





ORIGINAL

Investigating the impact of stressors on stress level among the chinese's students: the moderating role of chinese painting experience

Investigación del impacto de los estresores en el nivel de estrés entre estudiantes chinos: el papel moderador de la experiencia de la pintura china

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ABSTRACT

Introduction: this study explored how relational, personal, and environmental factors as stressors affected the stress levels of students while also investigating the moderating effect of experience with Chinese painting on the relationship between stressors and students' stress levels. By examining these dynamics, the research aimed to provide insights into effective coping strategies for students facing academic pressures.

Method: a quantitative research methodology was employed, utilizing online and self-administered surveys to collect data from 384 respondents in Shandong Province, China. The data were analyzed using SPSS and Smart PLS.

Results: the research revealed a positive correlation among stressors, stress levels among students, and Chinese painting experience. The study successfully established the moderating effect within the context of significant results. Theoretical implications, along with identified research gaps in the literature, highlighted a culturally inclusive framework. Findings suggested that engaging in Chinese painting provided mental peace, reduced stress levels, and fostered professional growth among students.

Conclusions: the study illuminated the impact of stressors—such as relational, personal, and environmental factors—on students' stress levels. Given the rising prevalence of stressors among students, universities were encouraged to consider implementing Chinese painting classes. Such classes had been shown to alleviate stress and promote physical fitness. Furthermore, integrating Chinese painting therapy practices into student life could enhance overall well-being and academic performance.

Keywords: Stressors; Chinese Painting Experience; Stress Level.

RESUMEN

Introducción: este estudio exploró cómo los factores relacionales, personales y ambientales como factores estresantes afectaban a los niveles de estrés de los estudiantes, al tiempo que investigó el efecto moderador de la experiencia con la pintura china en la relación entre los factores estresantes y los niveles de estrés de los estudiantes. Al examinar estas dinámicas, la investigación pretendía aportar ideas sobre estrategias de afrontamiento eficaces para los estudiantes que se enfrentan a presiones académicas.

Método: se empleó una metodología de investigación cuantitativa, utilizando encuestas en línea y autoadministradas para recoger datos de 384 encuestados en la provincia china de Shandong. Los datos se analizaron con SPSS y Smart PLS.

Resultados: la investigación reveló una correlación positiva entre los factores estresantes, los niveles de estrés entre los estudiantes y la experiencia con la pintura china. El estudio estableció con éxito el efecto

moderador en el contexto de los resultados significativos. Las implicaciones teóricas, junto con las lagunas de investigación identificadas en la literatura, destacaron un marco culturalmente inclusivo. Los resultados sugieren que la práctica de la pintura china proporciona paz mental, reduce los niveles de estrés y fomenta el crecimiento profesional de los estudiantes.

Conclusiones: el estudio puso de manifiesto el impacto de los factores estresantes -como los relacionales, personales y ambientales- en los niveles de estrés de los estudiantes. Dada la creciente prevalencia de factores estresantes entre los estudiantes, se animó a las universidades a considerar la posibilidad de implantar clases de pintura china. Se ha demostrado que estas clases alivian el estrés y fomentan la forma física. Además, la integración de prácticas terapéuticas de pintura china en la vida estudiantil podría mejorar el bienestar general y el rendimiento académico.

Palabras clave: Factores Estresantes; Experiencia de Pintura China; Nivel de Estrés.

INTRODUCTION

The onset of depression in college students can be significantly influenced by academic stress. This stress encompasses the pressures of tests, homework, classroom environments, performance evaluations, and other academic demands.⁽⁴³⁾ In contrast, Kültz⁽²¹⁾ characterizes stress as an intricate combination of biological and psychological tension, occurring when individuals, whether human or animal, struggle to cope with real or perceived emotional or physical threats.

In today's fast-changing society, students are often viewed as especially vulnerable, especially in the era often labeled as the millennial age. Despite the widespread availability of education, disparities in students' academic achievements continue to exist. These variations may be attributed to the anxiety students face in the educational environment, which is influenced by both internal expectations from parents and teachers and external aspirations for personal accomplishment.⁽⁴²⁾

College students experience high levels of stress, necessitating the development of adaptable and efficient coping mechanisms that can evolve over time. The sources of this stress encompass aspirations for achievement, financial constraints, apprehensions about the future, societal pressures, and various internal and external stressors. Consequently, insufficient coping strategies among college students can lead to anxiety, alcohol-related problems, depression, and a range of other mental health issues.⁽⁸⁾

Parental involvement has also been exacerbated because of the load of education that goes beyond kids. Today, children are obliged to face fierce competition at every level of their education system. Unable to cope with the studying involved in an academic field, a person gets what is known as academic stress. More surprisingly, while most people come to understanding that students do get stressed, a huge research void remains concerning what exactly causes that kind of stress, especially in the case of Chinese students.

Objectives

O1: To determine the influence of stressors on stress level of university students in China.

O2: To determine whether Chinese painting experience moderates the association among stressors and stress levels among university students in China.

Research Questions

RQ1: Does stressor influence the stress level of university students in China?

RQ2: Does Chinese painting experience moderate the association among stressors and stress levels among university students in China.

Problem Statement

Academic stress presents a universal challenge that surpasses national borders, cultural distinctions, and ethnic diversity, necessitating a contextual comprehension. It can be interpreted as the interaction of multiple elements: environmental stressors within the academic environment, a student's cognitive evaluation, and coping strategies in reaction to these stressors, and the ensuing psychological or physiological responses to stress.⁽²²⁾

Although academic stress is a widespread concern among adolescents worldwide, studies show that Chinese students often endure higher levels of academic stress compared to their peers in Western nations.⁽⁷⁾ This elevated academic stress among Chinese students has become a significant public health issue, particularly due to its correlation with mental health challenges among adolescents. The persistent prevalence of this problem highlights its profound influence on students' mental well-being.

Empirical investigations into academic stress have surfaced relatively recently, spanning approximately two

decades.⁽³⁹⁾ A review of existing literature underscores a scarcity of studies examining academic stress in China from a contextual viewpoint. Therefore, the study aim is to study academic stress and the determinants of student stress levels. Moreover, the study seeks to evaluate how the traditional Chinese painting experience moderates the association between these influential factors and stress among college students. Additionally, it aims to analyze how stress management strategies mediate the relationship between these influential factors in the Chinese context.

Research Gap

Many researchers studied stressors and its impact of student stress level. Aslan et al.⁽⁵⁾ studied the stress among students and concluded that relations are the main reason of stress level among students. Acharya⁽¹⁾ also studied that influence of relations and personal factors increases the stress level among university students. Gupta et al.⁽¹⁴⁾ mentioned in her studies that personal factors have significant influence on student stress level but the current research study focused all the variables and also studied additional variable of Chinese painting experience. Research study determined the influence of relations, personal factors and environmental factors on stress level among the Chinese students and also how stress management strategies mediate the relationship between these influential factors in the Chinese context.

Significance of study

The current study on stress among students is an important and pertinent field of study with broad ramifications for psychology, public health, and education. This research is extremely important since it has a significant influence on people, organizations, and society at large.

The current study is crucial for treating and comprehending students' physical and mental health, first and foremost. The goal of the project is to improve overall student well-being and promote healthier lives by investigating effective stress-reduction techniques. Furthermore, the state of research is crucial in mitigating and averting stress-related behaviors among students. It aims to reduce the negative effects of stress and promote resilience by identifying coping strategies and treatments. Thirdly, and perhaps most importantly, stress among students can have a negative influence on performance, necessitating the identification of stressors and the development of stress-reduction plans. The goal of this research is to get knowledge that would help students achieve better academic results.

Additionally, the study's findings serve as a basis for promoting a positive outlook on student life, which is beneficial for both academic achievement and personal growth. This research project improves students' overall experiences and outcomes by elucidating the variables that affect their stress levels.

Literature review

Stress and academic stress

Yikealo et al.⁽⁴¹⁾ state that stress appears as a bodily or mental response that comes from a person's cognitive evaluation of inputs and their interaction with the environment. The presence of a stressor is necessary for stress to exist. Furthermore, Liu⁽²⁴⁾ defines stresses as anything that impairs a person's ability to adjust or causes a physical or psychological reaction in them. Stress may come from a variety of biological, psychological, and social origins as well as the environment.

Many research have shown a strong association between stress and college students, including those by Yang et al.⁽⁴⁰⁾ Stress is recognized as a natural part of student life and has a substantial impact on coping strategies when faced with the rigors of the classroom. This is especially true because academic obligations sometimes entail difficult and demanding assignments.⁽³¹⁾ Academic stress is defined by Adom et al.⁽²⁾ as the strain and worry brought on by academic pursuits. The pursuit of a degree and education in general may be quite stressful. This includes stress associated with time management, extracurricular activity participation, and managing schoolwork.

Numerous stressors have been identified by experts after a thorough analysis of student academic stress. These could include having too many assignments to complete, competing with classmates, failing, not having enough money, having strained relationships with teachers or students, and having problems at home or with family. Stressors at the institutional level can include crammed lecture halls, the strain of fulfilling semester-long system requirements, and a lack of resources to help with academic work.⁽³⁾

According to Slimmen et al.⁽³⁶⁾ people who face these obstacles could become disoriented, disorganized, and less able to cope, which could eventually result in health problems linked to stress. An extremely stressful academic environment is fostered by time constraints combined with the need to perform well on exams or tests. According to Mishra⁽²⁶⁾ this stress can affect social relationships both inside and outside of the institution, which is significant for disputes arising from social aspects of a person's life. Studies suggest undergraduate students frequently have to deal with the possible negative impacts of stress on their academic performance, as Muliani et al.⁽²⁸⁾ also mentioned.

Factors that Influence the Students

Indeed, a multitude of circumstances can influence a student's academic achievement. Sources of stress are defined by Fairbrother and Warn⁽¹⁰⁾ as any circumstance or incident that jeopardizes people's ability to go about their regular lives and necessitates change. Similarly, Heckman⁽¹⁶⁾ highlights certain causes of stress in students, including financial hardships, household duties, work-related tasks while attending school, and a heavy course load. All of these factors work together to make it harder for students to continue performing academically.

All forms of coercive and oppressive behavior aimed at controlling and influencing a current or past intimate partner are considered forms of relationship abuse. Financial, emotional, sexual, or physical abuse are all possible manifestations of this behavior, which can also include intimidation, threats, and seclusion. Abuse frequently gets worse with time. Relationship troubles can also arise from a variety of situations, such as relationship transitions, disputes with roommates, working with strangers, encounters with strangers, and family matters.⁽³²⁾

Due to these problems, students often experience stress, which makes them spend a lot of time thinking through solutions. This might divert their attention from their academic obligations. Despite their initial simplicity, relationships can ultimately cause a great deal of stress, particularly in the lives of students.⁽¹²⁾

In student's life, personal factors can certainly contribute to significant levels of stress and show a critical role in various aspects. These factors can differ from person to person widely, leading to different observation, behaviors and attitudes. They can appear in several ways that impact the performance of student ultimately and raise the level of stress. Some examples of personal factors mentioned by different authors are changes in environment of living,⁽²⁹⁾ difficulties in finance,⁽²⁷⁾ health difficulties,⁽⁴⁾ and over workload.⁽⁷⁾ The cumulative effect of these factors significantly contributes to heightened levels of stress between students.

Academic stress of college students includes a number of factors within the academic environment, such as group projects, institutional commitments and coursework, as well as behaviors, attitudes and perceptions related to academic domain.⁽⁸⁾ The impact of expressive self-efficacy and intelligence coping on academic stress of college student and found that emotional intelligence and self-efficacy coping are the significant indicators of academic stress with emotional intelligence playing a significant moderating role in the association among academic stress and coping self-efficacy.⁽³⁷⁾

Study showed by Selvam et al.⁽³³⁾ mentioned that the conversion from the environment of college to university increase the perceived level of stress between students. This change significantly changes the learning environments structure of students and also impacts the daily activities of students (academic and non-academic). Such situations, considered by low controllability and high uncertainty, are often perceived as stressful life events.⁽³⁸⁾ But the college has also taken steps to reduce student stress, such pushing professors to offer optional final exams and letting students take some classes on a pass/fail basis in order to meet requirements.

Chinese Painting Experience

In modern times, urbanization is on the rise, leading to increased psychological pressure and reduced physical labor. Consequently, the prevalence of depression is escalating, significantly impacting student development and societal progress. In developed countries, it is projected that by 2030, depression will become a severe health issue.⁽²³⁾

Chinese painting experience stands at the heart of Chinese culture, revered not only in China but also globally. It embodies the essence of cultural ideals and aesthetic preferences.⁽⁶⁾ For novices and seasoned artists alike, engaging in Chinese painting fosters physical well-being and alleviates stress, promoting a resilient and optimistic mindset. Chinese painting experience serves as a valuable tool for mental adjustment, catering closely to the psychological needs of individuals in China.

According to Yan et al.⁽⁴⁰⁾ mentioned that Chinese painting experience, at its core, offers new insights and ideas for non-verbal accessory theory for depression, laying the groundwork for the development of treatment models for depression in China. Beerse et al.⁽⁶⁾ expert in art painting therapy, suggests that much of human cognition and emotional processes are photographic in nature. Painting art therapy provides individuals with a means to visually represent their inner world through painting, facilitating understanding and problem-solving. Emotions are often challenging to articulate in words, but painting art therapy provides a means to release and express these unconscious emotions, aiding in the therapeutic process. In painting art therapy, the act of creating art and psychotherapy synergistically address inner conflicts, emotions, and desires, offering simultaneous and harmonious therapeutic benefits.

Currently, painting art therapy includes various forms of painting in the mental health education of students. These forms range from simple paintings like houses, trees, self-portraits, or group paintings of houses and trees to more complex forms such as multi-dimensional addition paintings, specific theme paintings, random paintings, and mandalas. Additionally, there are more intricate techniques like dynamic analysis diagrams and nine-square grids. It's significant to note that the combinations of these forms and stages are not fixed, and their

application can vary widely. They are utilized in a range of psychological interventions, including psychological surveys, screenings, consultations, crisis interventions, and interventions for specific psychological issues.⁽¹⁷⁾

Research Framework

Indeed, the research framework serves as the backbone and primary focus of any research endeavor. It comprises a network of interconnected concepts that offer guidance and organization to the study. This framework aids researchers in conceptualizing the study, identifying essential variables, and establishing relationships among them. Through the utilization of a clear and well-defined research framework, researchers can efficiently structure their study, formulate hypotheses or research questions, and interpret the results meaningfully.⁽⁹⁾

Stressor, which includes interpersonal relationships, environmental circumstances, and personal factors, is the independent variable in the current research study. The stress level of students is the dependent variable. Furthermore, the moderator variable, Chinese painting experience, influences the correlation between students' stress levels and stressors.

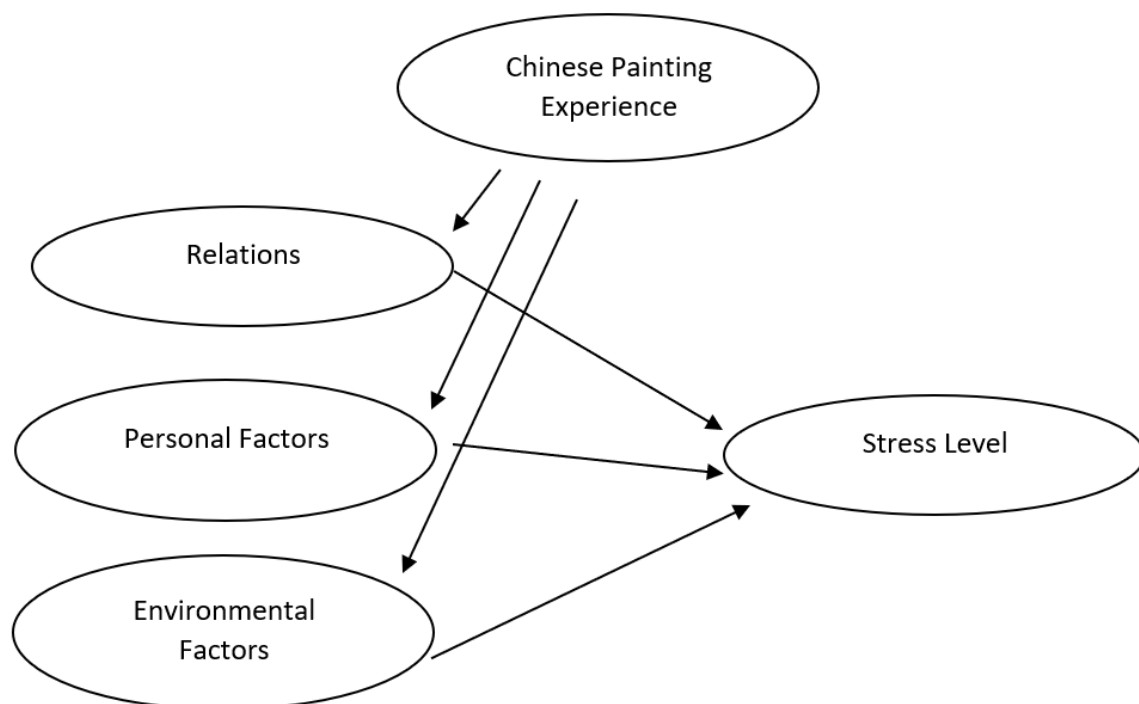


Figure 1. Research Model

METHOD

For the current research study, quantitative method was followed. Since quantitative methodology uses numerical data to quantify social phenomena, social scientists can accurately analyze study findings by selecting appropriate procedures.

In the early stage of data analysis, an official letter from management and Science University, Malaysia (MSU) will be obtained. This letter helps the researcher to get responses from the target sample. A detailed cover letter will be prepared which will show the background and aim of the research

Unit of Analysis

Students at Chinese institutions provided the researcher with data for this investigation. Students from “Qufu Normal University, Shandong University of Art & Design, University of Jinan, and Linyi University” in Shandong Province, China, are specifically included in the target audience. The current research study's unit of analysis is these university students.

Population and Sample

Students took part in the research study, and a self-administered survey was used to collect data. The research sample size was established using a purposive sampling technique.⁽¹⁹⁾ data were collected from 384 completed student questionnaires in accordance with Krejcie's criteria.

Research instrument

Participants, who were judged to be competent and unbiased, completed a self-administered questionnaire as part of the survey in order to provide data. The researcher examined the variables of stress levels among students, Chinese painting experience, and stressors (relationships, personal factors, and environmental factors) in the section that followed. Every new question added to the form asked respondents for their opinions. The targeted respondents' opinions were gathered for each variable using a five-point Likert scale. In order to evaluate the questionnaire's reliability for this research study, the researcher computed Cronbach's alpha. All of the items showed dependability within a reasonable range, with values over 0,60.⁽¹³⁾

Table 1. Variables and Authors and Summary of reliability Test

Sr. No	Variable	Items	Source	Cronbach Alpha (Pilot study N=64)	Cronbach Alpha (Field Study N=384)
01	Relations	7	Husky et al. ⁽¹⁸⁾	0,870	0,959
02	Personal Factors	6	Sharma et al. ⁽³⁴⁾	0,869	0,960
03	Environmental Factors	7	Kuang-Tsan et al. ⁽²⁰⁾	0,867	0,959
04	Chinese Painting Experience	6	Miao et al. ⁽²⁵⁾	0,868	0,959
05	Stress level among Students	6	Yikealo et al. ⁽⁴¹⁾	0,869	0,959

Structure Equation Modeling

PLS-SEM is the preferred method for assessing complex interactions between both latent and observable variables. Its advantages include the ability to estimate a specific or flexible measurement model, as well as the capability to handle challenging models with sparse data and generate conclusive scores for latent variables. According to SEM literature, assessment of measurement model is the vital step prior to testing the hypotheses.⁽¹¹⁾ This facilitates the analysis and prediction process and enables the testing of theorized relationships. PLS-SEM has also resolved disputes over which research study should be prioritized and what types of managerial effects should be implemented. The measuring model is evaluated by looking at the discriminant validity, internal consistency, and individual item reliability. In evaluating the structural model, on the other hand, the path loading's relevance is examined and the variance for every dependent construct is clarified.⁽³⁰⁾ In this study, the SEM approach was utilized as the data analyst and to assess and investigate the research hypothesis. Shmueli et al.⁽³⁵⁾ state that the statistical technique utilized to create and estimate models is SEM.

RESULTS AND DISCUSSION

Respondent Profile

For the analysis of this research study, 384 respondents were observed. The results show that 34,2 % of them held bachelor's degrees, 28,1 % held graduate degrees, 24,5 % held master's degrees, and 13,2 % held doctorates. These respondents were from various universities in China, including Qufu Normal University, Shandong University of Art and Design, University of Jinan, and Linyi University. Specifically, 24,0 % of responses came from Qufu Normal University, 28,4 % from Shandong University of Art and Design, 32,4 % from the University of Jinan, and 15,2 % from Linyi University. Regarding age distribution, 215 respondents, or 55,98 %, were between the ages of 18 and 23. Additionally, 108 participants (28,12 % of all respondents) were between the ages of 24 and 28, 38 (9,89 %) were aged 29-33, and 23 (5,98 %)

Descriptive Analysis

Descriptive analysis offers an overview of the characteristics of the data, whether they represent a population or samples. This analysis can be separated into two main types: determining variability and determining central tendency. These categories are essential for understanding the typical or central response within the data. Determining variability involves assessing the spread or dispersion of the data points around a central value. It helps to understand how much the data values deviate from the average or central tendency.

Determining central tendency aims to identify the most representative or representative value within the dataset. Commonly, central tendency measures include the median, mode and mean. These measures provide insight into where the majority of the data points cluster around. Overall, descriptive analysis helps to characterize the data by providing information about both its central tendency and variability, enabling researchers to better understand the underlying patterns and trends within the dataset.

Table 2 shows the descriptive statistics of research study. Findings indicates that the mean values for all the variables fall between 3,64 to 3,85, showing consistency within an acceptable range. Similarly, Standard deviation range scores from 5,36 to 6,82, also falling within acceptable range. These results affirm that all variables display reasonable and satisfactory level.

Variable	N	Minimum	Mean	Std. Deviation
R	384	1,00	3,7392	0,57864
PF	384	1,00	3,7587	0,68267
EF	384	1,00	3,6437	0,56974
SLS	384	1,00	3,6742	0,69432
CPE	384	1,00	3,8512	0,53671

Indicator Reliability

Indicator reliability is classically estimated by measuring the factor loading or outer loading for each domain in a measurement model. An outer loading of 0,70 or higher indicates that the item provides adequate indications of the underlying construct. If an indicator's loading falls below 0,40, it is considered weak and may need to be reconsidered. However, if the loading falls between 0,40 and 0,70, it can still be acceptable if it contributes to an increase in the AVE to 0,50 or higher, as suggested by Hair. ⁽¹⁵⁾

Given these criteria, no further conclusion is necessary as the factor loading values for each indicator are within an appropriate range (0,40 or higher), which is fall between the range of 0,731 to 0,874 and the AVE values for each variable meet the baseline requirement of 0,50 or above, which is in the range of 0,465 to 0,581. This indicates satisfactory indicator reliability for the measurement model.

Convergent Validity

It indicates the degree of correlation between an examination and a replaced fraction of a relevant dimension.⁽¹⁵⁾ Table shows the average values used in the latest research. Every number matched the 0.50 AVE, demonstrating the accuracy of the estimating methodology used in this investigation. Furthermore, every characteristic satisfied the AVE's requirement for a boost value of 0,50, indicating sufficient convergent validity for the measurement schemes used in this investigation.

Variable	CR	Alpha Value	AVE
R	0,773	0,728	0,555
PF	0,874	0,609	0,465
EF	0,836	0,723	0,547
SLS	0,731	0,731	0,581
CPE	0,742	0,781	0,517

Path coefficient

The measurement coefficients of the structural model are also used to appraise or analyze it in momentum research. Weight values for coefficients are used to assess the importance and efficacy of an interaction between two new qualities. "Bootstrapping," a Smart PLS technique, produces values for evaluating links (paths) between dependent and independent variables.

The current investigation shows a t-esteem of 0,95 at a significant threshold of 0,05, per Hair et al. ⁽¹⁵⁾. In "PLS-SEM," as explained by Hair ⁽¹⁵⁾, the significance of the found path coefficient is estimated using a test called nonparametric measurable, also called bootstrapping. Furthermore, it is acknowledged that the coefficient ranges normally lie between "-1 and +1". Accordingly, this study demonstrates that correlation coefficient values near +1 imply a greater association, but values near -1 indicate a weaker or insufficient relationship. The Table shows the exact p-esteem, t-worth, and path coefficients between the study's component parts. Path valuations determine whether a hypothesis is accepted or rejected.

Relationship	Path coefficients	T Statistics	P values	Decision
R->SLS	0,157	4,568	0,000*	Accepted
PF ->SLS	0,558	2,864	0,000*	Accepted
EF->SLS	0,021	6,028	0,001*	Accepted
R x CPE->SLS	0,100	2,413	0,053*	Accepted
PF x CPE->SLS	0,020	0,444	0,038*	Accepted
EF x CPE->SLS	0,050	1,319	0,045*	Accepted

Consequently, and in accordance with the findings of the present investigation, every hypothesis is supported at a significance level of 0,05. This shows that the hypothesized correlations between the variables are supported by data analysis and statistically significant.

Limitation of study

The study has several limitations. First, it primarily focused on a specific geographical area. Shandong Province, China, which may limit the generalizability of the findings to other regions or cultures. Additionally, the research did not explore gender differences in relation to stressors, which could provide valuable insights into how stress impacts male and female students differently. Understanding these differences could inform the development of tailored interventions and support systems that address the unique needs of each gender. Future studies should expand the geographical scope and include gender as a variable to enhance our understanding of student stress and inform targeted interventions aimed at promoting student well-being.

CONCLUSION

The goal of the current study is to determine how stressors affect university students' stress levels, with a focus on the moderating effect of experience painting in Chinese. In China, a notable high percentage of university students report experiencing stress. Relationships, personal characteristics, and contextual elements have been recognized as the main coping mechanisms. These elements—which include relationships, living conditions, money issues, health issues, workloads, language obstacles, bad habits, fear, uncertainty about the future, school environment, and academic achievement, have a substantial impact on students' stress levels.

Long-term exposure to these stress-inducing events may increase the risk of developing stress-related illnesses such as depression, anxiety, mental health problems, and intra- and interpersonal conflicts. The outcomes of this study underscore the status of implementing stress management programs tailored to the requirements of campus students. Orientation activities for incoming students should integrate training related to stress management and provide targeted coping strategies. Moreover, scholars should be informed about the resources available to support them in effectively managing stressors.

Implementing stress reduction programs can foster adaptive coping behaviors that are beneficial in daily life and serve as preventive measures to mitigate the long-term impacts of chronic stress. By addressing stressors and enhancing coping mechanisms, universities can encourage the inclusive well-being and student academic success.

To gain an understanding comprehensively of the variables effects and raised stress level among students, upcoming studies should delve into the influence of support of social systems and students adapt coping strategies and respond to stressors. Whereas, the current research focused on Shandong Province, China, future research should include universities across the whole of China to offer a more comprehensive viewpoint.

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