of father's occupation and mother's occupation, there are five types of occupations: administrative units, public institutions, enterprises, service industries, and others (including farmers and freelancers) (Wu,

2020), the career options of college students' parents, the first four occupations: The number of students in administrative units, public institutions, enterprises and service industries taken together is not as high as that in other types of occupations, such as farmers and freelancers (Zhu et al., 2024). 370 students, accounting for 57.5%, choose other types of occupation for their father, and 357 students, accounting for 55.5%, choose other types of occupation for their mother. From the comparison of the occupation types of fathers and mothers, it can be seen that the number of fathers engaged in administrative work is higher than the number of mothers engaged in administrative work, and the number of mothers engaged in service work is higher than the number of fathers engaged in such work, which is in line with China's national conditions (Wei, 2021). China is a big agricultural country, and the number of people engaged in agricultural production accounts for the majority. Meanwhile, as China's urbanization level gets higher and higher, land has been requisitioned, and most of the people engaged in agricultural production in rural areas have turned to service industry or freelance work because they cannot engage in administrative and career work before (Li, 2019).

Table 2
Empathy of the Respondents (N =643)

Sub-variables	Mean	Standard Deviation	Rank	Interpretation
Cognitive Empathy	3.0195	0.71785	1	Average
Affective Empathy	2.9123	0.70826	2	Average
EMPATHY	2.9659	0.65840		Average

Legend: 1.0-2.49(Inappropriate), 2.5-3.49(Somewhat Inappropriate), 3.5-4.49(Somewhat appropriate) and 4.5-5.0(Very Appropriate)

The data in Table 2 show that the average score of the participants in the empathy scale is 2.97±0.66, indicating that the empathy ability of Chinese college students is at a medium level. Specifically, the average score on the cognitive empathy dimension was 3.02±0.72, and the average score on the affective empathy dimension was 2.91±0.66. The scores of these two subscales are in the middle range, which is consistent with the results of previous studies on college students' empathy in the Chinese context (Song, 2021). Some studies have pointed out that Chinese college students show a relatively consistent medium level of empathy ability, especially in cognitive empathy and affective empathy, which reflects that Chinese college students have certain emotional understanding and empathic experience ability in social interaction (Wei, 2021). Students in the vocational education stage usually face more practical and social interaction opportunities, which has an impact on the development of their empathy ability (Peng, 2021). Intermediate empathy scores indicate that these students have some grounding in emotional communication and understanding of others, but may not have reached higher levels, providing educators and researchers with directions to further enhance students' empathy.

In addition, the data in this study are also consistent with the results of Qiu (2022) and Chang (2023), which further validates the performance law of Chinese college students' empathy ability. Qiu's (2022) study highlighted the importance of empathy in group interactions, while Chang's (2023) study explored the role of empathy in individual mental health. Therefore, the data from this study not only enrich the understanding of the empathy ability of Chinese college students, but also provide a valuable foundation for future research (Qi et al., 2019). These data show that although the empathy ability of Chinese college students is at a medium level, there is still room for improvement, especially in cognitive and emotional empathy. Overall, Table 2 provides the results of measurements of Chinese college students using the Empathy scale, indicating that the overall level of empathy is moderate. The scores of both cognitive and affective empathy also reflect this trend (Yang, 2023). These findings provide an important basis for in-depth analysis of the current situation of Chinese college students' empathy ability and help to formulate more targeted education and training strategies.

The data in Table 3 reflect the scores of Chinese college students in the Emotional Expression Questionnaire, which was developed by Kring and Emmons to assess individual emotional expression ability. The scale contains 16 items, covering three dimensions of negative emotion expression, positive emotion expression and intensity of emotion expression (Zhan, 2022). In this study, the average score of college students was 4.33±1.04 points, the average score of negative emotion expression was 4.22±0.88 points, the average score of positive emotion expression was 4.51±1.30 points, and the average score of emotional expression intensity was

4.25±1.27 points. These data were slightly higher than the average score of Chinese high school students' emotional expression ability (3.44±0.60), but the difference was not significant (Long, 2023). This result suggests that college students' ability to express emotions is improved to some extent because they have experienced more complex emotional interaction and expression needs in both social and academic aspects (Zhu, 2021). However, the score of emotional expression of college students is slightly lower than the average level of Chinese adults (4.76±0.77), which may reflect that college students are still in the process of maturity of emotional expression ability and have not fully reached the mature level of adults (Qiu, 2022). This situation is not uncommon in the cultural context of China, because college students are in the transition period between teenagers and adults, and their emotional expression ability is gradually developing with the accumulation of psychological and social experiences (Zhan, 2022).

Table 3
Emotional Expressive of the Respondents (n=643)

Sub-variables	Mean	Standard Deviation	Rank	Interpretation
Negative Emotion Expression	4.2206	0.87889	3	Average
Positive Emotion Expression	4.5058	1.30228	1	Average
Intensity of Emotion Expression	4.2543	1.27485	2	Average
EMOTIONAL EXPRESSION	4.3269	1.03559		Average

Legend: A Likert score of 7 is used to indicate an individual's performance on the project description, from low to high.

The scores in this study are consistent with other research on the emotional expression of Chinese college students. Studies by Qiu (2022), Song (2021) and Zhan (2022) all show that college students show a relatively consistent medium level of emotional expression. This consistency may be due to the common characteristics of college students, such as academic pressure, peer relationships, and social expectations, which collectively affect their emotional expression. It is worth noting that this scale has also been used to assess the emotional expression ability of Chinese middle school students and shows intermediate scores (Jia et al., 2022). This indicates that the emotional expression questionnaire has certain applicability and extensibility in Chinese students of different ages. The score of middle school students in emotional expression is similar to that of college students, which may reflect that the development track of emotional expression ability is relatively stable from middle school to university. However, with the enrichment of social experience and the improvement of individual maturity, the complexity and ability of emotional expression may be further developed in university stage (Zhan, 2022). In summary, the data in this study not only provide strong support for the emotional expression ability of Chinese college students, but also provide important insights for understanding the performance of this group on different dimensions of emotional expression. Whether compared with high school students or adults, the emotional expression ability of college students is at a critical stage of development (Ding et al., 2021), which provides an important reference basis for future education and mental health interventions.

Table 4
Peer Relationship of the Respondents (N=643)

Sub-variables	Mean	Standard Deviation	Rank	Interpretation
Unwelcome	2.4676	0.42296	3	*Agree*
Excluded	2.7204	0.54402	2	*Agree*
Lonely	2.8743	0.56172	1	*Agree*
PEER RELATIONSHIP	2.6874	0.41854		*Agree*

Legend: 1-1.49 (Strongly Disagree), 1.5-2.49(Disagree), 2.5-3.49 (Agree) and 3.5-4.0(Strongly Agree)

The data in Table 4 show that the average score of the subjects in the peer relationship scale is 2.69±0.42, which belongs to the medium level. The scale, compiled by Asher, consists of 16 questions to assess college students' performance in peer relationships (Jia et al., 2019). The higher the score on the scale, the worse the peer relationship, divided into three dimensions of unpopularity, exclusion and loneliness. In this study, the mean score of the unpopularity dimension was 2.47±0.43, the mean score of the exclusion dimension was 2.72±0.54, and the mean score of the loneliness dimension was 2.87±0.56. These scores are in the middle of the range, suggesting that while some college students experience challenges in peer relationships, overall, their social situation is not extreme. Intermediate scores reflect the complexity of social interactions among college students,

who both face pressure to build and maintain relationships and enjoy some level of social support (Boele et al., 2019).

Specifically, the slightly higher score on the loneliness dimension suggests that at the college level, many students may experience a stronger sense of loneliness (Liu et al., 2023). This phenomenon may be related to the transition from high school to college. At this stage, students need to adapt to a new environment and interpersonal relationship, while facing the dual pressure of study and future career, all of which may exacerbate loneliness. The score of exclusion dimension is also high, indicating that some students may feel social exclusion in peer interaction (Rose et al., 2018). This feeling of rejection can be due to factors such as personality differences, different interests or insufficient social skills. In addition, with the popularity of the Internet and social media, virtual socialization may also lead some students to feel excluded in real life (Yan et al., 2021). The low score of unpopularity indicates that most college students can still feel a certain acceptance and sense of belonging in the peer relationship. However, there are still some students who feel unwelcome from their peers for various reasons, which indicates that social pressure and interpersonal tension still exist among college students (Yao et al., 2021).

The medium level of these scores indicates that this scale has high representativeness and extensibility for the measurement of Chinese college students' peer relationship. Song (2021) pointed out that college students' peer relationships show a consistent medium level in different situations, indicating that students at this stage generally face challenges in dealing with peer relationships, but at the same time have certain coping abilities. By further studying these dimensions, educators and counselors can better understand college students' problems in peer relationships, thereby providing more effective support and interventions to help them build healthier relationships (Rose et al., 2018).

Table 5 shows the score difference of Empathy ability in demographic variables. As shown in the table, this study examined the score of Emotional Empathy ability of college students in different aspects of gender, age, grade level, major, university type, student origin, family income, whether they are the only child or not, and their parents' occupation. In terms of majors, data were analyzed from science, liberal arts, art, physical education and health (Song, 2021), and there were significant differences in Empathy scores among subjects in different majors. The scores of liberal arts subjects (364.22) were significantly higher than those of physical education and health subjects (266.05). There was significant difference in the score of cognitive Empathy ability scale among subjects of different majors, and the score of liberal arts subjects (372.55) was significantly higher than that of physical education and health subjects (282.19). The score of Empathy ability scale was significantly different among subjects of different majors. The score of liberal arts subjects (358.96) was significantly higher than that of physical education and health subjects (265.19). Liberal arts students are usually exposed to more content and skill development related to emotional understanding and interpersonal communication in their learning process. These courses put more emphasis on understanding emotions, which helps them achieve higher scores on the Empathy ability scale (Zeng, 2024).

Table 5
Difference of Responses on Empathy when Grouped According to Profile (N=643)

Variable	Cognitive empathy			Affective Empathy			IRI		
	H/U-value	p-value	I	H/U-value	p-value	I	H/U-value	p-value	I
Sex	47535.500	0.328	NS	45940.500	0.095	NS	49330.000	0.842	NS
Age	20693.500	0.248	NS	20967.500	0.329	NS	22301.500	0.908	NS
Grade Level	2.779	0.427	NS	0.742	0.863	NS	1.415	0.702	NS
Major	9.676	0.022	S	13.626	0.003	S	13.254	0.004	S
Type of University	44529.000	0.034	S	42488.000	0.003	S	42948.000	0.005	S
Where You Live	42239.500	0.000	S	45440.500	0.026	S	43360.000	0.002	S
Monthly Household Income	17.700	0.001	S	5.070	0.280	NS	11.097	0.025	S
Only Child or Not	29588.500	0.014	S	32255.000	0.288	NS	30830.000	0.071	NS
Father's Occupation	8.712	0.069	NS	3.506	0.477	NS	4.651	0.325	NS
Mother's Occupation	9.940	0.041	S	2.363	0.669	NS	6.269	0.180	NS

Liberal arts students often need to analyze, understand and interpret others' emotions and viewpoints, and such cognitive strategies and thinking patterns help them perform better in the cognitive Empathy dimension (Song, 2021). Empathy scale is more suitable for the emotional expression and understanding mode of liberal arts students, so it can more accurately reflect their Empathy ability level (Abdullah et al., 2020). In contrast, the training of physical education and health students is more focused on physical health and motor skills, which are different from emotional understanding training (Cao et al., 2021). In summary, the results of liberal arts students were significantly higher than those of physical education and health students in Empathy scale, which was caused by their differences in educational content, cognitive strategies and adaptability of measurement tools. This difference is helpful to understand the impact of different professional backgrounds on individual Empathy ability development (Guo et al., 2023).

In terms of university type, there were significant differences in empathy scores among different types of schools. Those in public schools (338.59) were significantly higher than those in private schools (296.59). There were significant differences in cognitive empathy scores among different types of school subjects. Those in public schools (334.53) were significantly higher than those in private schools (302.81). There were significant differences in Affective Empathy scores among different types of school subjects. Those in public schools (339.78) were significantly higher than those in private schools (294.78).

Public schools put more emphasis on the cultivation of social emotional and interpersonal skills in their curricula, which may promote public school students to achieve higher scores on the Empathy ability scale (Jia, et al., 2019). In contrast, private schools may be more focused on academic achievement or development in other areas, and less meticulous in training emotional expression and understanding than public schools (Song, 2021). Public and private schools may differ in terms of educational resources and support, which can affect student development. Public schools may provide more social-emotional education resources and support, which helps students perform better on the Empathy scale (Jin, 2022). Students in public and private schools have different social backgrounds and cultural experiences, and these factors may affect their differences in emotional expression and Empathy ability (Li, 2018). Public schools may have more students from different socioeconomic backgrounds, which affects their training and capacity development in emotional sharing and understanding (Qi et al., 2019). In general, public school students scored significantly higher on Empathy scale than private school students, due to the comprehensive influence of educational environment, resource support, student group characteristics or adaptability of measurement tools (Shi et al., 2021). These factors help to explain the potential impact of different school types on individual Empathy development.

In terms of student origin, there were significant differences in empathy scores among different student origin subjects (Song et al., 2020), and urban subjects (348.33) were significantly higher than rural subjects (302.33). There were significant differences in the scores of cognitive empathy among different subjects, and the scores of urban subjects (352.40) were significantly higher than those of rural subjects (299.28). There were significant differences in Affective Empathy scores among different student origin subjects. The urban student origin subjects (340.76) were significantly higher than the rural subjects (307.98). Urban areas usually have richer educational resources, including better teachers and more extracurricular activities, which contribute to the all-round development of students, including Empathy ability (Wang, 2021).

The relatively limited educational resources in rural schools will limit the development of Empathy. In rural areas, interpersonal relationships may be more homogeneous, students have smaller social circles, and may lack diverse social environments to exercise Emotional Empathy (Wei, 2021). Urban families are generally more focused on the well-rounded development of their children, and parents may have more time and resources to nurture their children's emotional intelligence and Empathy. The economic conditions of urban families are generally better, which can provide richer learning and social opportunities, which can help improve children's Emotional Empathy ability (Xie et al., 2022). The relatively poor economic conditions of rural families limit children's participation in various activities and opportunities that can help improve Empathy (He et al., 2018). Urban schools and communities generally provide more psychological counseling and emotional support

services to help students process and understand their own emotions and those of others (Zhang, 2020). Psychological and emotional support services in rural areas may be inadequate, and students may lack guidance and help in emotional education. Together, these factors may lead to the phenomenon that urban students score higher in Emotional Empathy ability than rural students (Yan et al., 2018).

In terms of monthly family income, there were significant differences in emotional empathy scores among the subjects with different monthly family income. The subjects whose family income was more than 50,000 (367.18) were significantly higher than those whose family income was 30,000-50,000 (262.850). Families with higher monthly household income are usually able to provide more educational resources, such as high-quality schools, after-school tutoring and abundant extracurricular activities, which help children develop in all aspects, including Empathy ability. Families with lower incomes may not be able to provide the same educational resources, and their children may have relatively fewer opportunities for learning and development, thus affecting their Empathy ability.

Parents in high-income families may have more time and energy to participate in their children's education and emotional development (Yang, 2023), and they may pay more attention to their children's emotional intelligence education and social skills. Parents from low-income families have less time and energy to devote to their children's emotional education because of their busy work and greater economic pressure. Low-income families struggle to afford these additional services, and children may lack appropriate emotional support and guidance (Wu et al., 2019). High-income families usually have a wider range of social and cultural capital, and children have more opportunities to contact different people and cultural backgrounds, thus enhancing their Empathy ability. High-income families usually lead a more stable life, and children grow up in a safer and supportive environment. This helps them develop healthy emotional and social skills (Zhou, 2023). Low-income families may face more economic and life pressures, and emotional and social development may be negatively affected. These factors may work together to result in that subjects with higher monthly family income score significantly higher in Empathy ability than those with lower monthly family income (Yu, 2021).

In terms of whether the only child or not, there were significant differences in cognitive empathy scores among different subjects. The only child's score (356.83) was significantly higher than that of the non-only child's score (312.75). The only child usually gets more attention and input from parents, who devote more time and resources to the education and training of the child, and such individualized attention helps the child develop a higher Empathy ability (Yu et al., 2021). In non-one-child families, parental attention and resources need to be divided among multiple children, and each child may receive relatively little individualized attention. One-child families have less economic pressure than families with many children, and are able to provide a better education and living environment that supports children's overall development, including emotional and social skills (Yan et al., 2018).

The heavy economic burden of non-one-child families may limit the investment in children's Empathy ability development (Bas-Sarmiento et al., 2020). Non-only children interact more within the family and have relatively limited social circle, which may limit the development of Empathy. Only children may be more adequate in terms of emotional and psychological support, and parents are able to pay more timely and effective attention to their emotional needs and mental health (Xiong, 2023). The emotional and psychological support of non-one-child families may be relatively insufficient due to the dispersion of resources, and the child's emotional and psychological needs may not be fully met. Only children tend to be more cultivated in terms of independence and self-confidence, and their parents encourage them to express their emotions and needs, which contributes to the development of strong Empathy ability (Xie et al., 2022). Non-only children may rely more on siblings, and the development of independence and self-expression may be relatively weak. One-child families may have more detailed and personalized education methods for their children, and parents are more inclined to cultivate the comprehensive quality of their children. Together, these factors may lead to a significantly higher Empathy score in only children than non-only children (Wu et al., 2020).

In terms of the occupation type of mothers, there is a significant difference in cognitive empathy scores of the subjects whose mothers are in different occupations. The scores of the subjects whose mothers are in public institutions (378.71) are significantly higher than those of the subjects whose mothers are in the service industry (291.32). A mother working in a public institution has a more stable working environment and a higher social status, which helps her create a stable and secure atmosphere in her family (Wu et al., 2019). Such an environment can promote a child's development, especially in terms of cognitive empathy, as children are more likely to feel cared for and understood in a stable environment (Wei, 2021). In contrast, a mother working in the service industry may face more job stress and instability, which may affect her performance at home and emotional support for her children. High stress and unstable work environments may make mothers less energetic at home, which can affect the emotional and cognitive development of their children (Shi, et al., 2021). A mother working in a public institution may have a higher educational background and vocational training, which enables her to better understand and teach her child the importance of cognitive empathy (Qiu, 2022). She may have more resources and abilities to help her child develop empathy.

Mothers in the service industry may lack relevant resources and time to cultivate their children's cognitive empathy due to the limitations of their work nature and educational background (Qiu, 2022). Mothers in public institutions usually enjoy better social welfare and support systems, such as paid leave, medical security, etc., which enables them to better balance between career and family, thus having more time and energy to focus on the growth of their children (Liu et al., 2019). Mothers in the service sector may lack such a support system, which can make it more difficult for them to balance work and family, affecting their children's cognitive empathy development. Mothers who work in public institutions play a more active role in their work, and this role model can subtly influence children to better develop in cognitive empathy (Qiu, 2022). Mothers in the service sector may not be able to play the same role model at home because of the nature of their work, which may affect their children's cognitive empathy development. In conclusion, the influence of mothers of different occupational types on children's cognitive empathy scores is multifaceted (Li, et al., 2022). Mothers in institutions are often able to provide a more stable and supportive family environment, have a higher educational background and a better social support system, thus contributing to the development of their children's cognitive empathy abilities (Jin, 2022). Mothers in the service sector may have a more limited impact in this regard due to work pressure and resource constraints. This difference reflects the profound impact of occupational type on family education and child development (Jia et al., 2022).

Gender had no significant effect on Empathy ability. In terms of score, gender had no statistically significant difference in all dimensions and total score of Empathy ability scale. It shows the homogeneity of Empathy ability between boys and girls.

Table 6

Difference of Responses on Emotional Expressive when Grouped According to Profile (N=643)

Variable	Negative Expression H/U-value	p-value	I	Positive Expression H/U-value	p-value	I	Intensity of emotional Expression H/U-value	p-value	I	BEQ H/U-value	p-value	I
Sex	48456.500	0.560	NS	46097.500	0.108	NS	43077.000	0.003	S	45635.500	0.071	NS
Age	21698.000	0.611	NS	21533.000	0.539	NS	19760.500	0.078	NS	20846.000	0.291	NS
Grade Level	1.597	0.660	NS	1.172	0.760	NS	0.613	0.893	NS	0.613	0.893	NS
Major	1.559	0.669	NS	8.120	0.044	S	4.655	0.199	NS	4.395	0.222	NS
Type of University	47608.000	0.431	NS	43748.500	0.013	S	44994.500	0.054	NS	45202.000	0.067	NS
Where You Live	48119.000	0.282	NS	41759.000	0.000	S	42522.500	0.000	S	42487.500	0.000	S
Monthly Household Income	6.102	0.192	NS	18.242	0.001	S	9.885	0.042	S	11.900	0.018	S
Only Child or Not	32948.500	0.480	NS	32682.500	0.399	NS	32709.500	0.407	NS	32581.000	0.372	NS
Father's Occupation	12.948	0.012	S	6.063	0.194	NS	3.575	0.467	NS	6.343	0.175	NS
Mother's Occupation	6.712	0.152	NS	6.465	0.167	NS	5.524	0.238	NS	7.020	0.135	NS

Table 6 shows the differences in the scores of the expressive ability of the subjects in different demographic variables. In terms of gender, there were significant differences in the scores of emotional expression intensity between different genders. The score of female subjects (339.53) was significantly higher than that of male subjects (296.18). Studies show that girls are more likely to use expression to relieve stress and mood swings when dealing with emotions. They may be more likely to release and express their emotions through verbal and non-verbal means, while boys may be more inclined to internalize emotions (Abdullah et al., 2020). Girls are generally more sensitive and susceptible to emotional fluctuations than boys, and they are more able to express their inner emotions because they may be more inclined to deal with stress and dissatisfaction by expressing their emotions.

There are differences in communication styles between men and women. Girls generally express their feelings through language and have higher language expression ability and a richer emotional vocabulary, which enables them to express their emotions more strongly and subtly (Adedeji et al., 2022). They may use more adjectives and details to describe their emotions, which is more evident in measures of expressive intensity, whereas boys tend to express their emotions in behavioral or other non-verbal ways (Bennik et al., 2019). Girls have a wider social support network, making them more likely to express their emotions for emotional support and empathy. Girls generally show stronger Empathy ability, they are more likely to understand and feel the emotions of others, and therefore are more likely to express their own emotions with higher intensity (Ciobotaru et al., 2024). This Emotional Empathy enables them to be more engaged and detailed in their emotional communication (Boele et al., 2019).

In terms of majors, the data were analyzed from science majors, liberal arts majors, art majors, physical education majors and health majors (Li et al., 2021), and there were significant differences in the scores of subjects in the positive expression ability scale. The scores of subjects in liberal arts majors (335.33) were significantly higher than those in arts majors (282.86). Liberal arts courses often emphasize verbal expression, writing, debate, and interpersonal communication, all of which directly contribute to the development of positive expression skills. Students majoring in liberal arts have more opportunities to practice and demonstrate their expressive skills in their daily studies, which may lead to higher scores on the positive expressive Skills scale (Li, 2018). Although art majors also involve expression, they focus more on visual, performance, and creative expression (such as painting, music, dance, etc.), and these forms of expression do not necessarily directly improve oral or written expression skills (Liu et al., 2019). In addition, art students may be more inclined to introversion because their creative process is often individual rather than group interaction.

Liberal arts students may be more socially inclined and extroverted, which helps them excel in positive expression skills (Long, 2023). They are usually more interested in relationships and social activities, and these interests also promote their expressive skills. Art students tend to be more introspective and work independently, which may limit their ability to express themselves positively in certain situations (Shi et al., 2021). Although they may be strong in creative expression, they may be relatively weak in verbal communication (Sun, 2021). Liberal arts majors typically involve a lot of discussion, presentation, and essay writing, all of which require frequent oral and written communication. This kind of teaching and assessment can effectively improve students' ability of positive expression. The teaching methods of art majors are more focused on the creation of works and technical training, and there are relatively few opportunities for oral or written expression. Therefore, art students may score lower on the positive expression scale (Taylor et al., 2018). Liberal arts students may be more likely to be expected and encouraged to express their views and ideas due to the needs and environment of their major, thus performing better in positive expression. The environment of art students may place more emphasis on individuality and creativity, which, while helpful in artistic creation, may lack sufficient training and practice in positive expression (Xiong, 2023).

To sum up, students majoring in liberal arts score significantly higher on the scale of positive expression ability than students majoring in arts, which is due to the emphasis on language and interpersonal communication, social personality characteristics, teaching and assessment methods and other factors. Art majors,

on the other hand, focus more on creative expression and technical training, and have fewer training and opportunities in verbal communication and positive expression (Boele et al., 2019).

In terms of school nature, there are significant differences in the scores of emotional expression intensity of subjects in different schools (Yan, 2021), and the scores of subjects in public schools (336.54) are significantly higher than those in private schools (299.74). Public schools typically have larger numbers of students and greater social diversity, which results in students growing up in a more diverse and open environment (Yang, 2023). Such an environment may encourage students to express their emotions and feelings more freely, thus increasing the intensity of their emotional expression. Private schools are more focused on discipline and norms, which may create certain restrictions on students' emotional expression (Yao et al., 2021). Stricter school rules and higher standards of behavior may lead students to be more cautious in expressing emotions, thus reducing the intensity of emotional expression. Students come from a variety of different socioeconomic backgrounds, and this diversity may make it easier for students to find support and understanding in school, thereby enhancing the intensity of their emotional expression (Zhu et al., 2019). Students may come from more similar socioeconomic backgrounds, which can lead to a more homogenous environment in which students may feel greater social pressure to inhibit their emotional expression.

Although resources may be more limited, public schools often have dedicated counselors and mental health support systems to help students deal with emotional issues (Zhu et al., 2021). These resources can encourage students to express and manage their emotions. While private schools generally have more resources, these resources may be more focused on academics and codes of conduct rather than emotional expression and mental health support (Yao et al., 2021). Students lack appropriate channels to express and manage their emotions, resulting in lower intensity of emotional expression (Zhu et al., 2019). In summary, public school students scored significantly higher on the intensity of emotional expression than private school students, which may be due to factors such as the more diverse and inclusive environment of public schools, a more relaxed approach to education, a broader socioeconomic background, and a more focused allocation of resources for mental health support. In private schools, students may be more restricted in emotional expression due to stricter school rules, higher behavioral expectations, homogenized socioeconomic background and relatively academically focused resource allocation.

In terms of school students, there were significant differences in positive expression ability, intensity of emotional expression and total score of emotional expression among different students. Urban subjects scored significantly higher in positive expression ability (354.15) than private schools (297.98). The score of urban subjects (351.37) in expression intensity was significantly higher than that of private schools (300.05), and the score of urban subjects (351.50) in total expression ability was significantly higher than that of private schools (299.96). Urban students may receive more education and guidance in emotional recognition, expression, and management. Urban families usually have higher socioeconomic status, which may provide children with richer opportunities for emotional communication and expression (Zhang, 2020). Urban families may be more inclined to encourage their children to express their emotions, while rural families may pay less attention to or encourage emotional expression due to traditional cultural or economic pressures. Cultural and social norms may differ between urban and rural areas. Urban areas are often more diverse, accepting and encouraging different forms of emotional expression. Rural areas may be more conservative, less accepting of emotional expression, and may be more inclined to repress emotional expression (Fang et al., 2020).

In terms of monthly family income, subjects with different monthly family income had significant differences in positive expression ability, intensity of emotional expression and total score of emotional expression. Those with a monthly family income of 50,000 yuan (390.29) had significantly higher positive expression ability than those with a monthly family income of 30,000 to 50,000 yuan (191.90). Those with a monthly family income of 10,000 yuan to 30,000 yuan (367.77) scored significantly higher in expression intensity than those with a monthly family income of 30,000 yuan to 50,000 yuan (239.15); those with a monthly family income of 50,000 yuan (362.54) scored significantly higher in total expression ability than those with a

monthly family income of 30,000 yuan to 50,000 yuan (193.45). These families are usually able to provide more educational resources and opportunities, such as quality schools, extracurricular tutoring, and abundant extracurricular activities (Zhu, 2023). These resources can help children better develop their expressive skills and emotional management skills. In addition, parents in high-income families may attach more importance to education and be able to provide more support and guidance to their children (Li, 2018).

Middle-income families Although these families can provide certain educational resources, but compared to high-income families, the resources may be relatively limited. In addition, these families may face certain economic pressures, affecting the family atmosphere and children's emotional expression. Parents in high-income families may have more time and energy to interact with their children and build a good parent-child relationship (Yang, 2021). This relationship promotes positive expression and emotional management. In conclusion, different family monthly income has a significant impact on children's positive expression ability, emotional expression intensity, and total emotional expression score. Higher income families can provide more educational resources, a good family environment, adequate mental health support, and abundant social opportunities, which can promote the development of children in these areas (Yang, 2023). Although middle-income families can also provide certain resources, relatively limited resources and possible economic pressure affect the development of children in expression and emotional management.

In terms of father's occupation, there is a significant difference in negative expression ability between father's occupation subjects. The score of father's enterprise subjects (373.46) is significantly higher than that of father's service subjects (290.86). Fathers who work in enterprises usually face higher occupational pressure and competition and are more likely to show negative emotions, which are passed on to their children in the family and make their children more inclined to show negative expression skills (Liang et al., 2018). Fathers working in the service industry, due to their better emotional management and stable family environment, help reduce their children's negative expression ability (Yuan et al., 2023). Together, these factors lead to significant differences in negative expression abilities among children of different working fathers.

Table 7
Difference of Responses on Peer Relationship when grouped according to profile (n=643)

Variable	Unwelcome H/U-value	p-value	I	Excluded H/U-value	p-value	I	Lonely H/U-value	p-value	I	SPRI H/U-value	p-value	I
Sex	49398.000	0.864	NS	47514.500	0.322	NS	45966.500	0.096	NS	46787.500	0.194	NS
Age	21640.500	0.585	NS	21288.500	0.439	NS	21776.000	0.648	NS	21395.500	0.485	NS
Grade Level	0.284	0.963	NS	5.603	0.133	NS	5.931	0.115	NS	4.267	0.234	NS
Major	0.869	0.833	NS	6.195	0.102	NS	4.908	0.179	NS	5.699	0.127	NS
Type of University	49226.000	0.938	NS	47506.500	0.407	NS	48747.500	0.774	NS	48553.500	0.712	NS
Where You Live	49527.500	0.642	NS	50405.500	0.933	NS	46085.500	0.051	NS	47443.000	0.175	NS
Monthly Household Income	5.788	0.216	NS	5.913	0.206	NS	10.888	0.028	S	12.132	0.016	S
Only Child or Not	29123.000	0.007	NS	30447.000	0.044	S	30067.500	0.027	S	28784.500	0.004	S
Father's Occupation	8.204	0.084	NS	4.207	0.379	NS	6.221	0.183	NS	5.671	0.225	NS
Mother's Occupation	5.881	0.208	NS	4.340	0.362	NS	5.177	0.270	NS	5.707	0.222	NS

Table 7 shows the differences in scores of different demographic variables on the peer relationship scale. In terms of monthly family income, subjects with different monthly family income have significant differences in the scores of student peer relationship scale and loneliness dimension. Those with a monthly family income of 30,000 to 50,000 yuan (439.20) have significantly higher scores on peer relationship scale than those with a monthly family income of 5,000 yuan (299.01). Subjects with a monthly family income of more than 50,000 yuan scored significantly higher on the loneliness dimension scale (411.13) than those with a monthly family income of less than 5,000 yuan (297.56).

On the other hand, those with a monthly household income of more than 50,000 yuan scored significantly higher on the loneliness scale (411.13) than those with a monthly household income of less than 5,000 yuan (297.56). The phenomenon is linked to the fact that parents in high-income families often have busy jobs and spend less time with their children, leading to children feeling emotionally lonely despite being more materially well-off. In addition, children of higher-income families may face greater academic and social pressures, increasing the risk of loneliness (William, 2019). Taken together, family economic status has a complex impact on students' peer relationships and loneliness (Chen, 2021). Children from middle-income families perform better in peer relationships, while children from high-income families may face higher levels of loneliness despite material advantages (Guo, et al., 2023). This suggests that when we pay attention to students' mental health, we should consider the multiple effects of economic factors and provide more comprehensive support.

In the peer relationship scale of college students, as for the only child, there are significant differences in the scores of the only child in the peer relationship scale, exclusion dimension and loneliness dimension. The exclusion dimension score of the only child (329.56) is significantly higher than that of the non-only child (293.53). The loneliness dimension score of only children (330.31) was significantly higher than that of non-only children (290.72), and the peer relationship scale score of only children (332.84) was significantly higher than that of non-only children (281.22). Researchers believe that due to the lack of brothers and sisters in the growing up process, only children have fewer opportunities to interact with peers, so they may be less experienced and skilled in interpersonal relationships and conflict resolution, and are prone to feel excluded in peer relationships (Zhao, 2022). Only children usually receive more attention and protection in the family, which makes them feel more ill-adapted and sensitive in the face of competition and rejection in peer relationships. On the contrary, non-only children learn sharing, cooperation, and conflict coping skills earlier in their interactions with siblings, which helps them better integrate and adapt in peer relationships (Yuan et al., 2023).

Only children grow up accustomed to greater attention and resource allocation in the family, which leads them to exhibit self-centered behaviors when dealing with their peers, thus increasing the likelihood of exclusion (Zeng, 2024). In addition, only children rely more on their parents and other adults as primary social objects, whereas only children participate in peer social activities earlier and more frequently due to interactions with siblings, which further helps them to integrate and adapt in peer relationships. Family education and cultural background also have an impact on the performance of only children and non-only children in peer relationships (Yang, 2023). One-child families may pay more attention to protecting and nurturing their children's independence, while non-one-child families may pay more attention to cooperation and coordination between siblings. In this way, non-only-children may exhibit better adaptability and lower feelings of rejection in peer relationships (Wang et al., 2024).

On the contrary, non-only children learn how to deal with interpersonal relationships and resolve conflicts earlier in their interactions with siblings (Yang, 2023). This experience helps them to form and maintain friendships more easily and to feel less lonely in a college environment. Non-one-child families put more emphasis on cooperation and interaction between siblings, which helps to develop stronger social skills. Non-only children may experience more conflicts and competition during their growth, which helps them develop stronger psychological resilience and coping strategies (Wang et al., 2020). In the face of loneliness, non-only children are more able to actively seek solutions, while only children may be more likely to feel helpless.

In addition, non-only children often have siblings as an important source of social support, and they can rely on family members for emotional support even at the college level. Lacking this support network, only children can feel even more alone in the face of hardship. The one-child family may be more protective and attentive to the child, making the child less autonomous and independent in dealing with interpersonal relationships. These factors work together to make only children more likely to feel lonely during their college years.

Table 8

Correlation of Empathy, Emotional Expression and Peer Relationship (n=643)

VARIABLES		EE			PR		
		r_s	p-value	I	r_s	p-value	I
E	CE	.607**	0.000	S	-0.074	0.062	S
	AE	.549**	0.000	S	-.227**	0.000	S
	IRI	.643**	0.000	S	-.176**	0.000	S
EE	NEE	.176**	0.000	S			
	PEE	.127**	0.001	S			
	IEE	.174**	0.000	S			
	BEQ	.156**	0.000	S			

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

Table 8 shows the correlation between empathy (cognitive Empathy, Affective Empathy) scales and total score, emotional expression ability (negative expression, positive expression, expression intensity) scales, total score and peer relationship (unpopularity, loneliness, rejection) scales and total score. In empathy scale, it can be found that there is a significant positive correlation between the empathy subscales. This indicates that empathy scale has a good coefficient of internal consistency. To some extent, this indicates that it is meaningful to select the Interpersonal Response Index (IRI-C) scale to measure the subjects in this study. The relationship between the subscales accords with the theoretical basis of the Interpersonal Response Index (IRI-C) scale. It can be found in the scale of emotional expression ability that there is a significant positive correlation between the subscales of emotional expression ability. To some extent, this indicates that in this study, it is meaningful to select the Berkeley Expressive Ability Questionnaire (BEQ) to measure the subjects. The relationship between the subscales is consistent with the theoretical basis of the Berkeley Expressive Ability Questionnaire (BEQ) scale (exploratory factor analysis/confirmatory factor analysis). In the peer relationship scale, it can be found that there is a significant positive correlation between the subscales of peer relationship. This indicates to a certain extent that it is meaningful for the peer relationship scale to measure the selected students (the selected subjects) in this study.

There was a significant positive correlation between the score of empathy scale and the score of emotion expression scale and the score of all dimensions of the scale. People with a strong ability to empathize also have a strong ability to express emotions. This suggests that people who are able to understand and feel the emotions of others are also more effective and productive in expressing their own emotions (Liu et al., 2021). The higher the cognitive empathy score, the ability to understand the emotions of others, the more effectively these people were able to express their emotions. Because they are better able to understand emotions, this understanding also enables them to express themselves more clearly and accurately (Wu et al., 2019). The higher the empathy score, the ability to experience the emotions of others, the better these people were able to express their own emotions. This is because people who experience other people's emotions intensely feel them more deeply and therefore express their own emotions more authentically and naturally.

Negative expression and Emotional empathy: people who can understand and feel the negative emotions of others are more likely to express their own negative emotions clearly. Instead of suppressing or hiding negative emotions, they can release and express them effectively (Zhou et al., 2019). Positive expression and Emotional empathy: people who can understand and feel the positive emotions of others are more inclined to express their own positive emotions clearly. They are able to share their joy and happiness more effectively, making them more pleasant and positive in social interactions (An et al., 2018). The intensity of emotional expression is significantly positively correlated with empathy ability, which means that people with strong empathy ability can not only express emotions, but also express emotions in a more intense and powerful way. In conclusion, the positive correlation between empathy and emotional expression indicates that empathy is not only related to the understanding and experience of others' emotions, but also closely related to how individuals express their own emotions. This connection reflects the comprehensive ability of emotional processing, in which empathy and expression are complementary aspects.

Data show that individuals with a strong empathy ability can consider problems from the perspective of others, enhance the intimate connection between individuals and others, and enable individuals to obtain more support (Song, 2021). This not only helps individuals to effectively carry out negative expression, but also helps individuals to experience interpersonal changes brought about by positive emotion expression (Yang, 2023). Therefore, paying attention to the relationship between empathy and emotional expression ability is a step of great significance to promote this study. Researchers believe that this is because empathy can enhance mutual understanding and support among group members, enhance the cohesion within the group, and establish benign interpersonal interaction, which will further improve the positive and negative perception of the self, meet the needs of the relationship, and facilitate individuals to share their positive and negative emotional experience with others. Based on this, researchers believe that Empathy triggers both positive and negative emotional expression of individuals (Iman et al., 2019).

There was a significant negative correlation between empathy scale score and peer relationship score, exclusion scale score and loneliness scale score. People with strong empathy ability scored lower in peer relationship, indicating that individuals with strong empathy ability also had good peer relationship. For individuals in complex social networks, a high Empathy ability will be more conducive to adapting to social life and coping with interpersonal communication, so as to better get along with peers (Song, 2021). This suggests that people who are able to understand and feel the emotions of others are more successful in their interactions with peers. In cognitive Empathy and peer relationships, the higher the score of cognitive Empathy (the ability to understand the emotions of others), the lower the score of these people in peer relationships. Because they are better able to understand the emotions and needs of others, this makes them more likely to be accepted and welcomed by their peers and less likely to be excluded and lonely (Wu et al., 2020). In emotional Empathy and peer relationships, the higher the score of emotional Empathy (the ability to experience the emotions of others), the lower the score of these people in peer relationships. This is because they can strongly experience and respond to the emotions of others, so that they appear more sincere and caring in peer relationships, and thus better promote the relationship. This is because individuals' empathy ability makes them more warm and considerate in social interactions, so that they are more likely to win the favor of peers and thus be welcomed by peers (Zhang, 2020).

The two dimensions of cognitive empathy and affective empathy are negatively correlated with the dimensions of loneliness and exclusion in peer relationships (Xu et al., 2018). This meant that when students scored higher on their ability to empathize, they felt less loneliness and rejection in their peer relationships. Cognitive empathy refers to an individual's ability to understand the emotions and mental states of others, which helps college students better understand and respond to the needs and feelings of their peers. Students with stronger cognitive empathy ability are able to more acutely detect the emotional changes of their peers and respond appropriately, thus reducing conflicts and estrangement caused by misunderstanding and miscommunication. Therefore, the higher the cognitive empathy, the smoother the students' social interactions and the lower the feelings of loneliness and rejection they felt. Emotional empathy is an individual's ability to empathize with the emotions of others. Students with strong emotional empathy are more likely to empathize emotionally with their peers, thus establishing deeper emotional connections in social interactions. This emotional resonance not only enhances the closeness between peers, but also reduces feelings of social isolation and rejection (Jia et al., 2019). Thus, the higher the emotional empathy, the more support and recognition students receive in their peer relationships, and the experience of loneliness and exclusion decreases accordingly.

Empathy, especially cognitive empathy and affective empathy, can be effective in alleviating these negative experiences. Research has found that college students with strong empathy are more likely to form positive peer relationships, and they are not only better able to understand the emotions and needs of others, but are also able to stay emotionally in sync with their peers, thereby reducing misunderstandings and conflicts and increasing feelings of support and belonging in social interactions. The higher the peer relationship score, the worse the relationship quality, which means that the individual feels more isolation and rejection in social interaction (Chen, 2021). The enhancement of empathy ability can effectively reduce such negative experiences, thus

improving the quality of peer relationships. Therefore, cultivating college students' empathy, especially cognitive empathy and affective empathy, is crucial to improving their peer relationships. By improving the ability to empathize, college students can better cope with social challenges, reduce loneliness and rejection, and ultimately form healthier and harmonious interpersonal relationships (Qi et al., 2019). The conclusion of this study indicates that empathy is not only an important indicator of emotional development, but also a key factor to improve the quality of college students' peer relationships. Education and psychological counseling should pay attention to the cultivation of college students' empathy ability, so as to promote them to obtain more support and understanding in social interaction and reduce the generation of negative emotions (Hong, 2023).

In Chinese college students, there is a significant correlation between emotional expression ability and peer relationship quality. Specifically, the total score of the emotional expression ability scale, as well as the score of the negative emotion expression, positive emotion expression and expression intensity subscale, were significantly positively correlated with the unpopularity dimension score of the peer relationship scale. At the same time, these emotional expression abilities were negatively correlated with scores of loneliness and exclusion in peer relationships. First of all, the positive correlation between emotional expression ability and unpopularity dimension indicates that college students with stronger emotional expression ability tend to be less popular among their peers. This seemingly contradictory phenomenon actually reflects the complexity of emotional expression (Yang, 2023). Among college students, high emotional expression ability may lead to overly strong or frequent emotional expression, especially when such expression does not conform to social norms or other people's expectations, which is likely to cause disgust among peers (Li, 2018). For example, excessive expressions of negative emotions, such as frequent expressions of anger or frustration, may make peers feel uncomfortable and stressed, which in turn causes them to judge the individual negatively. Similarly, excessive expressions of positive emotions, such as excessive displays of joy or excitement in inopportune situations, may also be seen as unsociable, which can lead to alienation from others. Although individuals with high expressive intensity have clear emotional expression, failure to take into account the ability of others to receive information and the appropriateness of the situation may also lead to social unpopularity (Zhu, 2023).

Secondly, the negative correlation between emotional expression ability and the dimensions of loneliness and rejection indicates that college students with strong emotional expression ability tend to feel less loneliness and rejection in peer relationships, which is consistent with the role of emotional expression as a social lubricant (Li, 2018). Good emotional expression ability enables individuals to convey their emotional state more accurately, and is easier to be understood and accepted by others. For the expression of negative emotions, although the expression itself may be unpopular, if it can be properly expressed and obtained the understanding and support of peers, such expression can actually help alleviate the individual's sense of loneliness and rejection (Yang, 2023). Moderate expression of emotional intensity can help individuals maintain a balanced relationship in social interaction, so that they will not be ignored or rejected by their peers due to excessive or insufficient expression of emotion. This negative correlation was particularly significant for the expression of positive emotions. Positive emotion expression can often enhance the emotional connection between peers and promote the establishment of social support system. When college students express positive emotions, they are prone to form a positive feedback loop, that is, their positive emotions are easy to infect their peers, thus driving a better interactive atmosphere in the whole social circle (Zhou, 2023). This atmosphere helps to reduce the loneliness individuals feel in their peer relationships, promote acceptance within the group, and reduce social exclusion.

However, it must be noted that the positive correlation between emotional expression ability and unpopularity also suggests a double-edged sword effect of emotional expression (Zhu, 2021). Although the ability to express emotions plays a positive role in improving loneliness and reducing feelings of rejection, if the way or intensity of emotional expression is not appropriate, it may increase an individual's unpopularity in peer relationships (Taylor et al., 2018). This complexity suggests that emotional expression is not just about "expressing emotions", but also a part of social skills, which needs to take into account the timing and mode of expression and the emotional state of the recipient (Li, 2018). In short, the influence of emotional expression ability on peer relationship is multi-dimensional. A strong ability to express emotions can help alleviate feelings

of loneliness and rejection, but can lead to undesirability if expressed in an inappropriate way. The results of this study show that in the education and psychological counseling of college students, students' emotional expression ability should not only be focused on improving their expression ability, but also on how to appropriately express their emotions in different situations and how to understand and respond to others' emotional expression, so as to promote a healthier and harmonious peer relationship (Hooley et al., 2019). This comprehensive perspective provides a more comprehensive guidance framework for educators and counselors to enhance the emotional and social abilities of college students.

The calculation of correlation relationship can measure the close and distant relationship between variables, but in order to further explore the influence of empathy and emotional expression on peer relationship, we try to explore the prediction relationship. In the subsequent data analysis, we explored the regression relationship between empathy and emotion expression, empathy and empathy and emotion expression on peer relationship.

Table 9
Regression Analysis (N=643)

Coefficients[a]					
	Unstandardized Coefficients		Standardized Coefficients		
Model	B	Std. Error	Beta	t	Sig.
1 (Constant)	2.612	0.086		30.277	0.000
Cognitive Empathy	-0.024	0.036	-0.041	-0.671	0.502
Affective Empathy	-0.127	0.035	-0.214	-3.574	0.000
Negative Emotional Expression	-0.001	0.035	-0.001	-0.017	0.986
Intensity of Emotional Expression	-0.181	0.039	-0.551	-4.668	0.000
BEQ	0.298	0.061	0.737	4.901	0.000

Dependent Variable: STUDENT PEER RELATIONSHIP
Excluded Variables (not good predictors of student Peer Relationship): IRI Total and Positive Emotion

Table 9 explores the negative regression effect of affective empathy on peer relationship and finds that affective empathy has a statistically significant effect on peer relationship prediction equation (t=-3.574, p < 0.001). The negative regression effect of expression intensity on peer relationship was explored, and it was found that expression intensity had a statistically significant effect on peer relationship prediction equation (t=-4.668 p < 0.001). The positive regression effect of emotion expression on peer relationship was explored, and it was found that emotion expression ability had a statistically significant effect on peer relationship prediction equation (t=0.737, p < 0.001).

The negative regressive effect of affective empathy on peer relationship means that the higher the level of affective empathy, the more problems or negative effects an individual may encounter in peer relationship. People with high levels of affective empathy tend to focus too much on the feelings and needs of others, often ignoring their own feelings and needs in order to maintain harmonious relationships. This self-sacrificing behavior may cause them to feel tired and stressed in their peer relationships, thus affecting the quality of the relationship (Chang, 2023). People with high levels of empathy are more likely to be affected by the emotions of others, especially negative emotions. This emotional infection may cause them to feel anxious and stressed in the face of other people's stress or emotional problems, which in turn affects the stability and quality of peer relationships (Erika et al., 2020). People with high levels of Affective Empathy may exhibit overly dependent and clinging behaviors in relationships, expecting understanding and responses from the other person. This behavior makes the other person feel stressed and burdened, which leads to tension and conflict in the relationship. People with high levels of affective empathy tend to pay too much attention to the feedback and evaluation of others and ignore their own feelings and judgments when dealing with peer relationships. This tendency may cause them to lose their sense of self in the relationship, which in turn affects the healthy development of the relationship. While empathy helps to understand the emotions of others, excessive empathy can cause individuals to have difficulty asserting their positions and opinions during conflict, and thus to be unable to solve problems effectively (Eloisa et al., 2019). This lack of ability to manage conflict effectively can lead to increased dissatisfaction and friction in the relationship. In summary, the negative regression effect of

affective empathy on peer relationship can be explained through the above aspects. While empathy is positive in many ways, excessive empathy can lead to a range of negative effects that negatively affect peer relationships. Effective affective empathy requires finding a balance between concern for others and self-preservation in order to maintain healthy and harmonious peer relationships (Liu et al., 2021).

People with high intensity of expression show a tendency to overexpress when interacting with their peers, and if they are too strong or frequent in emotional expression, this behavior may make their peers feel uncomfortable or stressed, resulting in increased tension and conflict in the relationship (Liu et al., 2021). People with high expression intensity may be more likely to react emotionally when faced with conflict or problems. This emotional response can complicate or amplify the problem, which in turn affects the stability and quality of the relationship. Peers may find it difficult to cope with these strong emotional responses, leading to a deterioration of the relationship (Eloisa et al., 2019). People with high expressive intensity may take up more "emotional space" in social interactions, which can lead to peers feeling that their emotions and opinions are being ignored or suppressed. This unbalanced way of interacting can weaken the intimacy and trust of a peer relationship (Zhou et al., 2019). People with high expression intensity may have higher expectations of emotional response to their peers in social interactions, which may increase the psychological burden of their peers. When partners fail to meet these expectations, they may feel stressed and upset, which affects the quality of the relationship. People with high expressive intensity may need more support and attention emotionally, which can cause peers to feel emotionally drained. After long-term emotional commitment, partners may feel tired and dissatisfied, thus affecting the stability of the relationship (Chang, 2023). In summary, the negative regression effect of expression intensity on peer relationships suggests that high expression intensity may have a negative impact on peer relationships through a variety of ways. In order to maintain a healthy and harmonious peer relationship, individuals need to find a balance in emotional expression and interaction to avoid the negative effects of excessive expression. Effective emotional management and communication strategies can help promote healthier peer relationships.

It is found that expression intensity and emotion expression ability have different effects on peer relationship, and both are statistically significant. In terms of expression intensity, the results showed a significant negative regression effect on the peer relationship (t=-4.668, p < 0.001). This means that when an individual's intensity of expression is too high, they are likely to experience more problems in peer relationships. This may be because excessive emotional expression can make peers feel uncomfortable or stressed, which can lead to increased tension and conflict in the relationship.

On the other hand, emotional expression ability had a significant positive regression effect on peer relationship (t=0.737, p < 0.001). This suggests that higher emotional expression promotes better peer relationships. People with strong emotional expression ability are able to communicate their emotions and needs more effectively, promote understanding and communication between their peers, and thus enhance the stability and affinity of the relationship (Zhu et al., 2021). Taken together, although both expression intensity and emotional expression ability involve emotional expression, their effects on peer relationships are different. High expression intensity may have negative effects, while high emotional expression ability can help improve peer relationships. This suggests that moderate and effective emotional expression is key in peer relationships. Finding the balance between expressing emotions and needs can reduce the negative effects caused by excessive expression, and play the positive role of high emotional expression ability to promote healthy and harmonious peer relationships.

First of all, the data results of this study are consistent with the results of previous studies, and in line with the relevant theoretical basis. It can be seen from the data that emotional expression ability as a mediating variable can affect the positive prediction effect of emotional empathy on peer relationship. In the future application process of the theory, for individuals with low empathy, emotional expression can be regarded as an intervention focus, and the positive influence of empathy on peer relationship can be achieved by improving the positive emotional expression of individuals. For individuals to form a good peer relationship, the establishment

of adaptive interpersonal relationship to contribute.

Second, by comparing Table 8 and Table 9, it can be found that it is consistent with previous studies and related theories. Similarly, some researchers (Zhao, 2020) have found that emotional expression plays an intermediary role between emotional empathy and peer relationship. In other words, when college students experience negative events and fail to produce good emotional empathy, their negative expressions will intensify, which further affects the establishment of good peer relationships (Zhang, 2019). Specifically, the level of empathy may have a negative impact on an individual's peer relationships, resulting in difficulties in emotional expression. College students with poor empathy may tend to use negative emotional expression, a maladaptive coping strategy, to deal with their own negative emotions and become trapped in negative emotional cycles (Eloisa et al., 2019), resulting in peer relationships suffering. In social situations, individual college students need to interact and communicate with others. However, the size of an individual's empathic capacity affects individuals who may have difficulty getting rid of negative emotions due to inappropriate emotional expression, leading them to experience more anxiety and fear during social interactions, affecting interpersonal relationships (Zhang, 2019). They may worry that their performance will be judged or laughed at by others, or that they may be hurt or rejected. These emotions and behaviors can further affect their social behavior and performance, making them more withdrawn, withdrawn, or difficult to form close relationships (Yao, 2021). Therefore, expression ability is the bridge between empathy and peer relationship. Appropriate expression ability can enhance peer relationship, while inappropriate expression ability can affect peer relationship. Understanding this mediating role can help us better understand the mechanism by which emotional empathy affects individual peer relationships, and provide targeted strategies and methods for prevention and intervention work (Xiong, 2023). For example, by helping individuals increase empathy, enhance emotional expression regulation and skills, help college students promote peer relationships and improve mental health and quality of life.

Third, according to Table 8 and Table 9, when emotional expression is added to the prediction formula of emotional empathy for peer relationship, it plays a bridging role in this process, and the negative prediction effect of emotional empathy on peer relationship is reduced, indicating that although people with strong emotional expression ability can express their emotions clearly, excessive or improper expression may lead to the deterioration of peer relationship. This was reflected in the increase of peer relationship score (that is, the deterioration of relationship), but this prediction was still statistically significant, indicating that in the prediction process of emotional empathy on peer relationship, there are other mediating variables besides emotional expression that have an impact on this process (Wu et al., 2020). Although empathy itself helps to understand and accept others, through the channel of emotional expression, if the expression is not effectively controlled, it may not be conducive to the establishment of good peer relationships (Taylor et al., 2018). Therefore, the interaction between empathy, emotional expression, and peer relationship reveals that the appropriateness and effectiveness of expression are crucial in developing emotional competence.

Based on the analysis of the above data results, it is not difficult to find that as an emotional response, an individual's emotional empathy can understand and feel the emotional state of others. When a person has a high level of empathy, he is more able to communicate and share his emotions through emotional expression. The negative significant impact means that the higher the level of empathy, the more frequent and open the emotional expression of an individual. Empathy helps to build and maintain good peer relationships because it enables people to understand and respond to the emotional needs of others, thus promoting trust and intimacy. The negative significant effect means that the higher the level of empathy, the better the quality of an individual's peer relationship. Although emotional expression can promote relationship building to a certain extent, the negative significant effect may indicate that excessive or inappropriate emotional expression may have a negative impact on peer relationships (Schroeder et al., 2020). For example, too frequent or excessive expression of emotions may cause peers to feel stressed or uncomfortable, which can negatively impact the relationship. Empathy can promote emotional expression, that is, people with high levels of empathy are more willing and good at expressing their emotions. Independent variable empathy directly promotes the quality of dependent variable peer relationship. People with high empathy are more likely to establish and maintain good peer

relationship. However, emotional expression has a negative impact on the peer relationship, which is because the way or frequency of emotional expression is inappropriate, and thus damages the peer relationship to a certain extent (Rogers et al., 2020). Therefore, it can be considered that empathy has a certain indirect negative impact on peer relationships by promoting emotional expression, but on the whole, the direct positive impact of empathy on peer relationships may be more significant.

Table 10
Proposed psychological Intervention Plan for Chinese College Students

Key Result Area	Objectives	Strategies/Activities	Persons Involved	Success Indicators
Average Empathy	Enhance individual empathy, so that students can better understand the feelings and experiences of others. Strengthen the emotional response ability of individuals in interpersonal interactions and learn how to better respond to the emotional changes of others. 3. Increase the frequency and depth of human interactions and promote deeper human connections.	1. One-on-one counseling to help students identify and overcome barriers to empathic development through individual counseling. 2. Group counseling (empathy training), organizing students to participate in empathy training groups, and improving empathy skills through activities such as role playing. 3. Group discussions, regular seminars for students to share empathic experiences and learn from each other.	A professional psychological counselor Psychology teacher Student volunteer Psychological trainer	The ability of individuals to empathize is significantly improved, and they are able to more accurately express others' emotions in interpersonal interactions, such as being able to identify and appropriately respond to others' emotional states in simulated situations.
Average Emotional Expression	Improve individual emotional expression ability, so that students can express their feelings more clearly. Improve the intensity and way of emotional expression, and learn to express emotions in a healthier way Reduce the impact of negative emotional expression on daily life, and reduce the pressure and conflict caused by negative emotional expression.	Emotional management skills training to help students master emotional management methods, such as deep breathing, relaxation training, etc. Emotional expression group counseling, organized students to participate in emotional expression training groups, and improved their expression skills through collective activities. Practice emotional regulation skills, guide students to practice emotional regulation through diary recording and other ways.	A professional psychological counselor Psychological counselor student mental health volunteer School medical worker	Students showed more appropriate emotional expression, reduced negative emotional expression and improved emotional stability, such as showing more positive emotional expression in diary records.
Average Peer Relationship	Enhance personal self-efficacy and make students believe that they are capable of handling challenges in interpersonal relationships. Enhance interpersonal trust and build more stable interpersonal relationships. Strengthen empathy in peer relationships and promote mutual understanding and support through empathy.	Healthy relationship Building seminars, regular seminars are held to teach the knowledge of building healthy relationships. Problem solving skills training, providing students with interpersonal conflict resolution skills training. Teach human relations courses and set up special courses to teach students how to maintain good interpersonal relationships. Group counseling for students with specific interpersonal problems and additional support for students with special interpersonal problems.	A professional psychological counselor Psychology teacher Student volunteer	Peer relationships are improved, based on increased empathy and presentation skills, such as showing higher levels of empathy and better interpersonal skills in peer evaluations.

Table 10 shows the research on psychological intervention programs for Chinese college students. This table summarizes a psychological intervention program for Chinese college students with empathy, emotional expression, and peer relationship parity. For Key Result areas, the focus was on average levels of empathy, emotional expression, and peer relationships, and the main goals of these interventions were to strengthen participants' empathy and emotional expression skills and improve the quality of their peer relationships. In terms of strategies and activities, ways to achieve goals, including presentations, classes, group discussions, individual counseling, group counseling, and specific exercises (including multimedia artistic expression, emotional stress reduction exercises, meditation, etc.).

Measure and evaluate the effectiveness and measurable results of the project by working with the participants. The empathy and emotional expression of college students can have a great impact on their peer relationships, as well as their psychology (Eloisa et al., 2019). Because poor empathy, or inappropriate

expression skills can cause peer relationship distress, and further cause psychological distress. Psychological distress is accompanied by negative emotions such as anxiety, tension, fear or guilt, and difficulties in establishing trusting relationships with others may challenge their current life situation and make them unable to carry out normal study and life (Ou, 2018). Many students hope that their lives will change, and they hope that they can get some social support or guidance and help from professional psychological teachers when they need help. The comprehensive intervention is designed to help them reduce emotional distress when they feel lost and helpless and need help, improve empathy and expression skills, better promote peer relationships, establish a more positive and healthy mindset, face future challenges with confidence, and live a more fulfilling and happy life (Long, 2023).

In the process of improving college students' empathy ability, cognitive empathy and affective empathy are the key improvement goals. Cognitive empathy involves the ability to understand another person's emotions, while affective empathy is an emotional response to another person's emotions (Jin, 2022). However, college students often face empathy difficulties, such as a lack of emotional understanding or the ability to respond emotionally, leading to interpersonal tension (Lisha et al., 2021). To this end, I have designed interventions aimed at balancing the development of these two empathic capacities. It is conducted in a comprehensive manner using a variety of forms of strategic approaches, including presentations, classes, group discussions, individual consultations, group consultations and specific exercises. In addition, the cooperation between full-time school psychology teachers, school counselors, psychology teachers and guidance experts is also very important, focusing on improving college students' confidence level, self-efficacy, emotional stability, diversity of emotional expression, and ability to respond to others' emotions.

Through situation simulation, role play, Ellis' emotional ABC theory lecture, multi-media art expression group counseling and other methods, students can enhance their understanding and resonance of others' emotions, and provide training on emotion management and expression skills. Under the guidance of professional psychological counselors and teachers of psychological courses, students can find a balance between emotional understanding and expression. Help them overcome empathy disorders, effectively manage emotional trauma, relieve psychological distress, and improve the ability to recognize and understand the internal feelings and thoughts of others and their coping skills.

Another area of focus for the intervention program is emotional expression. It is also a common problem for college students that inappropriate expressions cause disharmonious peer relationships (Jones 2022). This condition results from emotional expressions that are too strong, frequent or expressed in an inopportune manner, causing misunderstanding, conflict or discomfort to others. For example, excessive or insincere expression of positive emotions may also lead to peer disgust, and excessive catharsis in the expression of negative emotions may lead to peer alienation or disgust, thus weakening the quality of interpersonal relationships. In addition, mastering appropriate emotional expression skills is crucial to maintaining a harmonious peer relationship (Hooley et al., 2019). For students with emotional expression difficulties, the aim is to help them recognize their needs, build healthy interpersonal relationships, and improve their emotional expression skills.

Coaching strategies should focus on improving self-awareness, emotional management and effective communication skills. First, learn emotional management techniques, such as meditation, mindfulness exercises, relaxation training, etc., to help them stay calm when they are emotionally agitated and thus express their emotions more rationally. Secondly, help students improve their self-awareness, so that they can identify and understand the source of their emotions, so as to avoid the impulsive expression of emotions. Thirdly, through many targeted communication skills training, college students are encouraged to use appropriate language and ways when expressing negative emotions, so as to reduce the harm and misunderstanding to others. Professional psychological counselors can use situational simulation or role play in psychological dramas, relaxation training, etc., so that students can practice different emotional expressions under the condition of emotional relaxation, and conduct group discussions to get feedback and further help them reflect and improve. At the same time, the understanding and support of peers and tutors should be obtained to establish an interpersonal network

environment with safe expression of emotions, so that college students can express themselves in a safe enough environment, establish a positive interactive relationship, and finally enable students to effectively express emotions, promote the harmony of interpersonal relations and their mental health.

Finally, for college students with peer distress caused by inadequate empathy and inappropriate expression, the counseling strategy should comprehensively improve empathy and emotional expression skills. Combined with tutoring to enhance empathy and emotional expression skills, students can develop cognitive empathy and affective empathy through cognitive behavioral therapy (CBT) to help them improve their understanding and sensitivity to the emotions of others (Deng, 2018). Through role-playing, situational simulation and other exercises, students can experience the perspective of others, thereby enhancing their empathy ability (Cui et al., 2022). Provide emotional management training, such as self-regulation strategies and mindfulness exercises, to help students stay calm when they are emotional, so as to avoid impulsive behaviors, focus on cultivating students' emotional regulation and expression skills, and guide college students to effective communication skills, especially non-violent communication methods, to express emotions in a constructive way and avoid conflicts caused by improper expression. Finally, a supportive social environment is established that encourages students to practice emotional expression in a safe space and promotes their confidence and skill development through positive feedback. Through these strategies, students are helped to improve their peer relationships and promote their mental health and social development.

In short, college students with poor empathy ability and inability to properly express their emotions do face more peer relationship problems and psychological confusion and challenges than ordinary college students. Through this intervention program, the researchers hope to help them develop positive coping styles, enhance the cognitive and affective empathy ability in empathy, and increase the skills of effective expression, so as to reduce the peer distress and adverse effects on mental health caused by inadequate empathy and inappropriate expression. With professional guidance and support, the researchers hope these students will be able to work through their problems, have healthy relationships, and have a more positive future.

4. Conclusions and recommendations

The distribution of demographic variables such as gender, age, major, place of origin and type of university is relatively uniform, which is more representative of Chinese college students, and there is no bias towards certain groups during the investigation. The scores of Chinese college students in different dimensions of empathy scale, emotional expression scale, peer relationship scale and three scales are all at the average level, indicating that college students are healthy in terms of mental health and meet the standards of mental health of Chinese college students. Research shows that good empathy and positive emotional expression are conducive to improving the quality of peer relationships. The stronger the ability to empathize and express emotions, the better the peer relationship. It shows that the cultivation of college students' empathy ability and emotional expression skills is of great significance to the improvement of their peer relationship. Research shows that all dimensions of empathy are significantly positively correlated with emotional expression ability, and people with strong empathy ability are more effective in emotional expression. Empathy is negatively associated with loneliness and exclusion in peer relationships, suggesting that high empathy promotes better peer relationships. Emotional expression is positively correlated with unpopularity and negatively correlated with loneliness and rejection, suggesting that moderate emotional expression is beneficial to peer relationships. Empathy and emotional expression affect the quality of peer relationship. Research shows that emotional empathy is negatively related to peer relationship quality, while emotional expression ability positively affects peer relationship. High emotional empathy and strong emotional expression have significant negative effects on peer relationship, which may be caused by neglecting individual needs or being overly emotional. Conversely, effective emotional expression promotes relationship stability. Empathy positively affects peer relationship quality in general by promoting appropriate emotional expression. The proposed psychological intervention plan aims at improving the empathy ability, emotional expression skills and peer relationship quality of Chinese college students. Through various strategies such as individual and group counseling, role playing, emotion

management training and interpersonal relationship courses, they can enhance their emotional understanding and expression ability and build a healthier interpersonal network. Under the guidance of professional psychological counselors and teachers, the program is expected to help students overcome empathy barriers, effectively manage emotions, promote mental health and self-confidence, and build a more harmonious peer relationship.

College students can establish a self-help group to promote the good development of peer relationship. Use school resources to build a support network of trusted people, such as classmates, friends, mentors or mental health professional teams or organizations, increase campus activities, provide opportunities and forms for interpersonal communication, can obtain emotional support and understanding, deepen interpersonal communication, enhance interpersonal trust, and enhance college students' empathy and expression skills. School teachers can create a safe and supportive classroom environment or student group, pay attention to college students' empathy through investigation, interview, observation and other means, understand the intermediary mechanism of expression ability, and carry out intervention in an atmosphere of respect and understanding. School psychological staff and college counselors can carry out various group activities according to the different psychological characteristics of empathy and expression ability, and encourage targeted activities in the form of group cooperation, with equal emphasis on competition and cooperation, so as to promote the improvement of students' empathy and expression ability. Or promote the establishment of a comprehensive campus mental health support system, including the provision of professional psychological counseling services, mental health education and training, and the creation of an inclusive and supportive campus environment to ensure that students have access to timely and effective psychological assistance. In the implementation of the intervention, the needs of emotional empathy, expression ability and peer relationship should be assessed first, and it is very important to customize the program according to their specific concerns and expectations. Secondly, lectures, group counseling or one-to-one targeted psychological counseling can be conducted according to the intervention procedure. Future studies will continue to explore peer distress in Chinese universities, and further studies will include more diverse samples, including students from different socioeconomic backgrounds, ethnicities, and disciplines, to determine whether the observed patterns apply to different populations and to identify any unique challenges faced by particular groups; It will increase various ways to promote the good development of college students' peer relationship, including classes, extracurricular activities, speeches, media publicity, psychological counseling, and homogeneous group psychological counseling, and finally improve the mental health level of Chinese college students.

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