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The construction and application effect of college students' employment psychological support network based on mental health education

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SUMMARY: *Whether and how college mental health education can provide effective support for students' employment psychology is a question that needs to be answered empirically. Firstly, it is clarified that mental health education includes four core dimensions: curriculum system, penetration and integration, professional resources and supportive atmosphere, and it is hypothesized that it can have a comprehensive effect on the overall college students' psychology of employment, including mental toughness, anxiety level, self-efficacy, and clarity of decision-making. Structural equation modeling (SEM) was introduced to verify this complex relationship. Based on this model, a questionnaire with 41 measurement items was designed, and the scales used had excellent reliability and validity, with overall Cronbach's α coefficients of 0.956 and 0.947, respectively. 408 valid questionnaires were returned, revealing that the four dimensions of mental health education had a significant positive impact on college students' psychology of employment, with a particularly strong effect on campus supportive atmosphere and professional resources (0.423) were particularly prominent, with path coefficients of 0.465 and 0.423. And positive mental health education experience could effectively enhance students' psychological resilience and self-efficacy in employment, and significantly reduce their employment anxiety level. The factor loadings were 0.743, 0.791, and -0.682, respectively.The final SEM model showed excellent fit with $\chi^2/df=1.967$, RMSEA=0.028, and CFI=0.963, which strongly confirmed the theoretical hypotheses.*

KEYWORDS: *mental health education; college students' employment psychology; structural equation; self-efficacy*

1 Introduction

In recent years, with the development of Chinese higher education from elite to mass education, the number of college graduates has risen sharply, resulting in a variety of pressures and challenges they often face in the employment process, including market competition, scarcity of entrepreneurial resources, competition for employment, self-expectations, family expectations, and social expectations [1-3]. These pressures are a great test for college students who lack social and entrepreneurial experience, and if they cannot adjust their mindset in time

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or seek assistance from others to enhance their employment stress tolerance, it will jeopardize their physical and mental health, and in serious cases, it may even lead to extreme behaviors such as committing crimes or committing suicide [4, 5]. Regarding the employment psychological pressure faced by college students and its impact, the literature [6] analyzed the association between psychological pressure and family support and employment status of Spanish university freshmen, and found that psychological pressure was prevalent through a survey of 4,166 students, and pointed out that female pressure was significantly associated with employment status, and that the pressure was generally elevated when family support declined. Literature [7] discussed the causes and effects of psychological stress in employment among university graduates, pointing out that factors such as increased social competition, higher employer standards, and individual cognitive biases combine to cause anxiety and depression, and emphasized that these stresses can impair career planning and mental health. Literature [8] studied the impact of employment stress on mental health of college students under the new crown epidemic, and found that female, personal and family stress were the main predictors through the survey, and pointed out that this stress significantly increased the level of depression and anxiety, emphasizing the need to develop targeted support measures. Literature [9] examined the impact of employment stress on college students' suicidal ideation, and through pathway analysis pointed out that expressive inhibition and depressive symptoms play a consecutive mediating role, and emphasized the urgency of intervening for emotion regulation. In this regard, colleges and universities should actively build a psychological support network for college students' employment based on mental health education, not only pursuing the delivery of knowledge and technology, but also paying more attention to designing coping programs for students to face various kinds of dilemmas in daily life, especially in the workplace.

The first and foremost task of the Employment Psychology Support Network is to carry out psychological assessment, relying on scientific assessment tools and methods to comprehensively assess college students' psychological quality, potential risks, and ability to withstand setbacks in employment, so as to provide psychological guidance for their subsequent employment path. The assessment of college students' psychological quality mainly centers on three dimensions: cognition, emotion and motivation. Cognitive assessment is to assess the thinking ability, memory, attention and problem-solving ability of college students, and to understand the cognitive adjustment that college students may encounter in employment [10-13]. Emotional assessment mainly assesses college students' emotional stability, optimism, stress resistance and so on [14]. Motivation assessment, on the other hand, assesses college students' interests, values, career goals, etc., so as to understand the source and persistence of college students' employment motivation [15, 16]. Literature [17] used a fuzzy clustering algorithm to quantitatively assess college students' mental health, classified students into multiple categories of psychological states by analyzing SCL-90 data, pointed out that the method can accurately identify psychological stress groups and provide a basis for job matching, and emphasized its practical value for early intervention and promotion of employment fitness. Literature [18] regarded employability as a positive self-regulating psychological structure, proposed a structured interview guide for employability counseling by introducing the Easy Employability Attribute Scale 2.0 and examining its reliability and validity, pointed out that the framework can help to improve personal career management ability, and emphasized its counseling value in promoting college students' employment. Literature [19] examined the impact of workplace relationship quality on the psychological well-being of working college students, noting that conflictual relationships exacerbate psychological stress through negative variables such as job burnout and emphasizing the importance of optimizing workplace interactions to promote psychological adjustment to employment. Literature [20] analyzed the

influencing factors of college students' employment intention from the perspective of behavioral psychology, extracted the three key factors of individual, family and society through questionnaire survey, pointed out that the individual factor is the most central, and emphasized the need for targeted channeling of employment concepts in order to enhance the college students' employment ability.

The potential risk assessment focuses on the psychological risk, decision-making risk and environmental risk of college students [21, 22]. Of course, in addition to the assessment of college students' employment, corresponding psychological adjustment and counseling should be provided to support and assist college students in the employment process to regulate their emotions, reduce pressure, enhance confidence, and better cope with various challenges and difficulties [23-25]. Literature [26] focuses on the psychological problems of college students' employment, proposes targeted guidance strategies by analyzing the causes of psychological dilemmas under the severe employment situation, and emphasizes the key role of strengthening mental health education in establishing a correct outlook on employment and enhancing stress resistance. Literature [27] examined the employment guidance of international students coming to China, analyzed the current situation and challenges of employment management through questionnaires and interviews, pointed out that the relaxation of policies and the internationalization demand of enterprises have brought new opportunities, and emphasized the importance of strengthening employment guidance in universities to promote the career development of international students.

Mental health education enhances students' psychological resilience, self-awareness and adaptability for employment through knowledge dissemination, atmosphere creation and resource support. Firstly, the three-dimensional core significance of mental health education in promoting university students' employment is analyzed - correct employment concepts, clear self-positioning and enhanced psychological adaptability. Then, the construction of a structural equation model is focused on, exploring how mental health education influences and shapes the employment psychological state of university students. Mental health education is decomposed into quantifiable variables such as "curriculum system", "infiltration and integration", "campus atmosphere" and "professional resources". At the same time, employment psychology is also broken down into key dimensions such as "psychological resilience", "anxiety level", "decision clarity" and "self-efficacy". Finally, the modeling process from theoretical assumptions, model identification, parameter estimation to model modification and evaluation is presented step by step.

2 Analysis of the mechanism of the role of mental health education on the employment psychology of college students

2.1 Theoretical basis of the study

2.1.1 Establishment of correct concepts

The traditional state-allocated employment has become history, and the concept of lifelong career no longer exists. With the change of the times and the development and progress of history, college students nowadays take the road of choosing their own careers, which is not a smooth road, and is even very rugged. In the face of the existing employment situation, college students often choose a career to solve the basic problems of life, and then gradually complete the pursuit of self-worth and social value according to personal opportunities and actual ability. Mental health education is conducive to helping students to establish the correct concept, and the employment concept and values are the bright light on the road of college students to choose

a career, so college students must establish the correct employment concept and values, in order to make their own to the right direction.

2.1.2 Clarify self-positioning

Understanding oneself is a difficult but necessary process, because only with a comprehensive understanding of oneself can one make the right choices based on one's own heart. The way of mental health education is to go into the heart of the students, not only to help them correct their mistakes and problems, let them realize their own value and irreplaceability, but also to let them learn to face the self and the reality with a peaceful mind, so that they can be full of hope and confidence in their life and employment, and persevere for the sake of their dreams. In mental health education, students are able to recognize and accept themselves correctly and position themselves accurately and reasonably, so that they can make clear their willingness to look for a job and the direction of choosing a career, so as to reasonably plan their own lives and future careers.

2.1.3 Enhancing adaptive capacity

Currently, university graduates are in the competitive mechanism and environment, so they not only need to face new opportunities and challenges, but also need to make new choices in the process of choosing a future career. The process of choosing a career requires college students to have a comprehensive understanding of themselves and positioning, but existing college students are often in this aspect of the awareness is relatively weak, and even in a passive state. The development of mental health education can effectively enhance college students' awareness of choosing their own careers, so that they can choose the most suitable careers for themselves, not to follow the crowd and compare with others, and to adjust their expectations of careers according to the reality and their own conditions, so as to make their employment scope to be effectively expanded and their employment choices to be more diversified.

2.2 Variable design and data sources

Mental health education refers to the systematic educational activities to popularize mental health knowledge, cultivate positive mental qualities, and enhance students' ability of psychological adjustment through courses, activities, counseling, and publicity, which has a positive impact on college students' employment psychology. This paper is based on the structural equation modeling of mental health education on college students' employment psychology.

2.2.1 Variable design

The study establishes exogenous latent variables of mental health education from four aspects: curriculum system, penetration and integration, professional resources, and supportive atmosphere. The specific observed variables are shown in Table 1.

Table 1: 4 exogenous latent variables of mental health education

Exogenous latent variable	Observation variables
Curriculum system	Participation in mental health courses
	Practicality of course content
	Quality of mental health courses
Infiltration and Integration	Psychological counseling by advisors
	Integration of psychological elements in professional courses
	Campus mental health cultural activities
Professional resources	School psychological counseling center
	Online psychological resource platform
	Professionalism of psychological counseling
Supportive atmosphere	The school's emphasis on mental health
	Activity enthusiasm of the psychological association clubs
	Openness of psychological support atmosphere

2.2.2 Questionnaire design

The core issue of this paper's research is the impact of mental health education on college students' employment psychology. Through the analysis of literature and expert interviews, the questionnaire on mental health education and employment psychology of university graduates contains 3 parts. One is non-quantitative questions, which are the basic information of the respondents, including gender, experts, family residence, family financial situation and whether they have internship experience. The mental health education dimension was based on Table 1 above about the 4 latent variables of curriculum system, penetration and integration, professional resources, and supportive atmosphere, which were designed as observation variables with 5 to 7 questions respectively, forming a total of 24 test questions. While the College Students' Employment Psychology Survey Scale was set up from the four dimensions of employment psychological toughness, employment anxiety level, employment self-efficacy and clarity of career decision-making, which contained a total of 17 question items. The questionnaires were developed on a 5-point Likert scale, with respondents' answers ranging from “strongly agree” to “strongly disagree” on a scale of 1 to 5 respectively. The questionnaire was distributed to seven universities from March to June, 2024, using a combination of online and offline methods. A total of 500 questionnaires were distributed, 436 valid questionnaires were recovered, with a recovery rate of 87.2%. 28 invalid questionnaires were excluded, resulting in 408 valid questionnaires, with a validity rate of 93.58%.

2.3 Introduction to structural equation modeling

2.3.1 SEM Overview

Structural equation modeling is a very general linear statistical modeling technique, also known as linear structural relationships, covariance structural analysis, or latent variable modeling. It can simultaneously calculate the influence relationship between multiple variables, and identify, estimate, and validate variables that have causal relationships. Compared with traditional linear regression analysis and factor analysis, it has several advantages, for example, the structural equation model can consider and deal with multiple dependent variables at the same time, which is more difficult to accomplish in traditional regression analysis, which calculates each dependent variable individually and fails to take into account the roles of other types of dependent variables. Structural equation modeling allows for the inclusion of measurement error in the independent and dependent variables. Structural equation modeling simultaneously

estimates the factor structure and the relationship between the factors, that is, it simultaneously performs analytical tests of the relationship between the latent variables and the observed variables, obtaining the factor loadings and also the relationship between the latent variables, also known as the path coefficients.

In addition to this, the measurement model of structural equation modeling has greater flexibility to accommodate an indicator subordinate to multiple factors, as well as a model that accommodates higher-order factors. This modeling idea integrates factor analysis and pathway analysis, which consists of two parts, the measurement model and the structural model. Observed variables are concrete data obtained through interviews or other means of investigation, and processed survey scale data are generally used in research; structural variables are variables that cannot be directly observed, similar to abstract factors and concepts. Its strength lies in the quantitative study of the interaction between multiple variables, especially for abstract concepts that are difficult to measure directly, the structural equation modeling technique can more fully reflect the factor information and influence it contains.

In this study, AMOS data analysis software was used for structural equation modeling. It explores the mechanism of the relationship between curriculum system, penetration integration, professional resources, supportive atmosphere and college students' psychology of employment, which is hypothesized to be constructed in this study.

Structural equation modeling includes latent variables and measurement variables, so when performing the operation of structural equation modeling, the statistical results of the scales and other contents should be firstly categorized and classified as measurement variables, and the abstract contents such as dimensions and concepts should be generalized and classified as latent variables. A model that expresses the relationship between a latent variable and its corresponding observed variables is called a measurement model. The mathematical representation of the measurement model is:

$$X = \Lambda X \zeta + \delta \tag{1}$$

$$Y = \Lambda Y \eta + \varepsilon \tag{2}$$

In the above equation, η and ζ represent latent variables, which refer to variables that are not directly observable but can be estimated from multiple measurable variables; X and Y are directly observable indicators; ΛX and ΛY are standardized regression coefficient matrices describing the loading relationships between the observed indicators and the latent variables; The δ and ε are then the measurement error matrices.

Latent variables in structural models generally include endogenous and exogenous latent variables, where endogenous latent variables refer to latent variables that are affected by other latent variables, and exogenous latent variables are latent variables that are measured only by observational indicators.

The structural equation describing the relationship between latent variables is expressed as:

$$f = \beta f + \delta\zeta + e \tag{3}$$

where: f denotes the endogenous latent variable and ζ denotes the exogenous latent variable; β is the path coefficient of the interactions between the endogenous latent variables; δ is the path coefficient of the influence of the exogenous latent variable on the endogenous latent variable; and e is the vector of residuals.

2.3.2 Structural equation modeling steps

The steps of structural equation modeling are shown in Figure 1 and include the following five points.

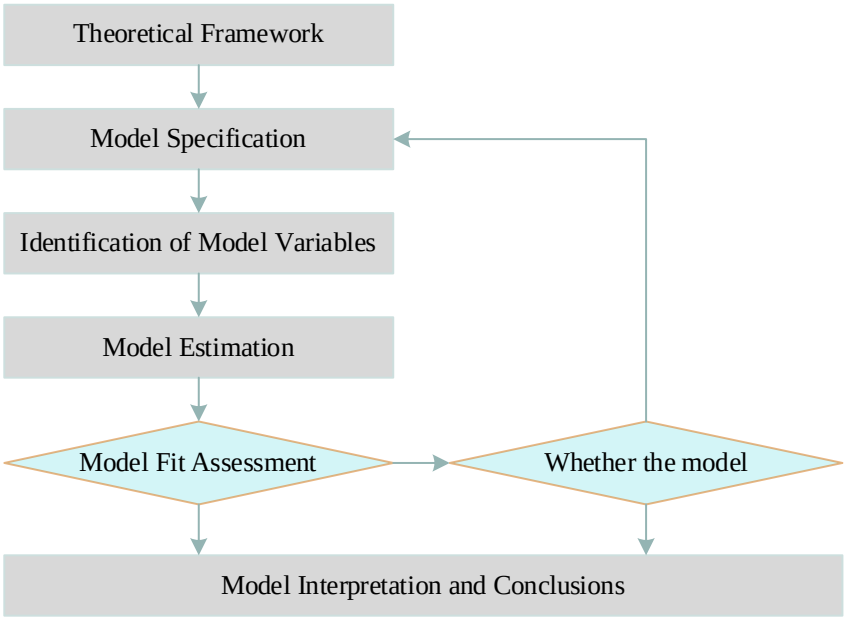

Figure 1: The steps of the structural equation model

(1) Sorting out existing theories of knowledge to form a causal model of the relationships between a set of variables through reasoning and hypothesizing. In other words, the causal relationships between variables can be clearly represented by a path diagram.

(2) Model identification is an essential consideration when setting up a model. If the previously anticipated hypothetical model itself is not recognizable, a unique estimate of each free parameter of the system cannot be obtained.

(3) Estimates of the fixed and free parameters from the model estimation are substituted into the structural equations to derive the variance covariance matrix so that each element of the matrix is as close as possible to the corresponding element in the variance covariance matrix of the observed variables in the sample. The most commonly used estimation methods are the great likelihood method and the generalized least squares method.

(4) The evaluation of the model is conducted by testing the fit of the proposed model to the sample data within the context of available evidence and theory. The metrics of the overall fit of the model mainly include the goodness-of-fit index, the modified fit index, the root-mean-square residual, etc. The t value can be used to evaluate the estimated values of each parameter of the model. The evaluation indexes of single model parameters include standardized residuals, correction indexes and so on.

(5) Model correction is to improve the fit of the initial model. When the attempted initial model cannot fit the observed data, i.e., when this model is rejected by the data, the model needs to be corrected and then tested with the same set of observed data.

3 Sample statistics and reliability tests

The main objective of this chapter is to ensure that the measurement instruments used in the study are reliable and valid. It starts with understanding the data sources and structure by depicting the socio-demographic characteristics of the sample; and analyzing the reliability and validity of the scales used.

3.1 Statistical analysis of socio-demographic characteristics

The basic descriptive statistical analysis of the data of 408 samples collected by the questionnaire was carried out, and systematic generalization and summarization were carried out to form a more intuitive understanding of the basic situation of the data of the survey samples, so as to carry out a later analysis of the differences in the characteristics of the variables. Figure 2 illustrates the demographic characterization of the 408 samples.

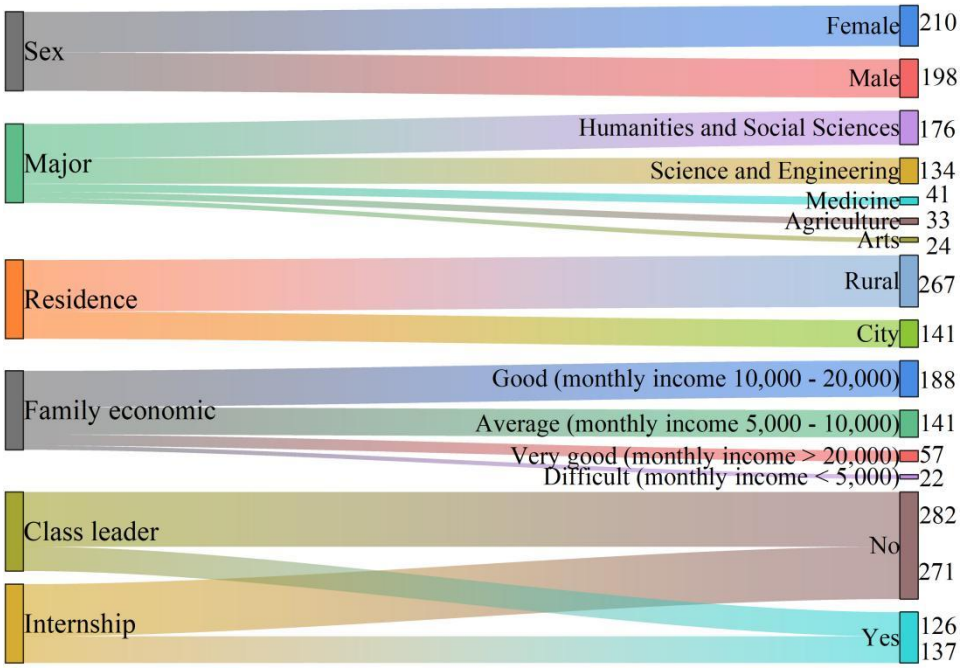

Figure 2: Analysis of demographic characteristics of 408 samples

In terms of gender, the sample was evenly distributed, with 198 male students and 210 female students. In terms of professional background, students of humanities and social sciences (43.14%) and science and technology (32.84%) predominate, with a combined total of more than three-quarters. Medical, agricultural and art students also accounted for a certain proportion, so the sample has a diversity of disciplines. In the distribution of places of origin, there are 267 students from rural areas, accounting for 65.44%, while urban students account for 34.56%. Most of the students, 80.64% of them, are from families with “good” and “average” financial status, and their monthly family income is between 5,000 and 20,000 yuan. The number of students with internship experience is 137, and the number of students who have served as student leaders is 126. There may be differences in employment psychology and access to resources between these two groups, providing an alternative entry point for subsequent differential analysis.

3.2 Reliability and Validity Analysis

3.2.1 Reliability analysis

The purpose of reliability analysis is to test the reliability of the items in the scale, which is an important indicator of the credibility of the overall questionnaire. Currently, the coefficient for evaluating the reliability of a scale is mainly Cronbach's α coefficient, and it is usually considered that α>0.7 indicates that the internal consistency among the items is good and the reliability is high.

In this study, SPSS26.0 software was used to analyze the reliability of the 24 items of college students' mental health education and the 17 items of college students' employment psychology scale, and its specific reliability analysis is shown in Table 2. Among them, the Cronbach's α of the dimensions of the mental health education scale is in the middle of 0.858-0.908, and the overall Cronbach's α coefficient is 0.956, which indicates that the internal consistency of the established mental health education scale is better, and it has good reliability. The Cronbach's α coefficients of the dimensions of employment mental toughness, employment anxiety level, employment self-efficacy and clarity of career decision-making in the Employment Psychology Scale for college students were 0.858, 0.912, 0.898 and 0.881, respectively, and the overall coefficient of the Employment Psychology Scale was 0.947, which was greater than 0.7, indicating that the reliability of the scale was high.

Table 2: Reliability analysis of the scales

		Item Number	Dimension Cronbach's α	Total Cronbach's α
Mental Health Education	Curriculum system	6	0.876	0.956
	Infiltration and integration	6	0.885	
	Professional resources	7	0.858	
	Supportive atmosphere	5	0.908	
Employment Psychology of College Students	Employment psychological resilience	4	0.858	0.947
	Employment anxiety level	6	0.912	
	Employment self-efficacy	4	0.898	
	Clarity of career decision-making	3	0.881	

3.2.2 Validity analysis

The purpose of validity analysis is to test the validity of the items in the scale, and in this study, SPSS26.0 and AMOS24.0 software were used to conduct factor analysis in order to test the structural validity of the scale. It is generally accepted that when the scale satisfies KMO > 0.7 and P = 0.000 in the Bartlett's spherical test, it indicates that the correlation between the items is strong and can be factor analyzed. The results of KMO and Bartlett's spherical test for the two scales are shown in Table 3.

Table 3: The results of KMO and Bartlett's sphericity test

KMO		Mental Health Education Scale	College Students' Employment Psychology Scale
Bartlett Spherical test	χ^2	0.971	0.963
	Df	27438.108	16215.726
	Sig.	0.000	0.000

The KMO value of the Mental Health Education Scale was 0.971, and the KMO value of the Psychology of Employment Scale for College Students was 0.963, and the Bartlett's spherical test for both scales reached the level of significance (sig.=0.000), which indicated that the scales fulfilled the requirements for further factor analysis.

3.2.3 Exploratory factor analysis

The component matrices of mental health education and college students' employment psychology are shown in Tables 4 and 5, respectively. The 24 question items of the Mental Health Scale can be summarized in nearly the first four factors, and the cumulative variance explained by the four factors is 87.049%, and the eigenvalues are all greater than 1, indicating that the extracted principal components contain most of the information on mental health education. The 17 measurement items of the College Mental Health Scale can be explained by three factors, and the cumulative variance explained by the first three factors is 73.963%, and the factor loadings of each item are greater than 0.5.

Table 4: Component Matrix of Mental Health Education

	Factor1	Factor2	Factor3	Factor4
CS1		0.684		
CS2		0.669		
CS3		0.702		
CS4		0.659		
CS5		0.674		
CS6		0.809		
II1			0.729	
II2			0.794	
II3			0.738	
II4			0.666	
II5			0.697	
II6			0.698	
PR1	0.758			
PR2	0.662			
PR3	0.751			
PR4	0.736			
PR5	0.786			
PR6	0.669			
PR7	0.675			
SA1				0.764
SA2				0.697
SA3				0.735
SA4				0.717
SA5				0.703
Eigenvalue	12.382	6.193	3.848	1.173
Variance explained/%	42.273	22.176	13.382	5.218
Cumulative explained quantity/%	42.273	64.449	77.831	83.049

Table 5: Component Matrix of College Students' Employment Psychology

	Factor1	Factor2	Factor3
EPR1			0.693
EPR2			0.657
EPR3			0.729
EPR4			0.718
EA1		0.755	
EA2		0.674	
EA3		0.694	
EA4		0.678	
EA5		0.783	
EA6		0.808	
ESE1	0.738		
ESE2	0.788		
ESE3	0.812		
ESE4	0.867		
CCD1	0.699		
CCD2	0.741		
CCD3	0.747		
Eigenvalue	10.327	5.175	2.102
Variance explained/%	31.489	24.193	18.281
Cumulative explained quantity/%	31.489	55.682	73.963

3.2.4 Validation factor analysis

In order to ensure the rigor of the scale structure, after the exploratory factor analysis was conducted to extract the main components of the scale, AMOS 24.0 software was used to conduct the validation factor analysis to analyze the fit of the data in order to determine whether the dimensional model of the scale was valid. The RMR, GFI, AGFI, NFI, CFI, and TLI were mainly selected as evaluation criteria to explore the model fit, and the model fit parameters of the validation factor analysis are shown in Table 6.

Table 6: Fitting parameters of the confirmatory factor analysis model

	Mental Health Education Scale	College Students' Employment Psychology Scale
χ^2	2114.256	1602.216
df	408	408
χ^2/df	5.182	3.927
RMR	0.043	0.038
GFI	0.935	0.966
AGFI	0.917	0.925
NFI	0.961	0.945
CFI	0.963	0.938
TLI	0.954	0.947

The X^2/df of the Mental Health Education Scale and the College Employment Psychology Scale were 5.182 and 3.927, respectively, which were higher than the lenient threshold criterion of 3, and did not conform to the acceptable model; however, due to the large sample size of the present study, there might be a situation where the chi-square degrees of freedom ratio could

not satisfy the data fit, and the hypothetical model could not be completely rejected by considering this ratio alone. Other key indicators such as GFI (0.935/0.966), NFI (0.961/0.945), CFI (0.963/0.938), and TLI (0.954/0.947) all exceeded the optimal criterion of 0.9, i.e., the four-factor structure of Curriculum System, Penetration and Integration, Professional Resource, and Supportive Atmosphere preset in the Mental Health Education Scale, as well as the four-factor structure of College Students' The four-dimensional structure of mental toughness and anxiety level covered by the Employment Psychology Scale were well supported by the data, and the scale had reliable structural validity.

4 Results of empirical analysis

It then enters the stage of revealing the current situation, testing the mechanism and exploring the application. Based on the current mental health education perceived by college students and the psychology of employment experienced by college students, we explore the real situation and the correlation between the two. Secondly, structural equation modeling is constructed and tested to visualize the causal paths and strengths of each variable.

4.1 Analysis of the current situation of university students' mental health education and employment psychology

The study analyzed the current status of mental health education and employment psychology of 408 graduating college students as shown in Figures 3 and 4.

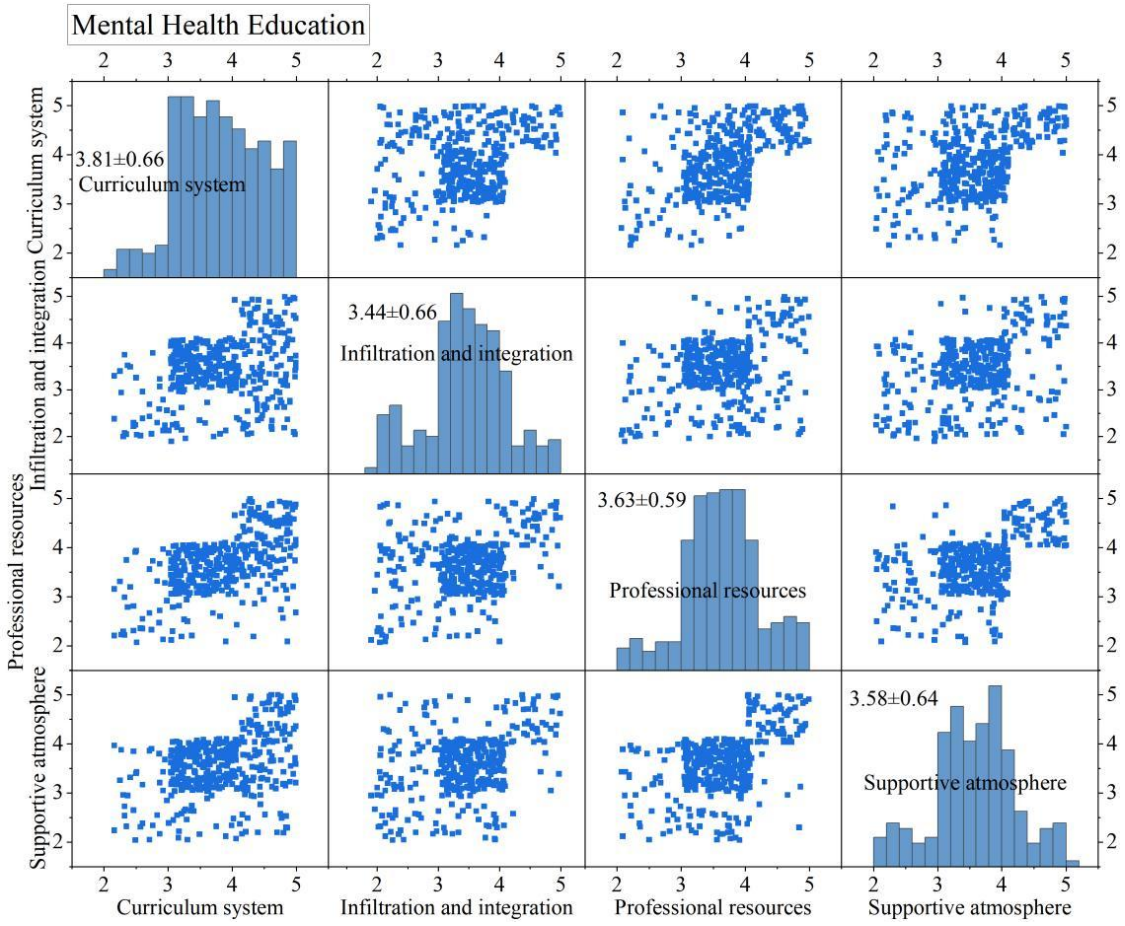

Figure 3: Analysis of the Current Situation of Mental Health Education for Students

Students' evaluation of the school's mental health-related work is at a medium-high level, with an overall mean score of 3.61±0.71. Among them, the mean score of 3.81±0.66 was obtained for the dimension of curriculum system, and the histogram showed that the scores were mostly 3 or more, which indicated that students generally recognized the quality of mental health-related courses offered by the school, and the degree of participation and practicability were relatively positively evaluated. The dimensions of professional resources and supportive atmosphere received ratings of 3.63±0.59 and 3.58±0.64, respectively, with scores mostly clustered in the middle range of 3-4 points of “generally satisfied”-“relatively satisfied”. The penetration and integration dimension has the lowest score of 3.44±0.66, and the proportion of low scores below 3 has increased, which means that the integration of mental health elements into the work of instructors, professional classes and campus cultural activities still needs to be further strengthened.

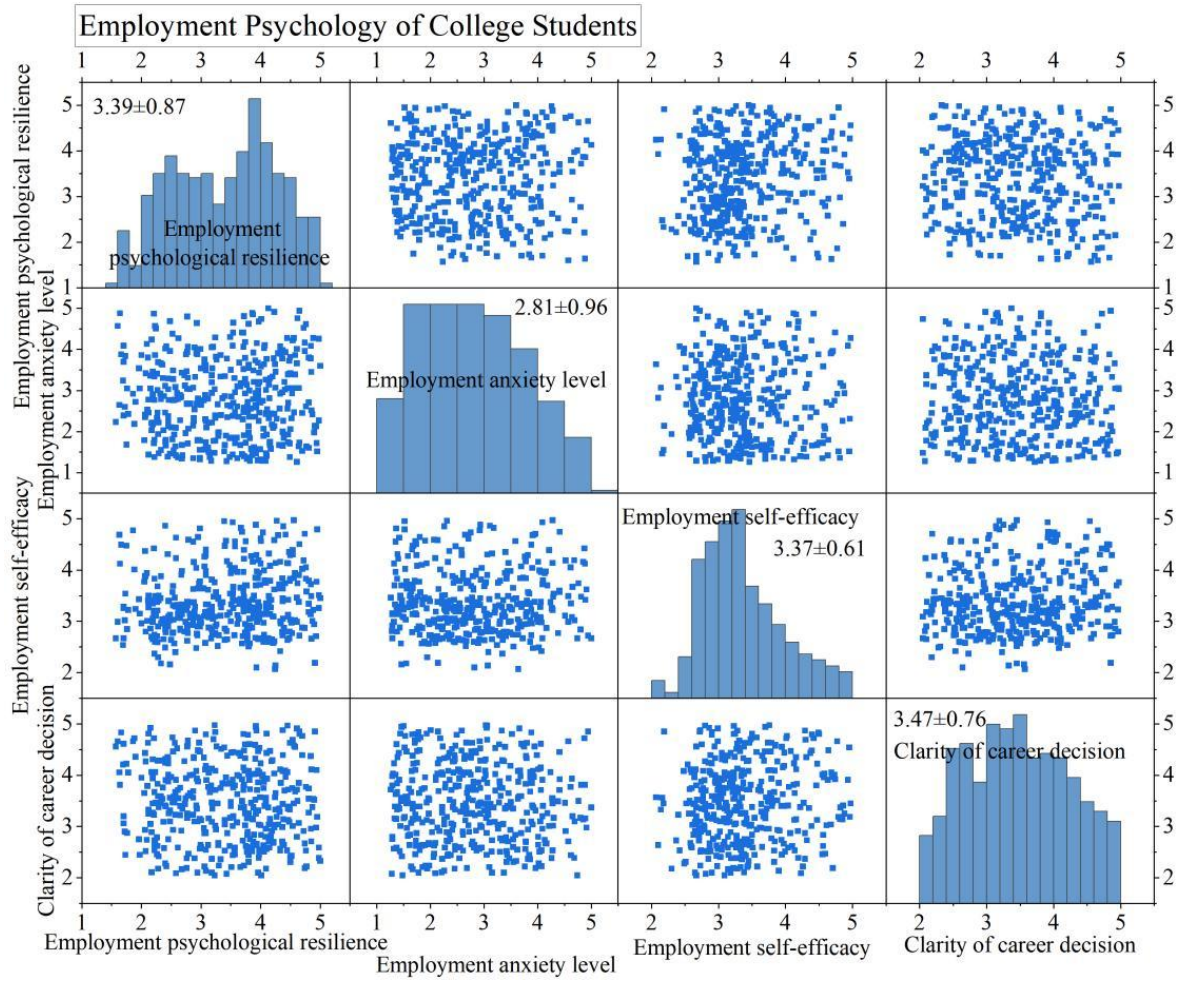

Figure 4: Analysis of the Employment Psychology of College Students

Look at the psychological part of college students' employment, in which the level of employment anxiety is a reverse scoring indicator, the lower the score represents the less anxiety. The mean score of employment anxiety of the research sample graduates is 2.81±0.96, focusing on the histogram can be seen that the distribution of students is relatively even, that is, there is a dip between no anxiety at all and very anxiety, the overall view of the graduates group is still generally higher than the medium level of employment anxiety. In terms of positive psychological qualities, the scores of employment mental toughness, employment self-efficacy and career decision clarity are slightly higher than the theoretical median value of 3,

respectively 3.39 ± 0.87, 3.37 ± 0.61 and 3.47 ± 0.76. Overall, graduates, although anxious in the face of employment, retain a certain degree of clarity of decision-making and mental toughness.

4.2 Analysis of gender differences in mental health education and employment psychology among university students

Using the gender of male and female students as a variable, the 408 survey samples were differentiated in terms of gender in mental health education and employment psychology respectively, and the results are shown in Figures 5 and 6.

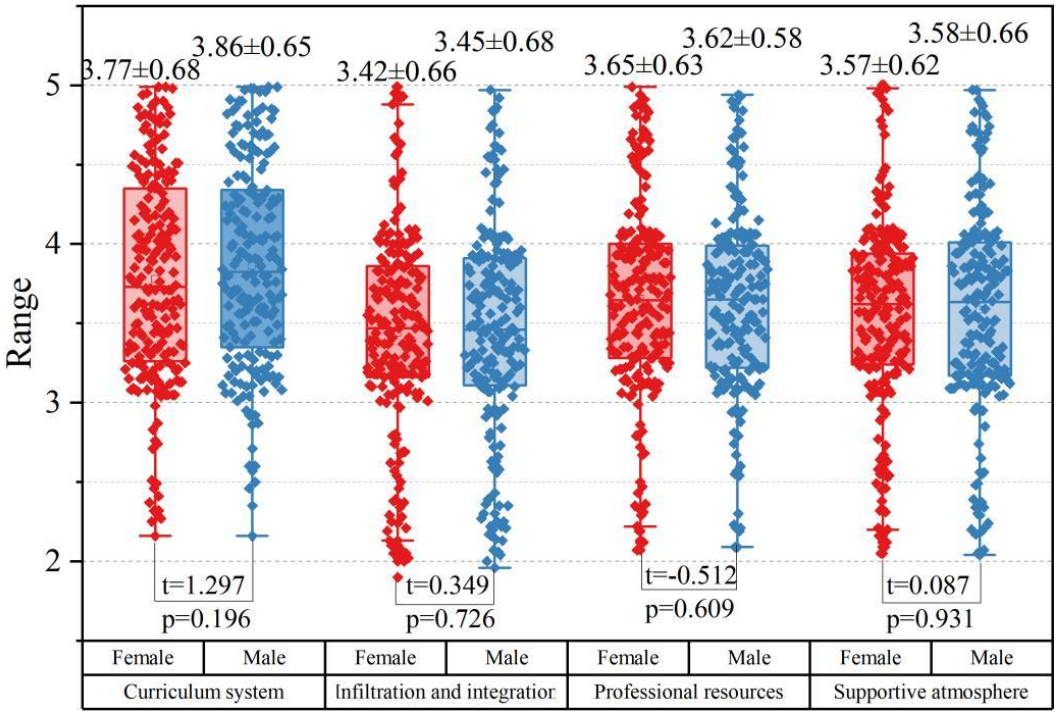

Figure 5: Gender Differences in Mental Health Education among College Students

No statistically significant difference was shown between male and female students in terms of their experience and evaluation of mental health education. The p-values of the four dimensions were 0.196, 0.726, 0.609 and 0.931 respectively, which were all greater than 0.05. That is, both male and female students were similar in their feelings and scores about the curriculum, penetration methods, resources and supportive atmosphere of mental health education in schools. The relevant psychological services currently provided by colleges and universities have good generalizability at the gender level, and there is no obvious tendency or experience gap.

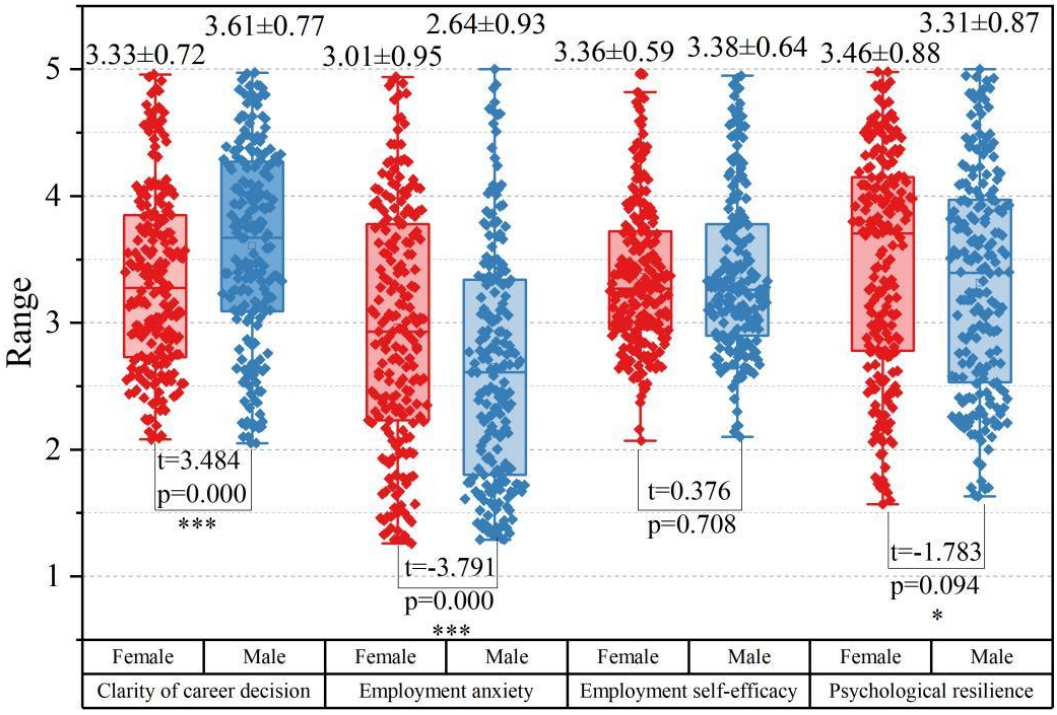

Figure 6: Gender Differences in Employment Psychology among College Students

However, in terms of employment psychology, gender differences bring about differences in some of the indicators. Firstly, the most obvious part of employment anxiety, the anxiety score of girls is 3.01±0.95, significantly higher than that of boys, which is 2.64±0.93, and there are significantly more girls than boys in the high scores of 3-5. That is, in the stage of approaching graduation, the employment pressure, worry and tension experienced by the female group is more intense than that of the male group on the whole. There is also a significant difference in the clarity of career decision-making, t=-3.484, p=0.000. The clarity of career planning for male students is 3.61±0.77, which is higher than that of female students (3.33±0.72), i.e. male students have a clearer perception and sense of direction when facing career choices. Employment mental toughness likewise differed, t=-1.783, p=0.094, significant at the 0.1 level. The mean score of 3.46 for female students was slightly higher than that of 3.31 for male students, i.e., female students showed a slightly stronger trend in mental toughness. As for employment self-efficacy, the scores of male and female students were 3.38±0.64 and 3.36±0.59 respectively, t=0.376, p=0.807, which did not reach the level of significant difference.

4.3 Analysis of the correlation between university students' mental health education and employment psychology

The analysis of the correlation between college students' mental health education and employment psychology is shown in Figure 7.

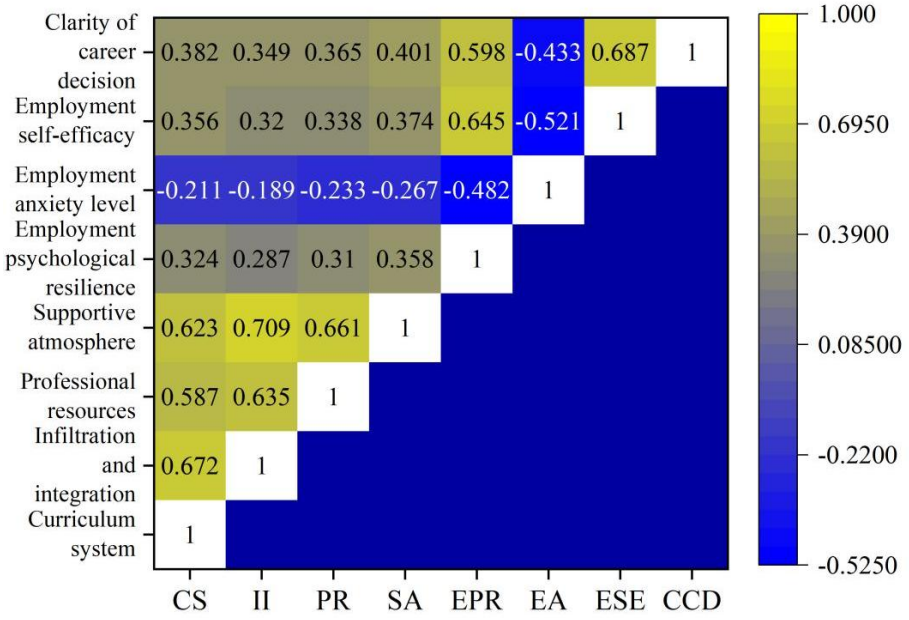

Figure 7: Analysis of the Mental Health Education and Employment Psychology

All four dimensions within mental health education showed significant moderate to strong positive associations, with correlation coefficients r ranging from 0.587 to 0.709. The four dimensions within employment psychology also showed moderate to high positive associations between positive psychological traits, with correlation coefficients ranging from 0.598 to 0.687 for employment psychological resilience, self-efficacy, and clarity of career decision-making. The level of employment anxiety as a negative indicator, on the other hand, showed a significant moderate negative correlation with the other three positive dimensions, with r ranging from -0.433 to -0.521.

There is also a significant positive correlation between the two main segments of mental health education and employment psychology, except that the strength of the correlation is low to moderate, with a correlation coefficient r between the positive psychological dimensions and the 4 variables of mental health education ranging from 0.287 to 0.401. The level of employment anxiety and its are also both significantly negatively correlated, r between -0.189 and -0.267, although the correlation is weak, but the direction is consistent. The correlation analysis lays the empirical foundation for the core research hypothesis that mental health education can have a positive impact on employment psychology. The next step is to analyze the possible causal pathways and mechanisms behind the correlations with the help of more powerful structural equation modeling.

4.4 Structural modeling and test analysis

4.4.1 SEM modeling

Based on the data obtained from the above 408 questionnaires. Taking the four factors of college students' mental health education curriculum system, penetration and integration, professional resources and supportive atmosphere as exogenous latent variables; taking the four dimensions of college students' psychological toughness in employment, employment anxiety level, employment self-efficacy and clarity of career decision-making as endogenous latent variables; and taking the 12+4 total of 16 measurements in the questionnaires as observational variables, the modeling was carried out by using the AMOS 7.0 software.

Firstly, based on the MI correction, the model fit was improved by releasing the paths, and

the path selection was corrected one by one according to the size of the MI value output by AMOS software and the actual situation of the relationship between variables. Since the MI values of the mutual influence relationship of permeable integration and supportive atmosphere and the mutual influence relationship of curriculum system and professional resources are 23.198 and 18.271 respectively, the value size meets the need for correction, and there is a high degree of correlation between the apparent variables (Figure 7 shows that the correlation coefficients are 0.709 and 0.587, respectively), these two paths are added to the model. Then, based on the existing paths for correction, according to the results of the software estimation, the paths with low significance levels were screened out, and the residual terms e2 and e3, e7 and e8, e13 and e14, and other paths with P-values much larger than 0.05 were therefore removed from the model. The structural equation model obtained by constant correction and re-operation of the model is shown in Figure 8, and its model coefficient estimates are shown in Table 7.

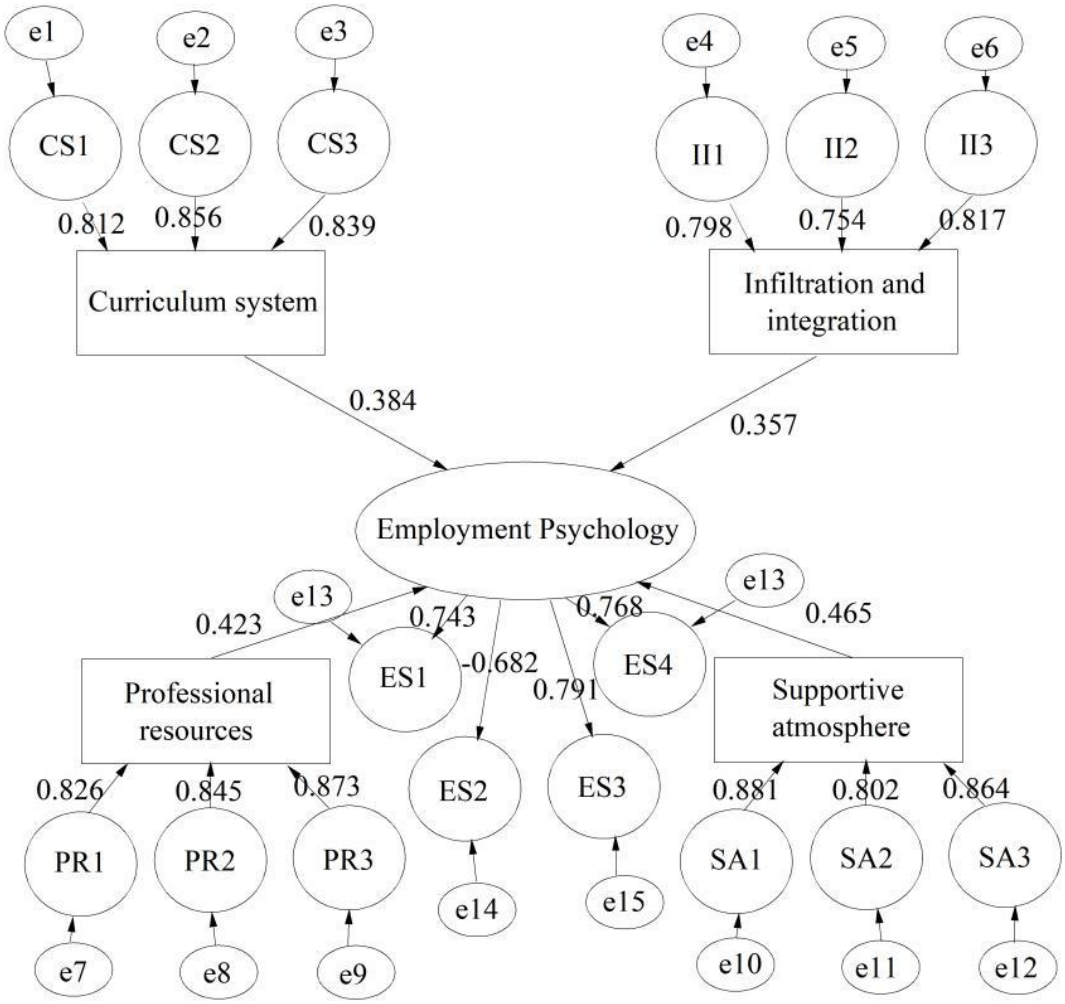

Figure 8: The revised structural equation model

Table 7: Estimation results of model coefficients

	Non-standard path coefficient	Standard path coefficient	S.E	C.R	P
Curriculum system → Employment psychology	0.372	0.384	0.072	5.167	***
Integration and permeation → Employment psychology	0.341	0.357	0.068	5.015	***
Professional resources → Employment psychology	0.408	0.423	0.074	5.514	***
Supportive atmosphere → Employment psychology	0.447	0.465	0.076	5.882	***
Participation rate of mental health courses → Curriculum system	0.805	0.812	0.048	16.771	***
Practicality of course content → Curriculum system	0.849	0.856	0.045	18.867	***
Quality of psychological courses → Curriculum system	0.832	0.839	0.046	18.087	***
Psychological counseling by advisors → Integration and permeation	0.791	0.798	0.051	15.51	***
Integration of psychological elements in professional courses → Integration and permeation	0.746	0.754	0.053	14.075	***
Campus mental health cultural activities → Integration and permeation	0.809	0.817	0.049	16.51	***
School psychological counseling center → Professional resources	0.838	0.845	0.047	17.83	***
Online psychological resource platform → Professional resources	0.818	0.826	0.048	17.042	***
Professionalism of psychological counseling → Professional resources	0.866	0.873	0.044	19.682	***
School's emphasis on mental health → Support atmosphere	0.874	0.881	0.043	20.326	***
Activity enthusiasm of psychological association clubs → Support atmosphere	0.795	0.802	0.050	15.9	***
Openness of psychological support atmosphere → Support atmosphere	0.857	0.864	0.045	19.044	***
Employment psychology → Employment psychological resilience	0.735	0.743	0.052	14.135	***
Employment psychology → Employment anxiety level	-0.668	-0.682	0.058	-11.517	***
Employment psychology → Employment self-efficacy	0.783	0.791	0.049	15.98	***
Employment psychology → Clarity of career decision-making	0.760	0.768	0.051	14.902	***

In terms of the overall impact of the four dimensions of mental health education on employment psychology, the modified model confirms that they all have a significant positive predictive effect on employment psychology. The highest path coefficients were found for

Supportive Climate at 0.465 and Professional Resources and Curriculum System at 0.423 and 0.384. In contrast, Penetrating Integration had a slightly weaker impact with a standardized path coefficient = 0.357 and C.R = 5.015.

Looking at the measurement modeling component, i.e., how each latent variable was measured by the specific question items, the factor loadings of all observed variables on their corresponding latent variables were quite high, ranging from 0.754 to 0.881. Echoing Table 4, i.e., the specific questions used to measure abstract concepts such as curriculum system and supportive atmosphere are very accurate and valid, the questionnaire is reliable and efficient.

The model also clearly reveals how the core latent variable of Employment Psychology is concretely represented, and the direction of its path coefficients for the four Employment Psychology observables is fully consistent with theoretical expectations. Strong positive effects were shown on Employment Psychological Toughness (0.743), Employment Self-Efficacy (0.791) and Career Decision Clarity (0.768). On the other hand, it showed a significant negative effect on employment anxiety level (-0.682).

The absolute values of the Critical Ratio C.R. for all paths of the modified model were much larger than the significance threshold of 1.96 and the p-values were all labeled ***, i.e., significant at the 0.001 level.

4.4.2 Testing of the model

Further, the psychological SEM model of college students' employment based on mental health education was examined and the results of its fit are shown in Table 8.

Table 8: The fitting results of the SEM model

Statistical test	Standard value	Test result
χ^2	Smaller	802.536
df	Bigger	408
χ^2/df	<3	1.967
NFI	>0.9	0.956
AGFI	>0.9	0.921
GFI	>0.9	0.952
CFI	>0.9	0.963
NFI	>0.9	0.968
TLI	>0.9	0.977
SRMR	<0.08	0.0371
RMSEA	<0.08	0.0283

The corrected model and the survey data have reached a very satisfactory level of match, and the core indicators have almost fully met the standards, indicating that the theoretical path of “four dimensions of mental health education→employment psychology→specific psychological performance” proposed by the study has been strongly supported by the data. The absolute fit index is excellent, and the ratio of chi-square to degrees of freedom (χ^2/df) is 1.967, which is not only far below the lenient criterion of 3, but also below the more stringent threshold of 2.0, indicating that the covariance structure between the model and the data is very small. The two approximation error indices, the RMSEA value of 0.0283 and the SRMR value of 0.0371, are all much better than the critical criterion of 0.08, and even reach the level of excellent (<0.05), indicating that the residuals of the model are very well controlled, and the approximation error of the model to reality is extremely low. In terms of relative fit index and value-added fit index, the model also performs well. The values of NFI, GFI, AGFI, CFI and

TLI are distributed between 0.921 and 0.977, all exceeding the 0.9 baseline.

5 Conclusion

This study proposes a multi-level college students' employment psychology support network construction plan, which emphasizes atmosphere creation and resource support as the core, and curriculum teaching and activity penetration as the two wings, integrating dispersed educational elements into a synergistic support system, and providing an efficient practical roadmap for colleges and universities to improve the quality of employment psychology services.

Students' evaluation of the curriculum system is the highest, with a mean score of 3.81, but the path coefficient of its direct influence on employment psychology is only 0.384. On the other hand, there are significant gender differences in employment psychology among graduates, with female students being significantly higher than male students in the level of employment anxiety, with mean scores of 3.01 and 2.64, but significantly lower than male students in clarity of career decision-making, with scores of 3.33 and 3.61. The suggestion is that while the providing universal support, precise psychological empowerment is needed for different gender groups.

Structural equation modeling also reveals that mental health education can achieve the dual goals of empowerment and reduction of burden by enhancing the psychology of employment. The positive kernel of employment psychology can significantly increase students' employment mental toughness (factor loading 0.743), employment self-efficacy (0.791), and clarity of career decision-making (0.768). It was also effective in reducing students' employment anxiety levels (-0.682). Correlation analyses also showed earlier that there was a stable negative correlation with r ranging from -0.189 to -0.267. It corresponds to the reality of the current dilemma of graduates' generalized anxiety (mean score of 2.81).

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