INTERNATIONAL JOURNAL OF ACADEMIC RESEARCH IN PROGRESSIVE EDUCATION & DEVELOPMENT

OPEN ACCESS JOURNAL

Vol 14, Issue 4, (2025) E-ISSN: 2226-6348

Stress, Psychological Resilience, and Mental Health in Higher Vocational College Students: Evidence from a Mediation Analysis

Qing Yali & Nurfaradilla Binti Mohamad Nasri

Faculty of Education,Universit Kebangsaan Malaysia, Bangi, Selangor, Malaysia, University

Email: P132580@siswa.ukm.edu.my, nurfaradilla@ukm.edu.my

DOI Link: http://dx.doi.org/10.6007/IJARPED/v14-i4/26970

Published Online: 28 November 2025

Abstract

The psychological health of higher vocational college students has received increasing attention as this population navigates academic pressure, career uncertainty, and transitional challenges within Chinese higher education. Although perceived stress is known to influence psychological wellbeing, the mechanisms through which it affects mental health remain insufficiently understood in vocational education settings. Psychological resilience and positive affect have been identified as potential protective factors, yet existing evidence remains limited and inconsistent. This study examined the relationships among perceived stress, psychological resilience, positive affect, and psychological symptoms through a quantitative survey administered to students from higher vocational colleges. Standardized instruments were used to assess all variables, and the data were analyzed through descriptive statistics, group comparisons, correlation tests, and regression based mediation models. The findings showed that students experienced moderate levels of perceived stress but generally demonstrated strong resilience and lower psychological symptoms compared with national norms. Students with leadership experience reported lower stress and higher resilience than their peers. Correlation analyses confirmed clear associations among all variables, and mediation analyses revealed that resilience partially mediated the relationship between perceived stress and psychological symptoms, while positive affect did not serve as a mediating factor. Overall, the results indicate that vocational students face cognitive pressures yet possess substantial protective resources, with resilience emerging as the central mechanism that buffers the impact of stress on mental health. These findings underscore the need for resilience focused interventions and educational practices that enhance perceived agency, strengthen self-management skills, and support student wellbeing in vocational education contexts.

Keywords: Perceived Stress, Psychological Resilience, Positive Affect, Mental Health, Higher Vocational College Students, Mediation Analysis

Introduction

The psychological wellbeing of students enrolled in higher vocational colleges has become an important focus within contemporary education research in China (Wang & Zhang, 2025; Yang & Yu, 2024). As the national agenda increasingly emphasizes the role of vocational education in supporting economic development and workforce preparation, greater attention has been directed toward understanding the academic, emotional, and developmental needs of these students (Bing & Zhenzhen, 2025). Higher vocational college students frequently navigate academic pressures, skill based training requirements, and concerns about career readiness, all of which can contribute to elevated stress and potential mental health challenges (FU, 2024). At the same time, this population is also shaped by strong family networks, cultural expectations, and community oriented support systems that may buffer the effects of stress (Sun et al., 2024). Understanding how these risk and protective factors interact is essential for promoting student well-being and ensuring that vocational institutions can effectively support student development.

Perceived stress has been identified as a critical factor influencing psychological outcomes among college students (Slimmen et al., 2022). Within the transactional model of stress, stress is understood as a cognitive appraisal process in which individuals evaluate the demands placed on them relative to their perceived ability to cope (Goh et al., 2010). Students in vocational settings may appraise academic and life demands as overwhelming or difficult to control, particularly when facing practical training requirements, early internships, and heightened concerns regarding employability (Ma & Bennett, 2021). This cognitive appraisal can have significant implications for mental health, potentially increasing vulnerability to symptoms such as anxiety, depression, and somatic distress.

Psychological resilience has emerged as a central concept in contemporary mental health research (Schwarz, 2018). Resilience is understood as the capacity to adapt positively in the face of adversity, incorporating cognitive, emotional, behavioral, and social resources that enable individuals to manage stress effectively (Wu et al., 2013). For vocational students, resilience may draw upon a range of internal strengths, including self-efficacy and planning ability, as well as external supports from family, peers, and the broader community (Cassidy, 2015; Schmid & Haukedal, 2022). Resilience based models of mental health emphasize that individuals with strong adaptive resources are better equipped to mitigate the negative effects of stress and maintain psychological wellbeing.

Positive affect has also been proposed as a protective factor that may support psychological health (Layous et al., 2014). According to broaden and build theory, positive emotions can expand cognitive flexibility, enhance social connections, and contribute to the development of enduring personal resources (Fredrickson, 2001; Kiken & Fredrickson, 2017). Positive affect may therefore play a role in moderating or mediating the effects of stress on psychological well-being. However, evidence regarding the specific role of positive affect in vocational student populations remains limited, and it is unclear whether positive emotions operate as an independent mechanism or as an outcome of other adaptive processes such as resilience. The present study seeks to address these gaps by examining the relationships among perceived stress, psychological resilience, positive affect, and mental health in a sample of higher vocational college students. The study also investigates whether resilience mediates the relationship between stress and psychological symptoms, and whether positive affect

mediates the relationship between resilience and mental health. This work contributes to a more comprehensive understanding of psychological functioning among vocational students and provides an empirical basis for designing interventions that promote resilience and support student well being.

Despite increasing concern about student well-being in higher education, the psychological functioning of higher vocational college students remains insufficiently examined in contemporary social science research. Current discussions in sociology and educational psychology emphasize that mental health among young people is shaped not only by individual characteristics but also by structural factors such as educational pathways, perceived social status, and access to opportunities. Within this context, vocational students represent a uniquely positioned group whose psychological experiences reflect broader issues surrounding labour market transitions and the growing emphasis on skills-based education. The central research problem in this study concerns how perceived stress influences mental health among vocational students and through which psychological mechanisms this influence occurs. Clarifying these mechanisms is important for understanding the psychological challenges faced by this population and for contributing to wider debates about inequality, resilience, and student development.

The significance of this study lies in its potential to provide insight into how cognitive appraisals, adaptive capacities, and emotional experiences jointly shape mental health in a rapidly changing vocational education system. As China places greater national priority on expanding and upgrading vocational training, the well-being of vocational students has become an urgent policy concern. This study advances current understanding by examining whether psychological resilience and positive affect function as independent pathways linking stress to psychological symptoms. The role of these mechanisms is still contested in existing research, and empirical evidence from vocational colleges remains limited. By focusing specifically on this group, the study offers findings that may inform institutional support practices, enrich theoretical discussions, and contribute to a clearer understanding of the psychological resources that help vocational students navigate academic and career-related pressures.

Literature Review

The psychological experiences of higher vocational college students can be understood through an integrated examination of perceived stress, psychological resilience, positive affect, and mental health. Each of these constructs has been widely discussed in contemporary psychological research, yet their specific interplay within vocational education remains under examined. This section develops a comprehensive theoretical foundation by reviewing the major concepts and empirical findings related to each construct, highlighting the mechanisms through which they may influence one another, and explaining the relevance of these processes to the unique educational and developmental context of vocational college students.

Perceived stress is understood as an individual's subjective evaluation of the demands in daily life and the degree to which these demands exceed available coping resources (Maqsood et al., 2024). The transactional model of stress proposes that stress does not derive solely from external conditions but from the interpretation of those conditions (Schuler, 1982). This

perspective is essential for understanding stress in higher education, where students often confront uncertainty, heavy workloads, and pressures surrounding academic performance and future employment (Chemagosi, 2024). For vocational students, perceived stress is shaped not only by academic difficulties but also by practical training requirements, employment expectations, and social comparisons with peers in academic universities (Ma & Bennett, 2021). These students may encounter a sense of disadvantage or limited control over their life trajectories, which may intensify perceptions of stress. Research conducted in China and internationally has shown that higher perceived stress is associated with increased psychological symptoms, including anxiety, depressive feelings, irritability, and reduced cognitive flexibility (Demirtas & Yildiz, 2019; Guassi Moreira et al., 2022; Yin et al., 2025). These patterns emphasize the importance of addressing cognitive appraisals of stress in efforts to improve student well being.

Psychological resilience represents an adaptive capacity that supports individuals in managing adversity and navigating challenging circumstances (Sisto et al., 2019). Contemporary resilience research views this construct as a dynamic developmental process rather than a fixed trait (Rutter, 2012). Resilience draws upon cognitive resources such as self confidence and problem solving ability, emotional capacities including regulation and tolerance, and social resources such as family cohesion and supportive peer networks (Cefai, 2008). Within the context of vocational education, resilience plays a particularly important role because students often transition between structured classroom environments and relatively demanding practical training settings (Many & Mercier, 2025). Students who possess stronger resilience are more likely to maintain effective functioning during these transitions. Numerous studies have demonstrated that resilience is a powerful predictor of positive outcomes, reducing the likelihood that stress will lead to psychological symptoms and supporting adaptive coping behaviors (Fullerton et al., 2021; Smith et al., 2016; Steinhardt & Dolbier, 2008). Resilience therefore represents a significant protective factor in understanding how students maintain mental health in the presence of persistent challenges.

Positive affect has been widely recognized as a beneficial emotional state that supports psychological and social functioning (Shiota et al., 2021). According to broaden and build theory, positive emotions increase cognitive openness, encourage flexible thinking, and strengthen interpersonal relationships (Hodson, 2021). These processes contribute to the development of lasting personal resources that can be drawn upon during stressful periods. Positive affect may help students approach academic challenges with confidence, engage more fully in learning environments, and maintain supportive social connections (Rusticus et al., 2023). Although positive affect is associated with a variety of positive outcomes, its specific role in reducing psychological symptoms remains uncertain. Some studies suggest that positive affect may help alleviate distress (Förster & Kanske, 2022; van Steenbergen et al., 2021), while others indicate that emotional experiences may be secondary to cognitive mechanisms such as resilience (Parsons et al., 2016; Yi et al., 2020). For vocational students, who may face stable and structural stressors related to vocational identity and employment expectations, it is possible that positive affect functions as a beneficial outcome of resilience rather than as a direct pathway to reduced symptoms.

Mental health is a multidimensional construct that encompasses emotional stability, social functioning, cognitive clarity, and the absence of distressing symptoms (Mason Stephens et

al., 2023; Massé et al., 1998). In higher education research, mental health is often conceptualized as a continuum that includes both well being and distress (van Agteren et al., 2019). Psychological symptoms such as anxiety, depression, and somatic complaints can hinder learning, reduce engagement, and impair the overall educational experience (Bernal-Morales et al., 2015). Prior studies have shown that vocational students may face particular mental health risks due to lower perceived academic standing, concerns about future employment, and the pressure to develop practical skills within limited timeframes (FU, 2024; McBeath et al., 2017; Symonds et al., 2016). However, these risks may be mitigated by strong social support structures found within families and communities, as well as by personal strengths such as resilience. Understanding how these protective factors interact with stressors is essential for developing targeted mental health interventions in vocational colleges.

The theoretical relationships among perceived stress, resilience, positive affect, and mental health have been examined in various populations, but the patterns among vocational students remain underexplored. Research grounded in stress and coping models suggests that stress increases psychological symptoms both directly and through its weakening effect on resilience. Students who perceive events as uncontrollable are less likely to activate adaptive coping strategies, which in turn heightens vulnerability to distress. A growing body of literature also indicates that resilience may contribute to positive emotional experiences, although these emotional experiences may or may not translate into improved mental health outcomes. While positive affect can enhance cognitive and social functioning, it may be insufficient to counteract the deeper processes that lead to symptoms such as anxiety or irritability. Thus, understanding whether positive affect operates as a mechanism or simply as an associated outcome is a critical empirical question.

Recent empirical studies provide new perspectives on the stress processes experienced by vocational students. Liang (2022) reported that vocational college students display stress and coping patterns that differ from those of academic-track students, partly because of concerns about employment prospects and social identity. Ang et al. (2022) found that resilience-focused interventions were especially effective for students enrolled in skills-oriented programs, suggesting that resilience may operate differently across educational settings. International evidence also indicates that resilience may play a more stable role in mental health than emotional states. Lynch and Little (2025), working with community-college students in the United States, observed that resilience mediated stress more consistently than positive affect, which showed only a weak association with mental health outcomes. These findings contribute to the rationale for examining differentiated pathways in the present study.

These recent studies relate closely to wider debates in the social sciences about whether emotional experiences or deeper psychological capacities better account for differences in mental health among young adults. Some researchers argue that positive emotions have a meaningful buffering effect on psychological strain, while others suggest that resilience, coping strategies, and cognitive resources exert a stronger and more lasting influence. Understanding the relative contributions of these constructs remains a central theoretical question. By examining resilience and positive affect together within a vocational student population, the present study engages directly with these debates and provides empirical

evidence that clarifies the distinct roles each factor plays in the relationship between stress and psychological symptoms.

Taken together, these bodies of research suggest a theoretical model in which perceived stress influences psychological symptoms directly and indirectly through resilience, and in which resilience may contribute to positive affect but positive affect may not necessarily mediate the relationship between resilience and mental health. This model aligns with emerging evidence that cognitive and behavioral resources serve as more stable protective mechanisms than momentary emotional states. Examining these relationships in vocational college students is particularly important, because this population experiences unique developmental pressures and may rely on distinctive support systems. The present study responds to this research need by systematically testing these pathways and clarifying the roles of resilience and positive affect in the relationship between stress and psychological symptoms.

Methodology

The methodology of this study was designed to examine the relationships among perceived stress, psychological resilience, positive affect, and mental health in a sample of higher vocational college students. The design, sampling procedures, measurement instruments, and analytic strategies were selected to ensure methodological rigor and to provide a clear foundation for testing the proposed mediation models. This section provides a detailed description of the participants, procedures, measures, and statistical analyses used in the study.

The target population consisted of students enrolled in higher vocational colleges located in the Sichuang Province of China. Convenience sampling was used for data collection due to the geographical distribution of institutions and the administrative feasibility of accessing intact classroom groups during scheduled learning sessions. Although convenience sampling has certain limitations regarding generalizability, the participating colleges represented diverse urban, suburban, and rural contexts, which allowed the sample to reflect the broader demographic characteristics of vocational college students in the region. A total of five hundred surveys were distributed, and four hundred seventy five valid responses were collected, resulting in an effective response rate of ninety five percent. Prior to data collection, participants were informed of the voluntary nature of participation, the confidentiality of responses, and the academic purpose of the study. Written informed consent was obtained from all participants.

The demographic profile of the sample is presented in Table 3.1. The distribution reflected the typical gender composition of vocational colleges, with female students comprising the majority of participants. Students from all three year levels were included, which allowed for variation in academic experience. Approximately forty one percent of the students reported a rural background, and more than half indicated that they had held student leadership roles. This diversity provided a broad range of perspectives relevant to the study's objectives.

Table 3.1
Demographic Distribution of Participants

Variable	Category	Frequency	Percentage
Gender	Male	142	29.9
	Female	333	70.1
Grade	First year	141	29.7
	Second year	199	41.9
	Third year	135	28.4
Ethnicity	Han	386	81.3
	Yi	75	15.8
	Other	14	2.9
Residence	City	138	29.1
	Town	142	29.9
	Rural	195	41.1
Only Child	Yes	156	32.8
	No	319	67.2
Student Leader	Yes	281	59.2
	No	194	40.8
Monthly Living Expenses	Less than 600 RMB	52	10.9
	600 to 900 RMB	163	34.3
	900 to 1200 RMB	168	35.4
	More than 1200 RMB	92	19.4

Validated Chinese versions of established psychological instruments were used to assess the variables of interest. A pilot test involving fifty students from a non participating vocational college was conducted to evaluate the clarity and suitability of the survey items. Minor wording adjustments were made to enhance comprehension while retaining the original psychometric structure of each instrument. To mitigate potential common method bias, anonymity was ensured, several reverse coded items were included, and items were distributed across multiple sections of the survey. Harman's single factor test indicated that the first factor accounted for less than forty percent of the total variance, suggesting that common method bias was not a significant concern.

Perceived stress was assessed using a 14-item scale measuring loss of control and tension (see Table 3.2). The alpha coefficients for the two subscales ranged from 0.634 to 0.750, and the alpha coefficient for the total scale was 0.701. Psychological resilience was measured using the Resilience Scale for Adults, which contains five dimensions including self-efficacy, work planning ability, social competence, family cohesion, and social support. The total resilience scale demonstrated strong internal consistency, with an alpha coefficient of 0.877, and all subscales showed acceptable to excellent reliability, with Cronbach's alpha values ranging from 0.572 to 0.889. Positive affect was assessed with a 9-item instrument that evaluates the frequency of pleasant emotional experiences, yielding a Cronbach's alpha of 0.856. Mental health was assessed through the Global Severity Index of the Symptom Checklist-90, which demonstrated excellent reliability with a Cronbach's alpha of 0.976.

Table 3.2
Internal Consistency of Key Scales

Scale	Number of Items	Cronbach Alpha
Perceived Stress Total	14	0.701
Loss Of Control	8	0.750
Tension	6	0.634
Psychological Resilience Total	33	0.877
Self Efficacy	6	0.853
Work Planning Ability	4	0.572
Social Competence	6	0.837
Family Cohesion	6	0.889
Social Support	5	0.825
Positive Affect	9	0.856
Psychological Symptoms	90	0.976

Data collection was conducted during regularly scheduled classroom sessions. Trained research assistants administered the surveys to ensure consistent procedures across all participating institutions. Participants were instructed to respond to each item based on their experiences during the past month. The average completion time was approximately twenty minutes. No incentives were provided for participation in order to avoid potential bias.

Data analysis was conducted using the SPSS27. The analysis consisted of four major stages. Preliminary screening included checking for missing data, outliers, and normality assumptions. Skewness and kurtosis values were within acceptable ranges. Multicollinearity was examined by calculating variance inflation factors, all of which were below three, indicating no significant multicollinearity issues. Descriptive statistics were calculated for all variables to provide an overview of the psychological profiles of participants. Group differences were examined using independent samples t tests and one way analysis of variance, and effect sizes were calculated to provide information about the magnitude of observed differences. Pearson correlation coefficients were calculated to explore relationships among perceived stress, resilience, positive affect, and mental health.

Finally, mediation models were tested to examine the direct and indirect effects among variables. A regression based approach was used to test the two proposed mediation pathways. Bootstrapping procedures with five thousand resamples were used to assess the significance of indirect effects. This approach is widely recommended in psychological research because it does not rely on normal distribution assumptions and provides more accurate estimates of mediation effects.

Results

The results of this study are organized into four main sections. The first section presents the descriptive statistics of the core psychological variables and compares the mental health levels of the sample with national norms for Chinese college students. The second section examines differences in stress, resilience, and mental health across demographic groups, focusing in particular on the distinction between students who held leadership positions and those who did not. The third section explores the correlational structure among perceived stress, psychological resilience, positive affect, and psychological symptoms. The final section presents the results of the mediation analyses used to examine the indirect pathways that link stress to mental health. Together, these analyses provide a comprehensive understanding

of how cognitive appraisals, adaptive capacities, and emotional states jointly influence the psychological well being of vocational students.

Descriptive Statistics and Normative Comparison

The descriptive statistics for perceived stress, psychological resilience, positive affect, and mental health are presented in Table 4.1. The mean score for total perceived stress was 1.93, indicating a moderate level of stress among the sample. The loss of control dimension had a mean score of 2.26, which is slightly above the theoretical midpoint. This finding suggests that many students experienced a sense of uncertainty or limited influence over important aspects of their daily lives. In contrast, the tension dimension had a mean score of 1.59, indicating that physiological or emotional arousal associated with stress was relatively low for most participants.

Psychological resilience demonstrated generally strong levels, with a total mean score of 5.01. Family cohesion and social support received some of the highest mean scores, reflecting the importance of interpersonal and familial relationships in supporting psychological well-being among vocational students. Work planning ability received the lowest score among resilience dimensions, suggesting that vocational students may need additional support in developing planning and organizational skills. Positive affect had a moderate mean score of 3.07, indicating that most students experienced a balanced level of pleasant emotional states. The Global Severity Index of the Symptom Checklist-90 was 0.97, which is considered low and indicates reduced levels of psychological symptoms within this population.

Table 4.1
Status of Perceived Stress, Psychological Resilience, Positive Affect, and Mental Health

Variable	Mean	SD	Range	Midpoint
Loss Of Control	2.26	0.561	0 to 4	2
Tension	1.59	0.655	0 to 4	2
Total Perceived Stress	1.93	0.447	0 to 4	2
Self Efficacy	4.75	0.994	1 to 7	4
Work Planning Ability	4.55	1.216	1 to 7	4
Social Competence	4.93	1.081	1 to 7	4
Family Cohesion	5.46	1.099	1 to 7	4
Social Support	5.34	1.004	1 to 7	4
Total Resilience	5.01	0.659	1 to 7	4
Positive Affect	3.07	0.717	1 to 5	3
Psychological Symptoms	0.97	0.542	1 to 5	3

To contextualize the level of psychological symptoms, the Symptom Checklist scores were compared with national norms for Chinese college students. As shown in Table 4.2, students in the present study reported significantly lower scores across all nine factors and the overall Global Severity Index. The differences were substantial, with t values ranging from −19.50 to −29.00. These results indicate that, although vocational students experience significant cognitive stress related to perceived loss of control, their levels of psychological symptoms remain low compared to similar-aged peers across China. This suggests the presence of protective factors in their environment or personal life that buffer the psychological impact of stress.

Table 4.2
Comparison of SCL ninety Scores with National Norms

Symptom Dimension	Study Mean	National Norm	t value	p value
Somatization	0.575	1.37	-25.80	0.000
Obsessive Symptoms	1.053	1.62	-19.50	0.000
Interpersonal Sensitivity	0.937	1.65	-23.40	0.000
Depression	0.819	1.50	-23.80	0.000
Anxiety	0.776	1.39	-22.90	0.000
Hostility	0.701	1.46	-27.80	0.000
Phobic Anxiety	0.503	1.25	-29.00	0.000
Paranoid Ideation	0.709	1.43	-26.50	0.000
Psychoticism	0.621	1.29	-25.80	0.000
Global Severity Index	0.97	1.50	-24.00	0.000

These descriptive and normative findings establish an important foundation for interpreting subsequent analyses. The elevated sense of diminished control suggests a psychological vulnerability, while the low levels of symptoms and strong resilience scores indicate that protective factors may be helping students maintain stability. To better understand these patterns, the following section examines differences in stress and resilience across demographic groups.

Group Differences in Stress, Resilience, and Mental Health

To explore whether demographic characteristics influence psychological functioning, comparisons were made between students who held leadership positions and those who did not. Leadership experience is often associated with greater responsibility, social engagement, and opportunities for personal development, all of which may influence stress and resilience. Table 4.3 shows that student leaders reported significantly lower levels of perceived stress, especially in the loss of control dimension. This suggests that leadership roles may help students feel more capable of managing their academic and personal responsibilities.

Table 4.3
Differences in Perceived Stress by Student Leadership

Variable	Leadership	Mean	SD	t value	p value
Loss Of Control	Yes	15.37	4.049	-1.589	0.042
	No	16.20	3.817		
Tension	Yes	10.90	4.461	-1.001	0.317
	No	11.33	4.667		
Total Perceived Stress	Yes	26.27	6.332	-1.731	0.034
	No	27.53	6.180		

Student leaders also demonstrated significantly higher resilience scores across nearly all dimensions. Table 4.4 shows that leaders scored higher in self efficacy, work planning ability, social competence, family cohesion, and social support. The differences were particularly pronounced in self efficacy and social competence, suggesting that leadership experiences may nurture confidence and interpersonal skills, which in turn contribute to greater resilience.

Table 4.4
Differences in Resilience by Student Leadership

Variable	Leadership	Mean	SD	t value	p value
Self Efficacy	Yes	49.31	9.727	3.225	0.001
	No	46.35	9.906		
Work Planning Ability	Yes	18.69	4.976	2.205	0.028
	No	17.69	4.735		
Social Competence	Yes	31.23	6.229	4.757	0.000
	No	28.42	6.386		
Family Cohesion	Yes	32.85	5.803	2.190	0.029
	No	31.58	5.464		
Social Support	Yes	26.88	5.004	3.727	0.000
	No	25.01	4.875		

The comparison of high resilience and low resilience groups further illustrated the protective effect of resilience. As shown in Table 4.5, students in the high resilience group reported significantly lower stress, higher positive affect, and fewer psychological symptoms. These results reinforce the importance of resilience as a central adaptive resource for vocational students.

Table 4.5
Comparison of High and Low Resilience Groups

Variable	Group	Mean	SD	t value	p value
Perceived Stress	Low resilience	29.98	6.108	7.400	0.000
	High resilience	24.50	5.744		
Positive Affect	Low resilience	25.02	6.047	-7.817	0.000
	High resilience	31.02	6.232		
Psychological Symptoms	Low resilience	1.07	0.572	8.507	0.000
	High resilience	0.53	0.444		

Together, these findings suggest that contextual experiences such as leadership involvement and personal strengths such as resilience significantly influence stress responses and mental health outcomes. To further understand how these variables relate to one another, the next section examines Pearson correlations among the main constructs.

Correlations among Key Variables

Correlation analyses were conducted to explore the relationships among perceived stress, psychological resilience, positive affect, and psychological symptoms. The results are shown in Table 4.6. Perceived stress demonstrated significant negative correlations with resilience and positive affect, indicating that higher stress was associated with fewer adaptive resources and fewer pleasant emotional experiences. Perceived stress also showed a strong positive correlation with psychological symptoms, confirming that students with stronger stress appraisals tend to experience greater distress.

Resilience demonstrated a moderate positive correlation with positive affect, suggesting that students who possess greater adaptive capacities also tend to experience more positive emotional states. Resilience also showed a negative correlation with psychological symptoms, indicating that students with stronger resilience are less likely to report psychological distress. Positive affect demonstrated a modest negative correlation with psychological symptoms.

Table 4.6
Correlations among Main Study Variables

Variable	Perceived Stress	Resilience	Positive Affect	Psychological Symptoms
Perceived Stress	1	-0.340	-0.156	0.489
Resilience	-0.340	1	0.371	-0.374
Positive Affect	-0.156	0.371	1	-0.156
Psychological Symptoms	0.489	-0.374	-0.156	1

These correlations meet the statistical preconditions for conducting mediation analyses. The following section presents the results of two mediation models, one focusing on resilience as a mediator between stress and mental health, and another examining whether positive affect mediates the relationship between resilience and psychological symptoms.

Mediation Analyses

Mediation of Psychological Resilience in the Relationship Between Stress and Mental Health

The first mediation model examined whether psychological resilience partially explained the relationship between perceived stress and psychological symptoms. The regression results presented in Table 4.7 demonstrate that perceived stress significantly predicted resilience and mental health. When resilience was included in the model predicting mental health, both perceived stress and resilience remained significant predictors. The inclusion of resilience reduced the strength of the relationship between stress and psychological symptoms, indicating partial mediation.

These findings show that resilience acts as an important protective mechanism. Students who experience higher stress but possess strong resilience are better able to maintain psychological stability. Bootstrapping procedures further confirmed that the indirect effect of resilience was statistically significant.

Table 4.7
Regression Analysis for Resilience as a Mediator

Dependent Variable	Predictor	R squared	Change in R squared	Standardized Beta	t value	p value
Psychological Resilience	Perceived stress	0.116	0.114	-0.340	-7.867	0.000
Psychological Symptoms	Perceived stress	0.240	0.238	0.489	12.208	0.000
Psychological Symptoms	Perceived stress	0.288	0.285	0.410	9.921	0.000
Psychological Symptoms	Psychological resilience	0.288	0.285	-0.235	-5.685	0.000

Mediation of Positive Affect in the Relationship Between Resilience and Mental Health

The second mediation model examined whether positive affect mediated the relationship between resilience and psychological symptoms. The results presented in Table 4.8 show that resilience significantly predicted positive affect, and positive affect predicted mental health when examined alone. However, when both variables were included in the regression

equation predicting mental health, positive affect was no longer significant. Resilience remained a significant predictor.

These results indicate that positive affect does not mediate the relationship between resilience and psychological symptoms. Although resilience is associated with higher levels of positive affect, positive emotional experiences do not appear to constitute the mechanism through which resilience reduces distress.

Table 4.8
Regression Analysis for Positive Affect as a Mediator

Dependent Variable	Predictor	R squared	Change in R squared	Standardized Beta	t value	p value
Positive Affect	Psychological resilience	0.137	0.135	0.371	8.676	0.000
Psychological Symptoms	Psychological resilience	0.140	0.138	-0.374	-8.772	0.000
Psychological Symptoms	Psychological resilience	0.140	0.137	-0.367	-7.983	0.000
Psychological Symptoms	Positive affect	0.140	0.137	-0.020	-0.426	0.670

The results of these two mediation models confirm the central role of resilience in buffering the effects of stress on mental health, while positive affect does not operate as an independent mediator. Together, the findings reflect a consistent psychological pattern in which cognitive and behavioral capacities, rather than emotional states alone, play the most significant role in reducing psychological symptoms in vocational college students.

Discussion

The purpose of this study was to examine the relationships among perceived stress, psychological resilience, positive affect, and psychological symptoms in higher vocational college students in China. The findings provide a detailed view of the psychological functioning of this population, revealing a pattern in which cognitive pressures coexist with substantial adaptive strengths. The study offers both theoretical and practical insights, showing that psychological resilience plays a central protective role in mitigating the negative influence of stress on mental health, while positive affect does not operate as a mechanism that independently reduces psychological symptoms. These results contribute to the growing body of literature that emphasizes the importance of cognitive and behavioral resources in supporting student well being.

One of the most striking findings is the significant discrepancy between perceived stress and actual levels of psychological symptoms. Students in the sample reported moderate levels of perceived stress, particularly in the loss of control dimension, which reflects uncertainty and difficulty managing academic and personal demands. This elevation in perceived loss of control is consistent with challenges commonly faced by vocational students, including concerns about employability, adjustment to practical training, and social comparisons with students enrolled in academic universities. However, despite these cognitive pressures, students displayed relatively low levels of psychological symptoms compared with national norms. This pattern suggests the presence of protective factors that help buffer stress before

it develops into psychological distress. The strong levels of family cohesion and social support observed in the resilience scale highlight the continuing importance of interpersonal relationships for student psychological well being in Chinese cultural contexts.

The group comparison analyses provide additional insight into the influence of contextual experiences on psychological functioning. Students who had held leadership positions in school demonstrated lower perceived stress and substantially higher resilience across multiple dimensions. These results support the idea that leadership experiences offer meaningful opportunities for personal growth. Leadership roles require communication, problem solving, organization, and social collaboration. These experiences may strengthen students' sense of competence and agency, helping them feel more capable of managing demands and challenges. The higher resilience among student leaders also suggests that vocational institutions may be able to cultivate protective psychological resources by creating more opportunities for structured student involvement.

The comparison between high and low resilience groups further underscores the importance of resilience as a protective factor. Students with high resilience reported significantly lower stress, higher positive affect, and fewer psychological symptoms. This pattern aligns with resilience theory, which proposes that individuals with stronger adaptive capacities are better equipped to manage stress, maintain emotional stability, and engage effectively in daily life. For vocational students, who often face unique developmental pressures, resilience may be especially important in supporting their academic transition, identity formation, and preparation for the workforce.

The correlational analyses revealed clear and coherent relationships among the variables. Perceived stress was positively associated with psychological symptoms and negatively associated with both resilience and positive affect. These findings align with the transactional model of stress, which suggests that stress arises when individuals perceive their available resources as inadequate relative to the demands placed upon them. When students feel that they lack control or confidence, stress appraisals increase and psychological symptoms may follow. Resilience demonstrated strong negative correlations with psychological symptoms and positive associations with positive affect, reinforcing the idea that resilience encompasses cognitive, emotional, and social strengths that support psychological well being. Although positive affect was moderately related to other variables, it showed a weaker relationship with psychological symptoms, suggesting that emotional states contribute to well being but do not fully explain symptom outcomes.

The mediation analyses provide further theoretical clarification. The first mediation model confirmed that resilience partially mediates the relationship between perceived stress and psychological symptoms. This means that stress influences mental health both directly and indirectly by weakening resilience. Students with higher perceived stress tend to experience reductions in resilience, which then increases vulnerability to psychological symptoms. The partial mediation observed in this study suggests that although resilience is an important mechanism, additional factors may also contribute to the relationship between stress and mental health. These factors may include learned coping strategies, academic support, personality characteristics, or environmental conditions. Nonetheless, resilience remains a central and essential buffer that protects students from the full impact of stress.

The second mediation model examined whether positive affect mediated the relationship between resilience and psychological symptoms. The results indicated that although resilience predicts higher positive affect, positive affect did not explain the relationship between resilience and mental health. When both resilience and positive affect were included in the regression model predicting psychological symptoms, resilience remained significant and positive affect did not. This suggests that positive affect is best understood as an emotional outcome associated with resilience rather than as a mechanism through which resilience reduces symptoms. These findings align with research that views emotional states as transient and situational, whereas resilience reflects deeper, more enduring capacities that influence long term psychological health. For vocational students, who face persistent structural stressors related to training and employment, stable cognitive and behavioral resources are likely more important than momentary emotional experiences in determining mental health outcomes.

The results of this study have meaningful implications for both theory and practice. Theoretically, the findings support an integrated model of student psychological well being in which cognitive appraisals of stress influence mental health directly and indirectly through resilience. Emotional experiences, although important for daily functioning, do not serve as primary mechanisms in reducing symptoms. This reinforces the need for theoretical models that prioritize deeper psychological capacities rather than focusing solely on emotional enhancement. The study also extends existing literature by focusing specifically on vocational students, a population that has received relatively little attention in mainstream psychological research despite their central role in societal and economic development.

From a practical perspective, the findings highlight several strategies for improving psychological support systems in vocational colleges. Programs that strengthen resilience should be prioritized. These may include training in planning and organization, communication skills, problem solving strategies, emotional regulation, and adaptive coping. Institutions may also promote resilience by expanding leadership opportunities and encouraging student engagement in community or campus activities. Because student leaders exhibited higher resilience and lower stress levels, vocational colleges may benefit from integrating leadership development into their curriculum or extracurricular structures.
Another important implication relates to perceived loss of control. Since this aspect of stress was particularly elevated, interventions that enhance students' sense of agency may be especially beneficial. Academic advising, structured goal setting, and career planning programs can help students build confidence and reduce feelings of uncertainty. Skill based training in time management and decision making may also strengthen students' perceptions of control.

Although positive affect did not function as a mediator, promoting positive emotional experiences in the educational environment may still support student engagement, motivation, and satisfaction. Activities that foster a supportive climate, peer collaboration, and enjoyable learning experiences may contribute to overall well being, even if they do not directly reduce psychological symptoms.

In summary, the findings of this study portray a complex but coherent psychological profile among vocational students. Students experience notable cognitive pressures, but they also

possess strong adaptive capacities that help them maintain stable psychological functioning. Resilience emerges as the central factor that buffers the effects of stress, while positive affect plays a more modest and indirect role. This understanding helps guide both theoretical development and practical interventions that support student well being in vocational education contexts.

Although the present study provides valuable insights into the psychological functioning of higher vocational college students, several limitations should be acknowledged. First, the sample was drawn from vocational colleges in the Sichuang Province, which may limit the generalizability of the findings to other regions of China that differ in social, cultural, or educational contexts. Future studies should include more diverse samples across multiple provinces to enhance representativeness. Second, the cross sectional design restricts the ability to infer causal relationships among perceived stress, psychological resilience, positive affect, and psychological symptoms. Longitudinal or experimental research designs would help clarify the temporal ordering of these variables and strengthen causal inference. Third, the study relied on self report measures, which may be influenced by social desirability or recall bias. Incorporating multiple assessment methods such as interviews, teacher ratings, or behavioral indicators would help improve measurement validity. Finally, although the instruments used in this study are widely applied in Chinese educational research, future investigations may explore more recent tools for mental health assessment to provide complementary perspectives. Addressing these limitations will contribute to a more comprehensive understanding of psychological well being in vocational education settings.

Conclusion and Implications

The present study examined the relationships among perceived stress, psychological resilience, positive affect, and psychological symptoms in higher vocational college students in China. The findings reveal a complex pattern in which cognitive stressors coexist with strong adaptive capacities. Although students reported moderate levels of perceived stress and elevated feelings of diminished control, their psychological symptoms were significantly lower than national averages. This suggests that many vocational students possess meaningful protective factors that buffer the impact of stress. Among these protective factors, psychological resilience emerged as the most influential, serving as a central mechanism that helps students maintain mental health even when stress levels increase.

The mediation analysis demonstrated that resilience partially explains the relationship between perceived stress and psychological symptoms. Students with higher resilience were better able to withstand the effects of stress and maintain emotional stability. This finding reinforces the conceptualization of resilience as a dynamic and multidimensional capacity that draws upon cognitive, emotional, and social resources. In contrast, the study found that positive affect did not mediate the relationship between resilience and psychological symptoms. Although students with greater resilience experienced more positive emotional states, these emotions did not function as the pathway through which resilience reduced psychological distress. This suggests that deeper psychological capacities, rather than momentary emotional experiences, play a more significant role in protecting mental health among vocational college students.

The results carry several important implications for educational practice. First, vocational colleges should prioritize the development of resilience focused programs. These may include training in communication, problem solving, emotional regulation, and goal setting. Strengthening these competencies can help students build psychological resources that support long term well being. Second, the elevated sense of diminished control observed among students highlights the importance of institutional interventions that enhance students' sense of agency. Academic advising, career planning services, and structured skill development programs can help students gain confidence and reduce uncertainty. Third, because leadership experience was associated with higher resilience and lower stress, vocational institutions may consider expanding opportunities for leadership engagement. Structured student participation, group projects, and campus organizations may provide meaningful contexts for developing adaptive skills.

Finally, the study contributes to theoretical understanding by confirming that resilience is a primary mechanism in the stress mental health relationship, while positive affect plays a supplementary role. This supports the development of theoretical models that prioritize stable adaptive capacities over transient emotional states. The findings highlight the need for more research focused on vocational students, who represent a significant and often under examined group within higher education research.

References

Ang, W. H. D., Lau, S. T., Cheng, L. J., Chew, H. S. J., Tan, J. H., Shorey, S., & Lau, Y. (2022). Effectiveness of resilience interventions for higher education students: A meta-analysis and metaregression. *Journal of educational Psychology*, *114*(7), 1670.

Bernal-Morales, B., Rodríguez-Landa, J. F., & Pulido-Criollo, F. (2015). Impact of anxiety and depression symptoms on scholar performance in high school and university students. In *A fresh look at anxiety disorders*. IntechOpen.

Bing, H., & Zhenzhen, Z. (2025). Synergistic development of vocational education and regional economy in the era of high-quality growth. *International Educational Research*, *8*(3), p66-p66.

Cassidy, S. (2015). Resilience building in students: The role of academic self-efficacy. *Frontiers in Psychology*, *6*, 1781.

Cefai, C. (2008). *Promoting resilience in the classroom: A guide to developing pupils' emotional and cognitive skills*. Jessica Kingsley Publishers.

Chemagosi, M. J. (2024). Student well-being in higher education institutions: academic pressures. In *Student well-being in higher education institutions* (pp. 81-106). IGI Global.

Demirtas, A. S., & Yildiz, B. (2019). Hopelessness and perceived stress: The mediating role of cognitive flexibility and intolerance of uncertainty. *Dusunen Adam Journal of Psychiatry and Neurological Sciences*, *32*(3), 259.

Förster, K., & Kanske, P. (2022). Upregulating positive affect through compassion: Psychological and physiological evidence. *International Journal of Psychophysiology*, *176*, 100-107.

Fredrickson, B. L. (2001). The role of positive emotions in positive psychology: The broaden-and-build theory of positive emotions. *American psychologist*, *56*(3), 218.

FU, F. (2024). Mental well-being and self-efficacy among students in a Vocational & Technical College in Shaanxi Province, China. *Pacific International Journal*, *7*(2), 68-72.

Fullerton, D. J., Zhang, L. M., & Kleitman, S. (2021). An integrative process model of resilience in an academic context: Resilience resources, coping strategies, and positive adaptation. *PloS one*, *16*(2), e0246000.

Goh, Y. W., Sawang, S., & Oei, T. P. (2010). The Revised Transactional Model (RTM) of occupational stress and coping: An improved process approach. *The Australasian Journal of Organisational Psychology*, *3*, 13-20.

Guassi Moreira, J. F., Sahi, R., Ninova, E., Parkinson, C., & Silvers, J. A. (2022). Performance and belief-based emotion regulation capacity and tendency: Mapping links with cognitive flexibility and perceived stress. *Emotion*, *22*(4), 653.

Hodson, L. (2021). *The goal doesn't matter, but having one does: exploring the links between character strengths, the broaden and build hypothesis, and cognitive flexibility* University of Warwick].

Kiken, L. G., & Fredrickson, B. L. (2017). Cognitive aspects of positive emotions: A broader view for well-being. In *The happy mind: Cognitive contributions to well-being* (pp. 157-175). Springer.

Layous, K., Chancellor, J., & Lyubomirsky, S. (2014). Positive activities as protective factors against mental health conditions. *Journal of abnormal psychology*, *123*(1), 3.

Liang, A. (2022). *The role of technology in the school to work transition of vocational students in China* University of Oxford].

Lynch, R. J., & Little, A. (2025). The resilience myth: relationships among mental health wellbeing, campus connection, and resilience in Queer community college students. *International Journal of LGBTQ+ Youth Studies*, 1-21.

Ma, Y., & Bennett, D. (2021). The relationship between higher education students' perceived employability, academic engagement and stress among students in China. *Education+ Training*, *63*(5), 744-762.

Many, H., & Mercier, C. (2025). Constructing Pathways to Success: Resilience in Vocational Education. *Canadian Journal of Educational and Social Studies*, *5*(2), 210-235.

Maqsood, A., Gul, S., Noureen, N., & Yaswi, A. (2024). Dynamics of perceived stress, stress appraisal, and coping strategies in an evolving educational landscape. *Behavioral Sciences*, *14*(7), 532.

Mason Stephens, J., Iasiello, M., Ali, K., van Agteren, J., & Fassnacht, D. B. (2023). The importance of measuring mental wellbeing in the context of psychological distress: Using a theoretical framework to test the dual-continua model of mental health. *Behavioral Sciences*, *13*(5), 436.

Massé, R., Poulin, C., Dassa, C., Lambert, J., Bélair, S., & Battaglini, A. (1998). The structure of mental health: Higher-order confirmatory factor analyses of psychological distress and well-being measures. *Social indicators research*, *45*(1), 475-504.

McBeath, M. L., Drysdale, M. T., & Bohn, N. (2017). Pathways to mental health and wellbeing: understanding and supporting students during critical school-to-work transitions. In *Work-integrated learning in the 21st century* (Vol. 32, pp. 177-191). Emerald Publishing Limited.

Parsons, S., Kruijt, A.-W., & Fox, E. (2016). A cognitive model of psychological resilience. *Journal of Experimental Psychopathology*, *7*(3), 296-310.

Rusticus, S. A., Pashootan, T., & Mah, A. (2023). What are the key elements of a positive learning environment? Perspectives from students and faculty. *Learning environments research*, *26*(1), 161-175.

Rutter, M. (2012). Resilience as a dynamic concept. *Development and psychopathology*, *24*(2), 335-344.

Schmid, E., & Haukedal, C. L. (2022). Identifying resilience promoting factors in vocational education and training: a longitudinal qualitative study in Norway. *Empirical research in vocational education and training*, *14*(1), 11.

Schuler, R. S. (1982). An integrative transactional process model of stress in organizations. *Journal of Organizational Behavior*, *3*(1), 5-19.

Schwarz, S. (2018). Resilience in psychology: A critical analysis of the concept. *Theory & psychology*, *28*(4), 528-541.

Shiota, M. N., Sauter, D. A., & Desmet, P. M. (2021). What are 'positive'affect and emotion? *Current Opinion in Behavioral Sciences*, *39*, 142-146.

Sisto, A., Vicinanza, F., Campanozzi, L. L., Ricci, G., Tartaglini, D., & Tambone, V. (2019). Towards a transversal definition of psychological resilience: a literature review. *Medicina*, *55*(11), 745.

Slimmen, S., Timmermans, O., Mikolajczak-Degrauwe, K., & Oenema, A. (2022). How stress-related factors affect mental wellbeing of university students A cross-sectional study to explore the associations between stressors, perceived stress, and mental wellbeing. *PloS one*, *17*(11), e0275925.

Smith, M. M., Saklofske, D. H., Keefer, K. V., & Tremblay, P. F. (2016). Coping strategies and psychological outcomes: The moderating effects of personal resiliency. *The Journal of Psychology*, *150*(3), 318-332.

Steinhardt, M., & Dolbier, C. (2008). Evaluation of a resilience intervention to enhance coping strategies and protective factors and decrease symptomatology. *Journal of American college health*, *56*(4), 445-453.

Sun, B., Zheng, Q., Chen, T., & Fan, L. (2024). Effect of perceived social support on career expectations of vocational college students in China: the chain mediating roles of self-efficacy and professional identity. *Current Psychology*, *43*(33), 27176-27186.

Symonds, J., Dietrich, J., Chow, A., & Salmela-Aro, K. (2016). Mental health improves after transition from comprehensive school to vocational education or employment in England: A national cohort study. *Developmental Psychology*, *52*(4), 652.

van Agteren, J., Woodyatt, L., Iasiello, M., Rayner, J., & Kyrios, M. (2019). Make it measurable: Assessing psychological distress, wellbeing and resilience at scale in higher education. *Student Success*, *10*(3), 1-13.

van Steenbergen, H., de Bruijn, E. R., van Duijvenvoorde, A. C., & van Harmelen, A.-L. (2021). How positive affect buffers stress responses. *Current Opinion in Behavioral Sciences*, *39*, 153-160.

Wang, R., & Zhang, H. (2025). Integrating positive psychology principles in vocational education: A new approach to boosting student well-being and academic motivation. *Acta Psychologica*, *254*, 104834.

Wu, G., Feder, A., Cohen, H., Kim, J. J., Calderon, S., Charney, D. S., & Mathé, A. A. (2013). Understanding resilience. *Frontiers in behavioral neuroscience*, *7*, 10.

Yang, T., & Yu, L.-J. (2024). Factors affecting the construction of the theoretical model of subjective well-being of Chinese higher vocational college students. *Journal of Pedagogical Research*, *8*(4), 420-436.

Yi, F., Li, X., Song, X., & Zhu, L. (2020). The underlying mechanisms of psychological resilience on emotional experience: Attention-bias or emotion disengagement. *Frontiers in Psychology*, *11*, 1993.

Yin, Z., Xuan, B., Zhang, X., & Di, Y. (2025). The transactional relationship between perceived stress and executive function among Chinese adolescents. *Current Psychology*, 1-12.