

The Relationship Between Personality Traits, Emotional Stability and Mental Health in Art Vocational and Technical College Students During Epidemic Prevention and Control

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Objective: To investigate the relationship between the personality traits, emotional stability and mental health state of students in vocational and technical colleges of art under epidemic prevention and control based on latent trait–state theory.

Methods: Using the stratified sampling method, we selected 1569 students in vocational and technical colleges of art as research subjects. From 1 April 2022 to 5 April 2022, we conducted an online survey using the Eysenck Personality Questionnaire (Adult Edition) (EPQA), Emotional Stability Self-Test Scale and University Personality Inventory (UPI) to analyse the relationship between the traits, emotional stability and mental health of students in vocational and technical colleges of art.

Results: For the EPQA personality traits, boys had lower extraversion and introversion scores than girls (47.71 ± 11.23 vs 49.06 ± 10.74 , $p = 0.021$). In terms of mental health, boys had lower scores than girls (12.20 ± 12.73 vs 14.64 ± 11.85 , $p < 0.001$). There were significant grade differences in psychoticism and total mental health scores in terms of EPQA personality traits ($P < 0.01$). There were significant associations between all dimensions of personality traits, emotional stability and mental health ($r = 0.68, 0.62, p < 0.01$). Emotional stability plays a partial mediating role in the effects of neuroticism on mental health.

Conclusion: There is a close relationship between personality traits, emotional stability and mental health. Under the condition of epidemic prevention and control, strengthening the management of the self-emotional stability of students in vocational and technical colleges of art is helpful in improving students' mental health.

Keywords: personality traits, emotional stability, mental health, students in vocational and technical colleges

Introduction

Mental health is a positive and continuous mental state reflected mainly in the personal motivation of life, good inner feelings and good social adaptation, where individuals can give full play to their advantages to contribute to society.¹ However, in recent years, the sudden outbreak of Coronavirus Disease 2019 (COVID-19) had a certain impact on the mental health of college students. Studies have found that the mental health problems of college students during the COVID-19 epidemic were more prominent,² especially for students in vocational and technical colleges. In particular, art higher vocational students, art higher vocational students as a special group, art higher vocational students compared with ordinary college students have active thinking; however, their ideal faith is weak, with prominent self-consciousness, distinct personality characteristics and low levels of collectivism; furthermore, due to psychological problems, suspension and withdrawal from college often occur.³

At present, epidemic prevention and control has shifted to the normal stage, and the stimulated emotional state has shifted from one of stress to one of low mood, with different emotional states having different effects on people.⁴ Additionally, universities have further strengthened the management of students in accordance with local epidemic

prevention and control requirements. Under normal epidemic prevention and control, the emotional state of students is prone to fluctuation, leaving students susceptible to problems such as anxiety, post-traumatic stress disorder, alcoholism, irritability and suicide. Specifically, vocational art and sports high-school students are more prone to such psychological diseases because of their weak psychological endurance.⁵ Liu et al's research of 2381 vocational school students in China showed that the prevalence of student stress, anxiety and depressive symptoms were 55.7%, 33.2% and 53.5%, respectively.⁶

A personality trait is a relatively stable personality state formed by a person that reflects that person's attitude towards things. A large body of evidence suggests that personality can be seen as an emergent property of the response to emotional experience. Emotional experiences of control, approach, avoidance are the basis of different traits, which include positive and negative urgency, trait emotional approach and avoidance, alexithymia and emotional expressiveness.⁷

Gray's theory of personality biology holds that extraversion is related to the behavioural activation system (BAS), which is assumed to be sensitive to reward stimulation or motivation, while neuroticism is associated with the behavioural inhibition system (BIS), which is activated by punishment and non-reward stimuli. These two systems are negatively correlated, indicating a relationship between personality traits and emotions; the BAS may be more motivated by the need to obtain positive rewards than the need to avoid negative outcomes, while the BIS shows the opposite pattern.⁸ A study by Chuan et al also found that extroversion (ie extroversion or introversion) and neuroticism (ie high or low neuroticism) affect the visual recognition of emotional words.⁹ The perception of external stressors may depend on personality traits to a certain extent. Personality traits affect individual cognitive, emotional and behavioural differences. Therefore, personality traits can predict the possible impact of mental health during the crisis.¹⁰ Additionally, previous studies have shown a correlation between personality traits and mental health.^{11–13}

Good and stable emotions can make people physically and mentally happy, enabling them to maintain a healthy and positive state. Studies have shown that emotional regulation was associated with better mental health function during the Coronavirus Disease 2019 (COVID-19) pandemic.^{14,15} Individual differences in emotion regulation ability under stress (such as anxiety and fear) play a key role in mental health. Cardi et al¹⁶ found that individuals with mental disorders were more likely to experience negative emotions and unhealthy behaviours over time than people with emotional stability.

Studies have also revealed that personality traits, emotion regulation strategies and mental health are related to most dimensions in general, and there are differences in personality traits, emotional stability and mental health between different genders and grades.^{17,18} According to the quality–pressure theoretical model, it is believed that congenital and acquired factors interact to affect all human behaviours.¹⁹ Latent trait–state theory states that human cognition, emotion and behaviour are the results of individual traits, situational characteristics and the interaction between traits and situations.²⁰ Personality traits (as relatively stable traits) and emotional stability (as a factor vulnerable to external influences) may both impact the mental health status of college students under normal epidemic prevention and control. In Liang's research, through the investigation of students from 6 higher vocational colleges in Changsha city, we found that personality traits can affect subjective happiness and then affect mental health through crisis treatment.²¹

In conclusion, based on the diathesis–stress theory model, trait–state theory and existing research results, personality traits are closely related to mental health status, and emotional stability may play a mediating role. However, the effect mechanism of emotional stability in the influence of personality traits on the mental health of college students needs to be further verified. Moreover, previous research mainly focused on ordinary college students, with less consideration of students in vocational and technical colleges of art. The personality traits of students in vocational and technical colleges may have different characteristics, and their emotional stability may be more easily affected by the external environment. This study aims to investigate the relationship between the personality traits, emotional stability and mental health state of students in vocational and technical colleges of art under epidemic prevention and control based on latent trait–state theory. Therefore, this study assumed: (1) There are different degrees of correlation among various dimensions of personality traits, emotional stability and mental health. (2) Personality trait neuroticism related to emotions and emotional stability are predictive of mental health. (3) The current degree of emotional stability plays a partial mediating effect on the influence of personality trait neuroticism on mental health.

Accordingly, this paper was established based on the above research hypothesis and provides a reference for further strengthening the mental health education of art college students and cultivating more qualified art talent.

Materials and Methods

Study Subjects

Using the stratified sampling method, 1569 students in vocational and technical colleges of art from our School were selected as research subjects from 1 April 2022 to 5 April 2022. Education in China's vocational colleges adopts a three-year system, and there are differences in the personality characteristics and mental health of students in different grades. According to the grades of freshman ($n = 1594$), sophomore ($n = 854$) and junior ($n = 731$), it was divided into three layers. Each layer was randomly selected according to 50% of the same proportion and included 797 students in the first year, 427 students in the second year and 366 students in the third year. The number of students in the school is unbalanced between men and women, and to control for the confounders of gender, the proportion of males in the total population was not less than 40%. We conducted pre-research prior to the study. A total of 1600 questionnaires were issued, and 31 with invalid data were removed (due to missing items or an insufficient response time). A total of 1569 valid questionnaires were collected, with an effective recovery rate of 98.06%. The publication of these findings was conducted with informed consent from the study subjects.

Research Tools

Eysenck Personality Questionnaire Adult Edition

The Eysenck Personality Questionnaire (EPQA), which was compiled by British psychologist H. J. Eysenck and others,²² was used. The questionnaire included 88 items, and the participants answered “yes” or “no” according to their actual situation. For a positive score, “yes” equalled 1 point and ‘no’ equalled 0 points; the reverse score was the opposite. There were 21 questions in the extraversion and introversion (E) scale, with 18 questions with positive scores and 3 questions with reverse scores. The lower the score, the more introverted the person; the higher the score, the more outgoing the person. There were 23 questions on the psychoticism (P) scale, with 11 questions with positive scores and 12 questions with reverse scores. High scores indicated typical psychoticism and stubbornness. There were 24 questions on the neuroticism (N) scale, all with positive scores. Low scores indicated a more stable mood, while high scores indicated typical emotional instability. Finally, there were 20 questions in the lie (L) scale, with 5 questions with positive scores and 15 questions with reverse scores. The Cronbach's α coefficients of the scales E, P, N and L were 0.80, 0.67, 0.90 and 0.68, respectively.

Self-Test Scale of Emotional Stability of College Students

The Self-Test Scale of emotional stability for college students introduced in the big data platform “Mind Education” based on the stress–diathesis model was adopted.²³ There were 30 questions in the questionnaire, each of which had three options: “yes” (1 point), “good” (0 points) and “uncomfortable” (2 points). A score of ≤ 20 indicated stable emotion and strong self-confidence, a score of 21~40 meant that the mood was basically stable, relatively deep and calm, while a score of ≥ 41 indicated an extremely unstable mood and excessive daily trouble; ie, the lower the score, the more stable the mood and the better the state. The Cronbach's α coefficient of the scale in this study was 0.84.

University Personality Inventory

The University Personality Inventory (UPI) questionnaire translated and revised by Fan Fumin²⁴ and others was used mainly to understand the mental health status of the subjects. There were 60 questions in the UPI questionnaire, which required participants to answer “yes” or “no” according to their physical and mental conditions over the last year, with 1 point for “yes” and 0 points for “no”. Among them, questions 5, 20, 35 and 50 were lie questions, and the score was not included in the total score. Higher scores indicated that attention was needed concerning mental health. The Cronbach's α coefficient of the scale in this study was 0.95.

Data Collection Procedure

The investigators comprised teachers from the school's psychological counselling centre and members of the psychological association. Before the survey, the project team conducted standardised training for the participating investigators to ensure they mastered the survey methods, strictly controlled the survey process and ensured the integrity and accuracy of questionnaire completion. All study subjects completed the questionnaire with informed consent. The valid questionnaire criteria were no missing items, no obvious logical errors and a response time of no longer than three minutes.

Statistical Analysis Method

The study was a cross-sectional study and data were processed using SPSS 22.0 software. The Kolmogorov–Smirnov method was used to test the normality of quantitative data. Quantitative data conforming to a normal distribution were described by mean \pm standard deviation. Quantitative data not conforming to a normal distribution were described by median and quartile spacing. A *t*-test or a non-parametric test (ie the Mann–Whitney *U*-test) was used for the comparison of quantitative data between two groups. A one-way analysis of variance or a non-parametric test (ie Wilcoxon’s signed-rank test) was used for comparisons between three groups, and the least-significant difference (LSD) was applied for post hoc comparison. Count data were described by the number of cases or percentage (%). Pearson’s correlation analysis (*r*) was used to analyse the correlation between variables. Multiple linear regression was applied to analyse the influencing factors on mental health. The stepwise regression method and the bootstrap method were used to test the mediating effect, and the mediating effect of emotional stability in personality traits on mental health was analysed. A value of $p < 0.05$ indicated statistical significance without any special indication.

Results

Baseline Characteristics of the Study Subjects

A total of 1569 subjects were included, including 660 males (42.07%) and 909 females (57.93%). In terms of grade distribution, the first year of college had the highest number of students (783, 49.90%). The number of non-only children (1248) was the highest, accounting for about 79.54%. The highest number of people (677) were born in towns, accounting for about 43.14% (see Table 1).

Difference Analysis Between Personality Traits, Emotional Stability and Mental Health Differences in Gender Between Personality Traits, Emotional Stability and Mental Health

Gender variables were analysed using an independent-sample *t*-test. The results showed that for the EPQA personality traits, boys had lower extraversion and introversion scores than girls (47.71 ± 11.23 vs 49.06 ± 10.74 , $p = 0.021$), with a statistically significant difference ($p = 0.021$), and higher lie scores (48.14 ± 9.30 vs 47.04 ± 8.6 , $p = 0.027$), with a statistically significant difference ($p = 0.027$). In terms of mental health, boys had lower mental health scores than girls (12.20 ± 12.73 vs 14.64 ± 11.85), with a statistically significant difference ($p < 0.001$) (see Table 2).

Analysis of Grade Differences Between Personality Traits, Emotional Stability and Mental Health

The results are shown in Table 3: There were significant differences in terms of grade for the psychoticism and lie scores in the EPQA personality traits and the total mental health scores ($p < 0.01$). The LSD multiple comparison analysis found that for the psychoticism dimension, students in the third year of college had significantly higher scores than those in the first and second years of college ($[53.27 \pm 12.04$ vs $49.77 \pm 10.39]$ and $[53.27 \pm 12.04$ vs $51.59 \pm 11.04]$), and students in the second year of college had significantly higher scores than those in the first year of college (51.59 ± 11.04 vs 49.77 ± 10.39), with statistically significant differences ($p < 0.05$). Students in the third year of college had significantly lower

Table 1 Baseline Characteristics of the Study Subjects

Index	Group	Number	Percentage (%)
Gender	Male	660	42.07
	Female	909	57.93
Grade	First year of the college	783	49.90
	Second year of the college	423	26.96
	Third year of the college	363	23.14
Only child	Yes	321	20.46%
	No	1248	79.54%
Birthplace	City	241	15.36%
	Towns	677	43.14%
	Rural area	643	40.98%

Table 2 Difference Test of Personality Traits, Emotional Stability and Mental Health of Students of Different Genders

Variable	Male (N=660)	Female (N=909)	t	p
1. Extraversion and Introversion	47.71±11.23	49.06±10.74	-2.426	0.021
2. Psychoticism	51.37±10.34	50.85±11.55	0.934	0.353
3. Neuroticism	45.69±15.84	46.72±13.55	-1.367	0.182
4. Lie/Social Desirability	48.14±9.30	47.04±8.6	2.401	0.027
5. Emotional stability	22.40±9.74	23.3±8.63	-1.892	0.069
6. Mental health	12.20±12.73	14.64±11.85	-3.891	<0.001

Table 3 Difference Test of Personality Traits, Emotional Stability and Mental Health of Students in Different Grades

Variable	First Year of the College (N=7839)	Second Year of the College (N=423)	Third Year of the College (N=363)	F	p
1. Extraversion and Introversion	48.70±11.44	47.90±10.65	48.74±10.26	0.862	0.423
2. Psychoticism	49.77±10.39	51.59±11.04	53.27±12.04	3.328	<0.001
3. Neuroticism	46.29±14.40	45.86±14.42 ^a	46.78±15.08 ^{ab}	0.389	0.678
4. Lie/Social Desirability	47.76±8.68	48.12±8.66	46.22±9.60 ^{ab}	5.104	0.006
4. Emotional stability	23.03±8.93	23.29±9.45	22.26±9.13	1.354	0.258
5. Mental health	12.58±11.34	13.93±12.77	15.48±13.41 ^a	7.160	0.001

Notes: ^aThe difference was statistically significant compared to the first year of the college ($p < 0.05$); ^bThe difference was statistically significant compared to the second year of the college ($p < 0.05$).

scores in the lie dimension than students in the first and second years ([46.22 ± 9.60 vs 47.76 ± 8.68] and [46.22 ± 9.60 vs 48.12 ± 8.66]), which was statistically significant ($p < 0.05$). The mental health scores of students in the third year of college were significantly higher than those of students in the first year of college (15.48±13.41 vs 12.58±11.34), with a statistically significant difference ($p < 0.05$) (see Table 3).

Correlation Analysis of Personality Traits, Emotional Stability and Mental Health

The Pearson correlation analysis found that there were significant associations among all dimensions of personality traits, emotional stability and mental health ($p < 0.01$). Among them, the neuroticism dimension showed a significant positive correlation with mental health ($r = 0.68$), ie the more typically unstable the personality trait, the worse the mental health status. There was a significant positive correlation between emotional stability and mental health ($r = 0.62$), ie the worse the self-rated emotional stability, the worse the mental health status. There was a significant positive correlation between neuroticism and emotional stability ($r = 0.58$), ie the more typically unstable the personality traits, the more unstable the emotional stability state. This suggests a close link between personality traits, emotional stability and mental health (see Table 4).

Regression Analysis of Personality Traits, Emotional Stability and Mental Health

A regression analysis was performed, with mental health as the dependent variable and personality traits and emotional stability as independent variables. The regression equation considered control variables, including gender and grade. The regression equation was constructed as follows: mental health = 0.52 neuroticism + 0.29 emotional stability - 0.15 extraversion and introversion + 0.09 grade + 0.07 gender + 0.06 psychoticism. The R^2 value of the regression model was 0.49. The models showed that neuroticism, emotional stability, extraversion and introversion, grade, gender and psychoticism were independent predictors of mental health, which explained 52.31% of the total variation. Neuroticism and emotional stability are significant direct predictors of mental health, and other personality traits have relatively small effects (see Table 5).

Table 4 Correlation Analysis Among Personality Traits, Emotional Stability, and Mental Health (UPI)

Variable	1	2	3	4	5	6
1. Extraversion and Introversion (E)	1					
2. Psychoticism (P)	-0.165**	1				
3. Neuroticism (N)	0.138**	0.106**	1			
4. Lie/Social Desirability (L)	-0.126**	-0.249**	-0.540**	1		
5. Emotional stability	-0.095**	0.141**	0.579**	-0.389**	1	
6. Mental health (UPI)	-0.109**	0.190*	0.677**	-0.402**	0.615**	1

Notes: Pearson's difference correlation analysis, * $p < 0.05$, ** $p < 0.01$.

Abbreviation: UPI, University Personality Inventory.

Table 5 Test of the Mediating Effects of Emotional Stability on the Effects of Neuroticism on Mental Health

Regression Equation		The Overall Fit Index			Significance of the Regression Coefficient		95% Confidence Interval	p
Outcome variable	Predictive variable	R	R ²	F	β	t		
Emotional stability	Neuroticism	0.581	0.337	265.456	0.362	28.086	(0.34, 0.39)	<0.001
Mental health	Neuroticism	0.740	0.547	472.352	0.404	22.952	(0.37, 0.44)	<0.001
	Emotional stability				0.454	16.115		

The Mediating Role of Emotional Stability in the Influence of Personality Traits on Mental Health

The results constructed from the regression equations were further tested for mediating effects; the bias-corrected non-parametric percentile bootstrap method was used to estimate the mediating effect values by sampling 5000 bootstrap samples. The results showed that after adding the independent variable (personality neuroticism) and the mediating variable (emotional stability), the degree of personality neuroticism and emotional stability was significantly correlated with mental health. Combined with the results of the mediating effect analysis (see Table 6), the mediating effect value of emotional stability was 0.164, and its bootstrap 95% confidence interval was (0.137, 0.193), and the mediating effect accounted for 28.28%. (see Figure 1).

Discussion

Gender and Age Differences in Personality Traits, Emotional Stability and Mental Health

This study found that in terms of EPQA personality traits, boys' extraversion scores were lower than girls' scores; in terms of mental health, boys scored lower than girls. There is a certain correlation between personality traits and mental health performance in terms of gender. Boys may be not good at words and are introverts due to their personalities. They may be more likely to have unhealthy behaviours, such as alcoholism, aggression and irritability in the face of sudden stress.²⁵ Some studies similarly found that extraversion and conscientiousness characteristics were associated with people participation in COVID-19 control measures and also had gender differences.^{10,26–30}

Table 6 Analysis of the Mediating Effects of Emotional Stability on the Effects of Neuroticism on Mental Health

	Indirect Effect Value	Boot Standard Error	Boot CI Lower Limit	Boot CI Upper Limit	Relative Mediating Effect
Mediating effect	0.164	0.014	0.137	0.193	28.82%

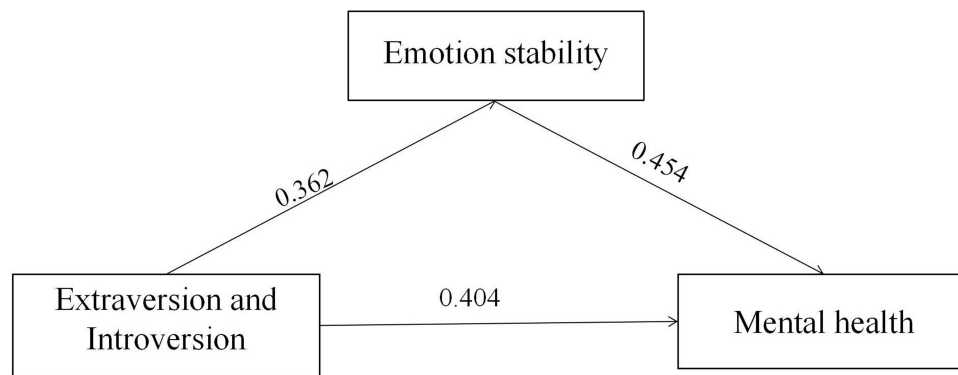


Figure 1 Model of the mediating effect of emotional stability on the effects of neuroticism on mental health.

This study also found a significant correlation between grade and psychoticism scores and mental health scores. The higher the grade, the more opinionated the students and the more ability they have to maintain their views and opinions. At the same time, because the ability to master knowledge is stronger than in lower-grade students, they may have more experience in dealing with stressful situations, and they also know how to better manage their emotions and maintain a good mental state. This is consistent with research by Liu Tianyi et al.³¹ Therefore, more personalised psychological counselling measures should be implemented for boys and lower-grade students.

Relationship Between Personality Traits and Mental Health

Some scholars have performed visual analyses of the personality research hotspots and trends of the past two decades; they found that personality and mental health research is one of the three major research directions and pointed out that with the normalisation of epidemic prevention, paying attention to the relationship between personality and mental health can help to aid the public in fighting psychological problems.²⁶ Based on the social background of normalised epidemic prevention and control, this study explored the relationship between personality traits and the mental health of college students, which is of great significance. The research results of Ruosong et al.³² during the COVID-19 epidemic showed that personality factors were related to the individual perception of anxiety and stress. Different personality traits had different levels of stress perception, and personality had an important impact on individual mental health.

The correlation analysis of the present study showed a significant correlation between all dimensions of EPQA personality traits and mental health. Among them, there was a significant positive correlation between the neurotic dimension of personality traits and mental health, indicating that the more typically stable the personality trait, the better mental health status, while the more typically unstable the personality trait, the more attention is needed in terms of mental health. A neurotic personality will have negative emotions, resulting in individuals being unable to effectively cope with stressors and being prone to anxiety and stress, which, in turn, increase the pressure brought about by an event, making individuals even more sensitive to stress.^{10,33–35} The regression analysis showed that personality trait neuroticism was significantly correlated with mental health, which is consistent with the results of previous studies.³⁶ Therefore, cultivating positive personality traits in college students is conducive to improving students' interpersonal relationships, alleviating academic pressures and improving their mental health.³⁷

Relationship Between Emotional Stability and Mental Health

This study showed that the self-assessed emotional stability status of college students was significantly positively associated with students' mental health, indicating that current emotional status is closely related to mental health status. This is also consistent with using emotional stability as a key standard to assess the mental health of college students.³⁸ Capara believes that regulatory emotional self-efficacy is the level of belief or self-confidence of individuals to effectively manage and regulate their emotions. It mainly includes the cognition of different emotional states, the

individual's understanding of others' emotions, the ability to manage emotions and the corresponding different emotional responses.³⁹

Emotional health is the core indicator of mental health, and delivering emotional education to college students is an important way to ensure their mental health. Individuals with high levels of emotion regulation self-efficacy can maintain positive emotions, effectively regulate various negative effects caused by uncoordinated negative emotions and ensure enthusiasm in their work and learning. On the one hand, the expression of positive emotions and the regulation of negative emotions directly affect mental health, while on the other, they indirectly affect mental health through interpersonal relationships. Therefore, colleges and universities should strengthen emotional management education for students, guide students in learning how to appropriately express emotions and regulate self-emotion, improve self-growth and form a healthy personality.

However, under normal epidemic prevention and control, a series of strict student management regulations in colleges and universities can easily cause bad emotional experiences for college students, including anxiety, dissatisfaction, anger and other emotions.⁴⁰ Therefore, under normal epidemic prevention and control, colleges, universities and all sectors of society must pay attention to the mental health of college students, strengthen emotion regulation education and guidance for those students and reinforce the psychological construction of emotional regulation, which can be improved by enhancing students' psychological resilience.⁴¹

Analysis of the Mediating Role of Emotional Stability in the Relationship Between Personality Traits and Mental Health

Our results showed that a neurotic personality trait and emotional stability performance positively predict mental health status and that emotional stability plays a mediating role in the effect of neuroticism on mental health status. This result aligns with the theoretical hypothesis that the personality trait neuroticism can directly and positively predict mental health status and influence that status through its mediating effect on emotional stability. Based on latent trait–state theory, a person's behavioural performance is mutually influenced by the latent trait and the state. Under epidemic prevention and control, the mental health status of college students is affected not only by the neuroticism of stable personality traits but also by the emotional stability caused by social stimuli, such as epidemic prevention and control. This is consistent with previous studies that found that psychological resilience played a partial mediating role in the effects of college student personality traits on depression during COVID-19.¹⁰ The study by Moeller et al also showed that emotional stability was a protective factor for the mental health of college students during the COVID-19 pandemic.⁴² Moreover, based on the diathesis–stress model, when the susceptibility constitution is stimulated by an external emergency source, the stressor will have a superimposed effect based on the degree of susceptibility to produce a psychological load on the individual. When the total stress load of an individual exceeds their personal threshold, various physical and psychological symptoms will occur. The neuroticism of personality traits can not only directly affect the mental health state of college students but also affect their mental health state via its mediating effect on emotional stability.²⁹ If the personality traits of college students are highly neurotic, their emotions are unstable, and additional epidemic prevention and control (and other factors) lead to low emotional stability, this group of college students is more likely to exhibit psychological symptoms. Therefore, the mental health of this group needs more attention.

Research Significance, Limitations and Outlook

This study explored the mechanism of emotional stability in the influence of personality traits on mental health status based on the diathesis–stress model and latent trait–state theory, with the results demonstrating the theoretical hypothesis and enriching the theoretical research on the mental health of college students. Additionally, this study has some educational practical significance. First, the relationship between personality trait neuroticism, emotional stability and mental health suggests that college students should recognise their own personality traits and learn to perceive their own state of emotional stability to maintain their mental health. Second, it has guiding significance for how to implement mental health education for college students. Studies have shown that neuroticism and emotional stability are closely related to mental health, and emotional stability plays a partial mediating role in the influence of personality traits on

mental health, which suggests that educators can improve students' mental health from the perspective of improving their emotional stability.

This study has some limitations. First, in terms of research methods, it was designed as a cross-sectional study. Although the mechanism of different levels of emotional stability in the effects of personality traits on mental health was explored, it was impossible to reveal the causality among these variables. Therefore, in future studies, it will be necessary to adopt a tracking design to investigate the development and changes between personality traits, emotional stability and mental health and clarify the causal relationship between them to more fully and deeply reveal the mechanism of personality traits on the mental health of college students. Second, in terms of research subjects, this study mainly assessed higher vocational students in an art college, who were relatively single. In the future, the subject samples can be further enriched and the research results more universal to provide theoretical and practical guidance for delivering mental health education for college students in vocational and technical colleges. Finally, this study only investigated the mental health of vocational art and sport college students during the evaluation period, which may not represent their actual long-term psychological states. Therefore, a long-term follow-up study should be performed to evaluate the mechanism of emotional stability in the influence of personality characteristics on psychological state.

Conclusion

There were significant associations among all dimensions of personality traits, emotional stability and mental health, indicating that there is a close link among personality traits, emotional stability and mental health. Personality trait neuroticism and emotional stability play a positive role in predicting the mental health of college students, and emotional stability plays a partial mediating role in the effects of neuroticism on mental health. Under epidemic prevention and control, the mental health of college students is affected by many factors, mainly by the significant factors related to emotions (neuroticism and emotional stability) as well as by other personality traits, gender and grade. However, as college students mature, their personality traits are difficult to change, and emotional stability may be easier to adjust than personality traits. Therefore, under epidemic prevention and control, it is necessary to strengthen the emotional stability training of college students, especially those with typical neurotic personality traits, to maintain the mental health of those students.

Data Sharing Statement

All data generated or analyzed during this study are included in this published article.

Ethics Approval and Consent to Participate

This study was conducted in accordance with the Declaration of Helsinki and approved by the Department of Psychology, Beijing Normal University (202304280081). Written informed consent was obtained from all parents/local guardians.

Consent for Publication

Publication of this findings was conducted with informed consent from study subjects.

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Disclosure

The author reports no conflicts of interest in this work.

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