

FACTORS AFFECTING THE COLLEGE STUDENTS MENTAL HEALTH IN DAZHOU CITY, CHINA

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Abstract This study investigated the influencing factors of college students mental health, including five variables: family environment, academic atmosphere, social pressure, personality traits, and psychological resilience. A questionnaire survey was conducted on 316 participants, and a structured questionnaire with 60 items was developed. Content validity was assessed by five experts using the Item Objective Consistency Index (IOC), with scores for all items ranging from 0.6 to 1.00. Reliability analysis confirmed high internal consistency, with Cronbach's α coefficients ranging from 0.918 to 0.953. Data collection was conducted online using questionnaires, and the collected feedback data was analyzed using descriptive statistics, Pearson correlation coefficients, and multiple regression analysis. The following conclusions were drawn:

Correlation and regression analyses showed that psychological resilience ($\bar{x}=3.41$, $s.d=1.24$) and family environment ($\bar{x}=3.40$, $s.d=1.19$) had the highest relative scores, indicating that these two factors have a more significant impact on college students mental health. Academic atmosphere ($\bar{x}=3.39$, $s.d=1.16$), social pressure ($\bar{x}=3.39$, $s.d=1.20$), and personality traits ($\bar{x}=3.36$, $s.d=1.21$) were all considered positively. The correlation coefficient $r=0.847$, indicating a high linear correlation between these factors and college students mental health. The coefficient of determination $r^2=0.717$, suggesting that the independent variables collectively explained 71.7% of the variance in mental health. The regression model showed that all five factors had a significant positive impact on college students mental health. Based on the findings regarding family environment ($\beta=0.742$, $p<0.01$), academic atmosphere ($\beta=0.701$, $p<0.01$), social pressure ($\beta=0.634$, $p<0.05$), personality traits ($\beta=0.679$, $p<0.05$), and psychological resilience ($\beta=0.798$, $p<0.01$), relevant suggestions are provided to contribute to future research.

Keywords: Family environment, Academic atmosphere, Social pressure, Personality traits, Mental health.

1. INTRODUCTION

Society is undergoing rapid development and transformation, with the mental health screening pass rate among college students showing a slight annual decline. College students form the foundation of national development and prosperity, making their mental health status a focal point of societal concern. Numerous research reports indicate that the detection rate of mental health issues among college students is not only higher than that of the general population but also exhibits an increasing trend year by year. Many domestic and international studies report that the prevalence of psychological issues such as depression and anxiety among college students

is becoming more frequent and worsening, a phenomenon associated with escalating academic pressure and increasingly complex

interpersonal relationship management (Xu & Li, 2025). This study investigates the psychological complexity and diversity among college students, examines the interplay of influencing factors, and identifies the unique differential impacts of individual cognitive, emotional, and behavioral dimensions, as well as family, school, and social environmental factors, on student performance across genders, academic years, and disciplines. The findings provide robust support for developing effective prevention strategies, seamlessly integrating

The sample size calculation is divided into two steps: first, the initial sample size is calculated using the infinite population formula, and then the final sample size is determined by applying the finite population correction formula.

The formula for calculating the sample size of simple random sampling under the infinite population is:

$$n = \frac{Z^2 \times p \times (1-p)}{E^2}$$

Substituting the above parameters into the formula, we get:

$$n = \frac{1.96^2 \times 0.5 \times (1-0.5)}{0.05^2} = 384.16 \approx 385$$

Finite population sample size adjustment
When the population size is limited, the sample size is adjusted using the finite population correction formula, as follows:

$$n = \frac{n}{1 + \frac{n-1}{N}}$$

Substitute the initial sample size n and N into the formula:

$$n = \frac{385}{1 + \frac{385-1}{1759}} \approx 316$$

In conclusion, the final sample size of this study was determined to be 316 cases. Through simple random sampling, 316 research subjects were selected from 1,759 college students at the university for questionnaire surveys.

Table 6.1 Overall and Sample Distribution of College Students

Grade Level	Population	Proportion (%)	Sample
sophomore	440	25.0%	79
freshman	400	22.78%	72
junior	457	25.95%	82
senior	462	26.27%	83
Total	1759	100	316

The sampling distribution shows that the number of seniors is 83, accounting for 26.27%; juniors are 82, accounting for 25.95%; sophomores are 79, accounting for 25.0%; and freshmen are 72, accounting for 22.78%. Among them, seniors account for the highest proportion at 26.27%, while freshmen account for the lowest at 22.78%.

Table 6. 2 Demographic characteristics, frequency and percentage

category	option	frequency	percentage (%)
Sex :	Man	159	50.32
	Woman	157	49.68
	Total	316	100.00
Professional category:	Science	51	16.14
	Engineering	45	14.24
	Economics	38	12.03
	Literature	37	11.71
	Education	36	11.39
	Law	32	10.13
	Medicine	31	9.81
	Agriculture	27	8.54
	Arts	19	6.01
	Total	316	100.00

The gender frequency analysis revealed 159 male cases (50.32%) and 157 female cases (49.68%), with males constituting the highest proportion (50.32%) and females the lowest (49.68%). By discipline category, the distribution showed: 51 cases (16.14%) in science, 45 (14.24%) in Engineering, 38 (12.03%) in Economics, 37 (11.71%) in Literature, 36 (11.39%) in Education, 32 (10.13%) in Law, 31 (9.81%) in Medicine, 27 (8.54%) in Agriculture, and 19 (6.01%) in Arts. Science ranked highest with 16.14%, while Arts had the lowest frequency at 6.01%.

6.3 RESEARCH TOOL

Basic information includes gender, grade, and major (Engineering, Science, Literature, Economics, Law, Education, Medicine, Agriculture, Art, Others), which collectively influence an individual's growth and development.

Measurement of Influencing Factors, this study used a structured questionnaire adapted from mature scales both domestically and internationally, with adjustments made to the items to suit the characteristics of university students. The questionnaire was organized along five dimensions: family environment, academic atmosphere, social pressure, personality traits, psychological resilience, and the dependent variable: mental health of college Students. All items were scored using a five-point Likert scale Strongly Disagree (1), Disagree (2), Neutral (3), Agree (4), Strongly Agree (5).

The items for the mental health level of university students (standard variable) were adapted from the General Health Questionnaire (GHQ-12) developed by Goldberg et al. (1997). This scale is widely used to assess psychological distress and mental health status, including dimensions such as anxiety, depression, and social functioning, and has good reliability and validity among university students.

Family Environment, the family environment dimension is adapted from the Family Environment Scale (FES) developed by Moos and Moos (1981). This scale encompasses core dimensions such as intimacy, conflict, and independence. In this study, focusing on the interaction patterns between college students and their families, we retained items related to intimacy, emotional expression, and conflict to reflect the long-term impact of family environment on individual mental health.

Academic Atmosphere, the academic atmosphere dimension is adapted from the College Students Environmental Perception Scale (CES) developed by Pascarella and Terenzini (1991). This scale focuses on elements such as academic support, peer interaction, and teacher feedback. In this study, the item statements were modified to align with the classroom and campus culture of Chinese universities, enabling the measurement of college students' perception of the academic atmosphere at their institutions.

Social Pressure, the social pressure dimension was assessed using the Perceived Stress Scale (PSS-10) developed by Cohen et al. (1983). This scale evaluates the level of stress experienced by individuals over the past month, including items such as uncontrollable life events and self-efficacy, and is applicable for measuring various stressors faced by college students, such as academic, employment, and interpersonal relationships.

Personality Traits, the personality trait dimensions are based on the Brief Version of the Big Five Inventory (BFI-10) developed by Costa and McCrae (1992). This scale comprises five core dimensions: neuroticism, extraversion, openness, agreeableness, and conscientiousness. With concise items and strong reliability and validity, it effectively

measures college students' personality traits and their associations with mental health.

Psychological Resilience, the psychological resilience dimension was adapted from the Resilience Inventory (CD-RISC) developed by Connor and Davidson (2003). This scale encompasses dimensions such as resilience, optimism, and a sense of strength. In this study, items specifically designed for college students stress situations were selected to assess individuals' psychological adaptation and recovery capabilities in the face of adversity.

6.4 DATA COLLECTION AND ANALYSIS

Data collection, the random sampling method is used to randomly select the students of each grade, major and different gender as the research object group.

Based on the total research volume, 316 students were randomly selected as the sample size. An electronic questionnaire was created through an online survey platform such as Wenjuanxing, and distributed via online channels to collect data.

First, questionnaires with excessively short or long response times are excluded. Missing values are processed using mean imputation, and otherwise deemed invalid. A thorough data review is conducted to calculate Cronbach's α coefficient for quantifying internal consistency. Confirmatory factor analysis is employed to further validate the reliability and validity of the research tool, ensuring the conclusions possess strong reliability and scientific rigor.

Data analysis, Statistical analysis was conducted using SPSS, beginning with descriptive statistics to calculate the frequency, percentage, mean scores, and standard deviations of demographic variables and scale scores. Subsequently, correlation analysis was performed, with Pearson correlation analysis selected as the statistical tool to systematically examine and reveal the mutual influences and complex relationships among family environment, academic atmosphere, social pressure, personality traits, psychological resilience, and mental health variables in college students. Through this analysis, we

aimed to accurately measure the strength and direction of linear relationships between variables, thereby establishing a solid scientific basis for identifying determinants of mental health. Finally, regression analysis was conducted to precisely identify variables significantly impacting the study results, systematically investigating the degree of influence each individual variable exerts on mental health status.

7. RESULTS AND DISCUSSION

7.1 RESEARCH RESULTS

(1) Descriptive Statistics

Table 7.1 Standard Deviation, Skewness, and Kurtosis of Factors Affecting College students Mental Health

Factors	$\bar{X}$	s.d.	Skewness	Kurtosis
Family Environment	3.40	1.19	-0.88	-0.68
Academic Atmosphere	3.39	1.16	-1.00	-0.40
Social Pressure	3.39	1.20	-0.98	-0.43
Personality Traits	3.36	1.21	-0.94	-0.59
Psychological Resilience	3.41	1.24	-0.96	-0.52

Analysis of the mean, standard deviation, skewness, and kurtosis of factors influencing college students mental health revealed that family environment had the highest mean score (3.40) among the five factors, indicating its most significant impact on mental health and making it the strongest influencing factor in this study. The standard deviation (1.19) was the smallest among the five factors, suggesting relatively small differences in perceived family environment influence among different college students, with a more concentrated score distribution. The skewness (-0.88), being negative and the smallest in absolute value, indicates a slight left skewness, meaning more students perceive a higher level of family environment influence, with a relatively symmetrical distribution. The kurtosis (-0.68), negative and the largest in absolute value, indicates the flattest data distribution, fewer extreme scores, and a relatively uniform overall perception.

The academic atmosphere, with a mean score of 3.39, ranked third, indicating a moderately high level of influence on mental

health and making it an important environmental factor. Its standard deviation (1.16) was very similar to that of the family environment, with low dispersion, reflecting relatively small differences in students perceptions of the academic atmosphere. The skewness of -1.00, with its largest absolute value, indicates the most significant left skewness, meaning more students perceive the influence of a higher level of academic atmosphere. The kurtosis of -0.40, with its smallest absolute value, indicates the steepest distribution, closest to a normal distribution, with relatively few extreme values.

The social pressure score of 3.39 ranks fourth, indicating that the impact of social pressure on mental health is moderately high, but weaker than family environment and psychological resilience. The standard deviation of 1.20 indicates moderate dispersion, suggesting that students perception of social pressure varies slightly more than that of family environment and academic atmosphere. The skewness of -0.98, with its large absolute value, indicates a significant left skewness, meaning more students perceive a higher level of social pressure. The kurtosis of -0.43 indicates a relatively flat data distribution, suggesting fewer students perceive extreme stress.

The personality trait score of 3.36 is the lowest, indicating that the impact of personality traits on mental health is relatively weak, but still at a moderate level and cannot be ignored. The standard deviation of 1.21 indicates moderate dispersion, suggesting significant differences in the impact of personality traits on mental health among different students. Skewness -0.94 (negative), indicating left skewed data, meaning more students personality traits show a positive or high impact on mental health. Kurtosis -0.59 (negative), indicating a relatively flat data distribution, with fewer cases of extreme personality traits having an impact.

Psychological resilience, with a mean score of 3.41, ranks second, demonstrating that psychological resilience is an important intrinsic resource for protecting the mental health of college students, second only to family environment in its influence. The standard deviation of 1.24 is the largest among

the five factors, indicating the most significant differences in psychological resilience levels among students. Skewness - 0.96 (negative), indicating left skewed data, meaning more students possess a high level of psychological resilience. Kurtosis - 0.52 (negative), indicating a relatively flat data distribution, with fewer students exhibiting extreme levels of psychological resilience.

7.2 Correlation Analysis

(1) Regression analysis

Table 7.2 Correlation Analysis of Factors Affecting College students Mental Health

No	Hypothesis	Correlation	Standardized β	Meaning
1	H1	0.782	0.742	Support
2	H2	0.762	0.701	Support
3	H3	0.771	0.634	Support
4	H4	0.775	0.679	Support
5	H5	0.897	0.798	Support

shows that all research variables are highly positively correlated with the mental health level of college students, with correlation coefficients ranging from 0.762 to 0.897. Among them, psychological resilience H₅ has the highest correlation coefficient $r=0.897$, while H₂ academic atmosphere has the lowest $r=0.762$. Further regression tests show that the standardized β coefficients of H₁ family environment $r=0.782$, H₃ social pressure $r=0.771$, and H₄ personality traits $r=0.775$ are 0.742, 0.634, and 0.679, respectively. All hypotheses are supported by the data, verifying the positive predictive effect of each factor on the mental health of college students.

7.3 Discussion

Psychological resilience, with a mean score of 3.41, ranks second, demonstrating that psychological resilience is an important intrinsic resource for protecting the mental health of college students, second only to family environment in its influence. The standard deviation of 1.24 is the largest among the five factors, indicating the most significant differences in psychological resilience levels

among students. Skewness - 0.96 (negative), indicating left skewed data, meaning more students possess a high level of psychological resilience. Kurtosis - 0.52 (negative), indicating a relatively flat data distribution, with fewer students exhibiting extreme levels of psychological resilience.

Parents, as children's first and most important mentors, bear the responsibility of shaping correct cognitive concepts and cultivating good character. They should hold up to date educational philosophies (Liang & Shao, 2023), objectively evaluate their children's academic performance, provide beneficial advice and encouragement, avoid excessive pampering, enhance mutual understanding and respect, meet their legitimate needs, and especially emphasize cultivating their ability to independently face and solve problems, guiding them to meet challenges with a positive attitude. Effective communication and emotional connection are central to the family environment and are indispensable factors in safeguarding individual mental health.

Therefore, H1: The family environment significantly affects the mental health of college students, hypothesis H1 is valid.

The academic atmosphere is an important factor in shaping the psychological quality of college students. Improving it requires the joint efforts and active participation of all teachers and students. Deeply engaging in various campus interactive activities can create a healthy and harmonious interpersonal atmosphere, effectively promoting the comprehensive development of college students in terms of physical and mental health, and comprehensively improving their overall quality (Xu, 2025). Previous research, based on social cognitive theory, multiple regression models, and online questionnaire data, has investigated the relationship between academic atmosphere and academic passion and students learning ability (Wu & Jiang, 2024). Empirical results show that both academic passion and academic atmosphere have a positive impact on student learning.

Therefore, hypothesis H2: Academic atmosphere significantly affects college students mental health is valid.

Psychological resilience reflects an individual's ability to adapt and grow when

facing stressful environments. University students need to learn psychological adjustment and emotional control to maintain a positive mood. Previous research used the School Connection Scale, the Adolescent Psychological Resilience Scale, and the Mental Health Diagnostic Test Scale to conduct questionnaire surveys on students (Gao,2025). The results indicated that students psychological development was generally good, and school connection and psychological resilience were influencing factors for their mental health. Improving students psychological resilience can promote mental health.

Therefore, H5: Psychological resilience significantly affects the mental health of university students, and hypothesis H5 is valid.

The characteristics of personality traits and thinking patterns have a long lasting and complex impact on an individuals mental health, demonstrating a close link between psychological stability and adaptation. Previous research, based on professional theories such as social learning theory and personality psychology in psychology, as well as social role theory and cultural sociology in sociology, has focused on the mental health of college students from multiple perspectives in the humanities and social sciences (Du et al,2025). It reveals that the mechanisms by which cultural concepts, educational methods, and family cultural environments shape the psychological traits of college students differ across historical periods.

Therefore, hypothesis H4: Personality traits significantly affect the mental health of college students, is valid.

Previous research has found the impact of external social environmental factors on individual health differences (Zhang,2023). The results show that the degree of negative impact of social pressure on health varies among different socioeconomic groups, with social pressure having a greater negative impact on the health of lower socioeconomic groups.

Therefore, hypothesis H3: Social pressure significantly affects the psychological health of university students, is valid.

8. Conclusion

Family environment: The family plays a decisive role in college students mental health, especially when parents hold high expectations.

Students often face immense academic pressure, a common phenomenon in today's society. Additionally, the fast-paced lifestyle leads to limited effective communication between parents and children, significantly reducing parents' ability to promptly recognize their children's mental health issues and provide appropriate emotional support and care.

Academic atmosphere and campus culture serve as the concentrated embodiment of a schools spiritual core. They foster emotional resonance between faculty and students, guide educational direction, and significantly enhance internal cohesion while motivating group members. Creating an educational environment that is both vibrant and purpose driven fostering a positive, inclusive learning atmosphere is crucial for strengthening students sense of belonging and motivation. This approach not only improves students learning states but also promotes their mental health. Democratic, equal, and harmonious teacher-student interactions, along with fostering peer collaboration, help students develop social skills and build positive self-identity.

Social Pressure. In today's rapidly evolving society, where political, economic, and cultural developments are advancing at an unprecedented pace, students in the formative stages of their worldview, life philosophy, and value systems are profoundly influenced by these changes. As these developments progress, college students face mounting social pressures, particularly employment challenges. With job market competition intensifying, graduates not only confront new challenges in career strategies but also experience more direct and comprehensive evaluations of their personal competitiveness, inadvertently creating psychological stress.

Personality traits: Individual differences exist among students. Students with distinct personalities may develop divergent perspectives when confronted with adversity. Those exhibiting excessively negative or overly pessimistic cognitive attitudes, or even extreme negative cognitive dispositions, are

typically more susceptible to developing depression and anxiety disorders.

Psychological Resilience. Contemporary college students face multifaceted challenges, including intense academic pressure and vague career goals. These factors significantly test their psychological resilience. Many students derive their motivation from exam-oriented pressures, which often prioritize conformity to the established education system rather than personalized learning interests or long-term career aspirations. To maintain effective learning efficiency, students need clear academic direction and intrinsic motivation.

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