FACTORS AFFECTING RESILIENCE AMONG SENIOR HIGH SCHOOL STUDENTS IN CHINA*

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Abstract

The objectives of this study were 1) to investigate the relationship between academic stress, cognitive flexibility, teacher support, school climate, family support and resilience, and 2) to investigate the factors influencing the resilience of high school students in China. The sample consisted of 327 high school students selected by stratified random sampling from a representative high school in China. The research instrument was a structured questionnaire using a 5-point Likert scale. The data were analyzed using descriptive statistics, Pearson's correlation analysis, and enter regression analysis.

The findings revealed that academic stress, cognitive flexibility, teacher support, school climate, and family support were significantly related to resilience. Academic stress showed a negative relationship with resilience, while cognitive flexibility, teacher support, school climate, and family support showed positive relationships. The results of enter regression analysis indicated that the significant predictors of resilience were cognitive flexibility, teacher support, school climate, and family support. These findings suggest that both

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environmental and psychological factors play important roles in influencing resilience among high school students in China.

Keywords: Resilience, Academic Stress, Cognitive Flexibility, Teacher Support, High School Students

Introduction

Resilience has become an increasingly important topic in educational and psychological research, particularly among adolescents facing growing academic and social pressures. High school students in China experience intense academic competition, examination stress, and developmental challenges, all of which may influence their psychological well-being and adaptability. Resilience refers to an individual's ability to adapt positively and recover from adversity, stress, or challenging life situations (Connor & Davidson, 2003; Masten, 2014). Students with higher resilience are generally better able to manage stress, maintain emotional stability, and cope effectively with academic and personal difficulties. Therefore, understanding resilience among Chinese high school students is of significant importance.

Previous studies have identified multiple factors related to resilience. Academic stress has been widely recognized as a major risk factor affecting students' mental and emotional well-being (Lazarus & Folkman, 1984; Pascoe et al., 2020). In contrast, cognitive flexibility enables individuals to adapt their thinking and behavior in response to changing situations, which positively contributes to resilience (Dennis & Vander Wal, 2010; Martin & Anderson, 1998). External environmental factors also play essential roles. Teacher support, school climate, and family support have been found to significantly influence students' emotional adjustment and adaptive development (Wentzel, 1998; Wang & Degol, 2016; Malecki & Demaray, 2006). These factors collectively shape students' ability to cope with stress and adversity.

Although previous studies have examined resilience and its influencing factors, limited research has comprehensively investigated the combined effects of academic stress, cognitive flexibility, teacher support, school climate, and family support on resilience among Chinese high school students. In particular, empirical evidence focusing on the Chinese high school context remains insufficient. Therefore, this study aims to investigate the relationship between these factors and resilience, as well as identify the key factors influencing resilience among high school students in China. The findings may provide useful implications for educators, schools, and families in promoting students' resilience and psychological development.

Objectives

1. To investigate the relationship between academic stress, cognitive flexibility, teacher support, school climate, family support and resilience.

2. To investigate the factors influencing the resilience of high school students in China.

Conceptual Framework

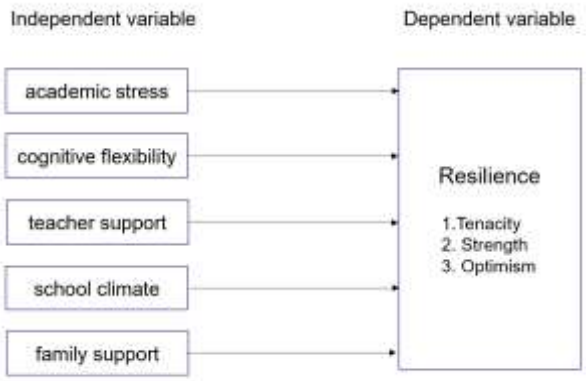


Figure 1 Conceptual Framework

Literature Review

1. Academic Stress

Academic stress refers to the psychological pressure students experience from academic demands, examinations, workload, and performance expectations. Lazarus and Folkman (1984) explained stress through stress appraisal theory, suggesting that stress occurs when environmental demands exceed an individual's coping capacity. Among adolescents, academic stress is one of the major challenges affecting psychological well-being. Pascoe et al. (2020) found that excessive academic stress negatively affects students' emotional adjustment and coping ability. High levels of academic stress may reduce resilience by weakening students' ability to manage challenges effectively.

2. Cognitive Flexibility

Cognitive flexibility refers to the ability to adapt cognitive strategies and thinking patterns in response to changing situations. Dennis and Vander Wal (2010) emphasized that cognitive flexibility helps individuals perceive difficult situations as manageable and controllable. Martin and Anderson (1998) also found that individuals with higher cognitive flexibility demonstrate better adaptive thinking and problem-solving ability. Therefore, cognitive flexibility is considered an important internal factor contributing to resilience.

3. Teacher Support

Teacher support refers to emotional, academic, and social support provided by teachers to students. Positive teacher-student relationships can significantly influence students' motivation and emotional well-being. Wentzel (1998) found that teacher support plays an important role in improving students' school adjustment and psychological development. Students who perceive greater teacher support are more likely to develop stronger resilience when facing academic and personal challenges.

4. School Climate

School climate refers to the overall quality and environment of school life, including relationships, safety, teaching quality, and institutional support. Wang and Degol (2016) reported that school climate significantly affects students' academic performance and psychological adjustment. A positive school climate provides a supportive environment that promotes healthy emotional development and strengthens resilience. Students in supportive school environments are generally better able to cope with adversity.

5. Family Support

Family support refers to emotional, informational, and practical support provided by family members. Family plays a crucial role in adolescents' psychological development and emotional stability. Malecki and Demaray (2006) found that strong family support serves as a protective factor against stress and promotes better emotional adjustment. Students with higher levels of family support tend to show stronger resilience and better coping abilities.

6. Resilience

Resilience refers to the ability to adapt positively and recover from adversity, stress, or difficult situations. Connor and Davidson (2003) defined resilience as an individual's capacity to cope successfully with stress and challenges. Masten (2014) further described resilience as a dynamic process of positive adaptation despite adversity. In this study, resilience includes three dimensions: tenacity, strength, and optimism. Resilience is considered an important psychological characteristic that helps high school students manage academic pressure and life challenges effectively.

7. Research Hypotheses

Based on the literature review and conceptual framework, the following hypotheses were proposed:

H1: Academic stress, cognitive flexibility, teacher support, school climate, and family support are related to the resilience of high school students.

H2: Academic stress, cognitive flexibility, teacher support, school climate, and family support affect high school students' resilience.

Methodology

1. Research Design

This study employed a quantitative research design to investigate the relationship between academic stress, cognitive flexibility, teacher support, school climate, family support, and resilience among high school students in China. The study also examined the factors influencing students' resilience.

2. Population and Sample

The population of this study consisted of high school students in China. The sample included 327 high school students selected by stratified random sampling. The participants represented different grade levels and educational backgrounds, ensuring adequate representation of the target population.

3. Research Instrument

The research instrument was a structured questionnaire using a 5-point Likert scale. The questionnaire consisted of six parts: academic stress, cognitive flexibility, teacher support, school climate, family support, and resilience. The instrument was tested for validity and reliability before data collection.

4. Data Collection

Data were collected through questionnaire distribution after obtaining permission from the relevant institution. Participants were informed about the purpose of the study, and participation was voluntary. All responses were collected anonymously and used only for research purposes.

5. Data Analysis

The collected data were analyzed using descriptive statistics, including frequency, percentage, mean, and standard deviation. Pearson's correlation analysis was used to examine the relationships among variables, while enter regression analysis was used to identify the factors influencing resilience among high school students.

Results

This section presents the results based on the two research objectives. The analysis includes descriptive statistics, correlation analysis, and enter regression analysis.

1. Results Related to Objective 1

Objective 1 aimed to investigate the relationship between academic stress, cognitive flexibility, teacher support, school climate, family support, and resilience.

Table 1 Descriptive Statistics of Variables

Variables	Mean	SD	Level
Resilience (Y)	3.3704	0.9463	Medium
Academic Stress (X1)	3.2780	1.0914	Medium
Cognitive Flexibility (X2)	3.3588	1.0889	Medium
Teacher Support (X3)	3.2473	1.0000	Medium
School Climate (X4)	3.3287	1.0264	Medium
Family Support (X5)	3.3072	1.0674	Medium

Table 1 shows that all variables were at a medium level. The mean score of resilience was 3.3704. The mean scores of all independent variables ranged from 3.2473 to 3.3588, indicating moderate levels across all variables.

Table 2 Correlation Analysis between Variables and Resilience

Variables	r	Sig.
Academic Stress (X1)	.415**	.000
Cognitive Flexibility (X2)	.438**	.000
Teacher Support (X3)	.371**	.000
School Climate (X4)	.339**	.000
Family Support (X5)	.606**	.000

Note: **p < .01

The correlation analysis showed that all five independent variables were significantly related to resilience. Family support had the strongest positive relationship with resilience (r = .606, p < .01), followed by cognitive flexibility (r = .438, p < .01), academic stress (r = .415, p < .01), teacher support (r = .371, p < .01), and school climate (r = .339, p < .01). Therefore, Hypothesis 1 was supported.

2. Results Related to Objective 2

Objective 2 aimed to investigate the factors influencing the resilience of high school students in China.

Table 3 Regression Model Summary

R	R^2	Adjusted R^2
.662	.438	.429

Table 3 indicates that the regression model had acceptable explanatory power. The five independent variables explained 43.8% of the variance in resilience.

Table 4 Regression Coefficients

Variables	Beta	p-value
Academic Stress (X1)	.083	.101
Cognitive Flexibility (X2)	.182	< .001
Teacher Support (X3)	.078	.109
School Climate (X4)	.072	.130
Family Support (X5)	.446	< .001

The regression analysis revealed that only cognitive flexibility and family support significantly influenced resilience. Family support had the strongest predictive effect (β= .446, p < .001), followed by cognitive flexibility (β = .182, p < .001). Academic stress, teacher support, and school climate did not significantly predict resilience.

The regression equation in unstandardized form is:

$$Y = 0.832 + 0.072X_{1} + 0.158X_{2} + 0.074X_{3} + 0.067X_{4} + 0.395X_{5}$$

Table 5 Summary of Hypothesis Testing

Hypothesis	Result
H1	Supported
H2	Partially Supported

The findings suggest that family support and cognitive flexibility were the most important factors influencing resilience among high school students in China.

Discussion

The findings related to Objective 1 showed that academic stress, cognitive flexibility, teacher support, school climate, and family support were significantly related to resilience among high school students in China. Among these variables, family support showed the strongest relationship with resilience, followed by cognitive flexibility. These findings suggest that both internal and external factors are associated with students' resilience development. The results are consistent with previous studies. Dennis and Vander Wal (2010) found that cognitive flexibility helps individuals adapt effectively to difficult situations, while Malecki and Demaray (2006) emphasized that family support serves as an important protective factor in adolescent development.

Regarding Objective 2, the results showed that only cognitive flexibility and family support significantly influenced resilience, whereas academic stress, teacher support, and school climate did not significantly predict resilience. Family support emerged as the strongest predictor, indicating that support from family plays a crucial role in strengthening resilience among high school students. Cognitive flexibility also significantly influenced resilience, suggesting that students with better adaptive thinking are more capable of coping with challenges. These findings indicate that family and individual psychological factors are more important in predicting resilience among high school students in China.

Recommendation

Schools and families should work together to strengthen students' resilience. Parents should provide more emotional support, communication, and encouragement to help students cope with academic and personal challenges. Schools should also create supportive environments that promote students' psychological well-being and resilience development.

Schools should provide activities and programs that improve students' cognitive flexibility and adaptive thinking skills. Training programs, counseling services, and psychological development activities may help students strengthen their problem-solving ability and improve resilience. Future studies may include more variables and larger samples to further explore factors influencing resilience among high school students in China.

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