Research on the Relationship between College Students' Psychological Resilience and Academic Achievement

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Abstract: Against the backdrop of fierce educational competition, this study examines the link between college students' psychological resilience and academic achievement. Through stratified random sampling of 1,200 students from 10 universities, it uses the CD-RISC scale and measures academic performance by GPA, scholarships, and competition awards. Results reveal a significant positive correlation ($r = 0.42$, $p < 0.01$). Female students have higher resilience scores, and senior students outperform freshmen. Regression analysis shows resilience accounts for 14.44% of academic variance. The findings emphasize the importance of resilience in academic success and call for enhanced mental health education and personalized counseling. Longitudinal studies are suggested for causal exploration.

Keywords: psychological resilience, academic achievement, college students

1. Introduction

In the era of rapid social development and intense educational competition, college students confront multifaceted psychological pressures and academic challenges. Complex courses, numerous exams, and life transitions, including interpersonal and career uncertainties, often trigger negative emotions, with 45% of students affected, hampering learnings [1]. Psychological resilience, crucial for handling adversity, may impact academic performance. Resilient students tend to stay positive, regulate emotions, and adapt strategies, while less resilient ones may lose motivations [2]. This study aims to clarify the link between resilience and academic achievement, benefiting educational theory and practice.

2. Theoretical Basis and Literature Review

2.1 Definition and Basic Characteristics of Psychological Resilience

The concept of psychological resilience emerged from child development psychology, initially describing individuals' ability to adapt well to adversity. As research progresses, its definition has expanded. Currently, it refers to the psychological trait that enables individuals to effectively cope with pressure, setbacks, and adversity by leveraging internal resources and external support. Psychological resilience has three key characteristics. It is dynamic, evolving with life experiences and personal growth. It is multi - dimensional, integrating cognition, emotion, behavior, and social supports [3]. It also shows situational specificity, with its manifestations and effects varying across contexts, such as in academic or interpersonal situations.

2.2 Main Measurement Methods of Academic Achievement

There are multiple methods to measure academic achievement. Course grades, the most common indicator, evaluate students' knowledge mastery through exams, assignments, and class performance, though varying grading standards may reduce accuracy. Academic ranking shows students' relative standing but may cause excessive competition. Scholarship attainment comprehensively recognizes academic achievements. Subject competition awards and scientific research results

reflect innovative and practical abilities, serving as key supplements to academic evaluations.

2.3 Current Situation of Relevant Research at Home and Abroad

Foreign research on psychological resilience and academic achievement began earlier. Smith et al. (2020) found high-resilience students better regulate emotions under academic pressure, improving performance. Wagnild & Young (2019) linked personal ability and life acceptance in resilience to academic achievement. Domestic studies, like Li Hong (2021), confirm a positive correlation, while Wang Qiang (2022) notes gender/grade differences: females show higher resilience, and seniors benefit more from it academically.

3. Research Design

3.1 Research Subjects

In this study, the stratified random sampling method was adopted. A total of 1,200 college students from 10 universities in 5 regions across the country were selected as the research subjects. Among them, there were 580 male students and 620 female students. There were 300 freshmen, 320 sophomores, 330 juniors, and 250 seniors. The sample covered multiple disciplines such as liberal arts, science, engineering, and management, ensuring the diversity and representativeness of the research subjects.

3.2 Research Tools

Psychological Resilience Scale: The Connor-Davidson Resilience Scale (CD-RISC) revised by domestic scholars was used. The scale contains 25 items and measures psychological resilience from three dimensions: tenacity, strength, and optimism. A 5-point scoring method is adopted, and a higher score indicates stronger psychological resilience. The scale has good reliability and validity.

Academic Performance Data: Through cooperation with the school's educational administration system, the students' average grade point average (GPA) in the past academic year was obtained as the main indicator to measure academic achievement. At the same time, information such as scholarship attainment and awards in subject competitions was collected as supplementary indicators of academic achievement.

3.3 Research Methods

This study combines questionnaire surveys and data analysis methods. The psychological resilience scale was distributed through an online questionnaire platform to collect students' psychological resilience data. Academic performance data was obtained from the school's educational administration system. The statistical software SPSS 26.0 was used for analysis. Correlation analysis was used to explore the correlation between psychological resilience and academic achievement, and regression analysis was used to test the predictive effect of psychological resilience on academic achievement. Independent sample t-tests and one-way ANOVA were conducted to analyze the differences in psychological resilience among students of different genders and grades.

4. Research Results

4.1 Correlation Analysis Results between Psychological Resilience and Academic Achievement

The correlation analysis results showed that the total score of college students' psychological resilience was significantly positively correlated with academic achievement (average GPA) ($r = 0.42$, $p < 0.01$). This indicates that students with higher psychological resilience tend to have better academic performance. Further analysis of the three dimensions of psychological resilience found that the correlation coefficient between the tenacity dimension and academic achievement was 0.38 ($p < 0.01$), the correlation coefficient between the strength dimension and academic achievement was 0.40 ($p < 0.01$), and the correlation coefficient between the optimism dimension and academic achievement was 0.35 ($p < 0.01$), all showing a significant positive correlation. This shows that each dimension of psychological resilience has a positive impact on academic achievement.

4.2 Differences in Psychological Resilience among Students of Different Genders and Grades

The independent sample t-test showed that the total score of female students' psychological resilience (M = 85.62, SD = 10.23) was significantly higher than that of male students (M = 80.35, SD = 9.87), $t(1198) = 4.25$, $p < 0.01$. In the three dimensions of psychological resilience, female students scored higher than male students, and the differences were statistically significant.

The one-way ANOVA showed that there were significant differences in psychological resilience among students of

different grades (F (3, 1196) = 5.32, p < 0.01). Post-hoc multiple comparisons found that senior students had the highest score in psychological resilience (M = 86.54, SD = 10.56), and freshmen had the lowest score (M = 81.23, SD = 9.65). The scores of sophomore and junior students were between the two, and the differences between adjacent grades were not significant.

4.3 Explanation of the Significant Predictive Effect

Regression analysis showed that psychological resilience significantly and positively predicted academic achievement ($\beta = 0.38$, t = 7.25, p < 0.01), explaining 14.44% of its variance. For each unit increase in resilience, GPA rose by 0.38 units, controlling for other factors. Moreover, all three dimensions of psychological resilience independently and significantly predicted academic achievement (p < 0.01).

5. Discussion

5.1 Explanation of the Results: Consistency with Existing Research

This study's findings align with previous research. Psychological resilience positively correlates with and predicts academic achievement, confirming its significance in college students' academic performance. Students with higher resilience better handle academic stress, maintaining optimal learning states. Regarding gender, female students exhibit greater resilience, likely due to stronger emotional expression, effective use of social support, and self-reflection. For grade differences, seniors show the highest resilience while freshmen the lowest, as freshmen need time to adapt to university life, and resilience grows with experience and self-regulation.

5.2 Suggestions for School Education and Psychological Counseling Work

Based on the research, several suggestions are proposed for college education and counseling. First, integrate mental health education into compulsory courses to enhance students' psychological resilience. Second, offer personalized counseling tailored to gender and grade differences, like adaptation support for freshmen and career - related guidance for seniors. Third, foster a positive campus atmosphere through cultural activities. Finally, establish a unified mechanism combining academic and psychological counseling to promptly address students' issues.

5.3 Limitations and Improvement Directions of This Study

This study has limitations. First, its cross-sectional design cannot confirm the causal relationship between psychological resilience and academic achievement, requiring longitudinal follow-up for clarification. Second, relying solely on average GPA to measure academic achievement is overly simplistic; future research should adopt multi-dimensional indicators. Additionally, while the sample covers multiple regions, it lacks representation of all university types and majors. Expanding the sample size and diversity will enhance the generalizability of findings.

6. Conclusion

This study finds a significant positive correlation between college students' psychological resilience and academic achievement, with gender and grade differences. Females show higher resilience than males, and seniors exceed freshmen. Universities should strengthen mental health education to enhance resilience, while future research may explore the underlying mechanisms.

References

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