

Positive Childhood Experiences and Depression Among College Students During the COVID-19 Pandemic: A Moderated Mediation Model

Chenyu Wang¹, Rui Zhou², Xing Zhang³

¹School of Music, Jiangxi Normal University, Nanchang, People's Republic of China; ²College of Marxism, Sichuan University, Chengdu, People's Republic of China; ³School of Psychology, Jiangxi Normal University, Nanchang, People's Republic of China

Correspondence: Xing Zhang, School of Psychology, Jiangxi Normal University, 99, Ziyang Avenue, Nanchang, Jiangxi Province, 330022, People's Republic of China, Email zhangxing@jxnu.edu.cn; Rui Zhou, College of Marxism, Sichuan University, Chuanda Road, Shuangliu County, Chengdu, 610207, People's Republic of China, Email ruizhou_283@163.com

Purpose: In light of the ongoing COVID-19 pandemic, mental health concerns have become more prevalent worldwide. However, there is a lack of research specifically addressing the mental well-being of college art students. Therefore, the purpose of this study is to examine the prevalence of depressive symptoms among college music students and explore the factors that predict and alleviate these symptoms amidst the challenges posed by the COVID-19 pandemic.

Materials and Methods: An online survey was conducted among college music students (n = 407) from two universities at May 2022 in China. Self-report scales were used to measure levels of depression (Zung Self-Rating Depression Scale), positive childhood experiences (Benevolent Childhood Experiences Scale), social support (Multi-Dimensional Scale of Perceived Social Support), and regulatory emotional self-efficacy (Regulatory Emotional Self-Efficacy Scale). Hayes PROCESS macro for SPSS was used to test the hypothesized effects of regulatory emotional self-efficacy and social support in the relationship between positive childhood experiences and depression.

Results: Results showed that, the prevalence of depression symptoms of the current study sample was 64.13%, positive childhood experiences had a significant and negative predictive effect on the depression of college music students, and the relation was partially mediated by regulatory emotional self-efficacy. Furthermore, social support moderated the relationship between positive childhood experiences and regulatory emotional self-efficacy, the relation was significant only for students with higher levels of social support, social support may enhance and amplify the positive impacts of positive childhood experiences on regulatory emotional self-efficacy.

Conclusion: The findings reveal a significant prevalence of depression among college music students during the COVID-19 epidemic, underscoring the seriousness of the issue. Moreover, this study contributes to a deeper comprehension of how positive childhood experiences alleviate depression among college music students. These insights hold potential for informing mental health education initiatives tailored to college art students in the post-pandemic era, offering valuable guidance for promoting their well-being and resilience.

Keywords: COVID-19, college music students, positive childhood experiences, regulatory emotional self-efficacy, social support, depression

Introduction

Since December 2019, an epidemic of the coronavirus disease 2019 (COVID-19) has been spreading worldwide,¹ which has resulted in negative impacts on people's mental health.²⁻⁴ Governments around the world have implemented various effective prevention and control measures to contain the spread of the epidemic. However, the global nature of the outbreak and the stringent preventive measures have presented significant challenges to the mental well-being of people globally.⁴⁻⁶ In 2022, most universities in China have implemented restrictions on students going off campus to socialize with others, which has the potential to exacerbate mental health symptoms among college students.^{7,8} However, the mental health of college music students has been largely ignored during the COVID-19 epidemic, which may possibly

hinder the progress of mental health services for college students in the post-pandemic era. In fact, due to the heavier performance demands and additional fieldwork requirements, many scholars have found that music students have a heavier burden than other non-art major students,^{9,10} some researchers have even pointed out that college music students may be especially susceptible to mental health symptoms.^{11–13} Indeed, many scholars have found high rates of depression, anxiety, and stress among college music students.^{14–16} During the COVID-19 pandemic, the implementation of epidemic prevention and control measures such as social isolation may have exacerbated mental health problems among college music students. Although online education may encounter various challenges and obstacles,^{4,17} switching to online teaching may be a good alternative for the general students, but not for performing arts students who need to interact with teachers to work on their technical and aesthetical abilities or working together on specific performances, which could only be achieved in classroom teaching.¹⁸ Indeed, a recent study has showed that the prevalence of mental health problems in performing arts students significantly increased during the COVID-19 lockdown.¹⁸ In addition, numerous studies have found that compared to other symptoms such as anxiety and stress, the incidence and prevalence of depression were significantly higher among college students during the COVID-19 pandemic.^{19,20} A recent study even revealed that college students were more susceptible to experiencing depression during the COVID-19 epidemic compared to students in other stages.²¹ Depression has been found to seriously affect the physical and mental health of college students.^{22–24} It is crucial to recognize and address the symptoms of depression when providing mental health education for college students. However, there is a lack of research focusing on the depression levels of college music students during the COVID-19 pandemic, as well as the factors that can help reduce their risk of depression and the underlying mechanisms involved. Therefore, this study aims to investigate the level of depression among college music students, identify protective factors against depression, and explore the potential mechanisms at play during the COVID-19 pandemic. The findings of this study will have significant implications for policymaking, specifically, in improving the mental health of college art students. Additionally, the results can contribute to the development of targeted mental health education programs for college art students in the post-pandemic era.

Positive Childhood Experiences and Depression

High-quality childhood experiences have the potential to mitigate levels of depression among college music students. The resilience framework and positive youth development framework suggest that children's individual strengths and supportive living environments, such as neighborhoods, can serve as protective factors against risks and aid in their ability to adapt to adversity.^{25,26} Positive childhood experiences can serve as a reflection of one's living environment during childhood, to some extent. In general, positive childhood experiences (PCEs) encompass favorable experiences, such as a sense of safety, encountered before the age of 18. Extensive empirical research consistently demonstrates that PCEs are significantly associated with a reduced risk of experiencing depressive symptoms.^{27,28} However, there is as yet no study focusing on PCEs that can play a role in reducing the risk of depression among college music students. Therefore, we propose a first hypothesis, the PCEs may predict less depression among college music students during the COVID-19 epidemic. Taking a positive psychology perspective, the present study delves into the protective influence of PCEs on the depression of college art students. The findings of this study hold potential implications for enhancing mental health education specifically tailored towards college art students.

Mediating Role of Regulatory Emotional Self-Efficacy

While there is a wealth of research exploring the detrimental effects of negative childhood experiences on mental health in adulthood,^{29,30} there is a relative scarcity of studies investigating the effects of PCEs. However, numerous recent studies have pointed out, the contribution of positive experiences of childhood to adulthood should be explored from a positive psychology perspective to gain a more comprehensive insight regarding psychological health.³¹ Recent study has also found that, PCEs could predict some positive abilities (ie, self-esteem, resilience),³¹ and better adult functioning.³² More importantly, self-efficacy is heavily influenced by past experiences.³³ Indeed, the adverse childhood experiences were found to reduce generalized self-efficacy, and could effectively explain the variation of self-efficacy.^{34,35} However, unlike adverse childhood experiences, PCEs are favourable experiences. Therefore, evidence from these empirical studies suggests that PCEs may promote the improvement of self-efficacy, eg, regulatory emotional self-efficacy (RESE). In general, RESE could

be defined as a person's perceived confidence in her or his ability to regulate their emotions.³⁶ Furthermore, many studies had indicated that, lower RESE could prospectively predict depressive symptoms.^{37,38} In the midst of the COVID-19 epidemic, the implementation of effective and rigorous preventive measures has disrupted the regular routines and lifestyles of individuals. Consequently, the influence of regulatory emotional self-efficacy in mitigating negative emotions, such as depression, may be especially significant in this context. Therefore, we propose a second hypothesis, the RESE may play a mediating effect in the relation between PCEs and depression among college music students during the COVID-19 epidemic. Our study could offer a potential mechanism to elucidate the relationship between positive childhood experiences and the alleviation of depression symptoms.

The Role of Social Support

The PCEs may be connected to depression via RESE among college music students during the COVID-19 epidemic, and this relationship may be moderated by social support. In general, social support was regarded as a critical protective factor against the negative effects of distress on mental and physical health.³⁹ A growing body of empirical study also has found that the social support could strengthen the positive impacts of some positive abilities. For example, the previous study found that social support strengthened the relationship between social entrepreneurial self-efficacy and social entrepreneurial intention,⁴⁰ and could strengthen the positive impacts of some positive abilities on mental health outcomes.^{41,42} Extensive research has underscored the significant impact of social support within the context of the COVID-19 pandemic.^{39,43} Higher social support may enhance the positive effects of PCEs on the RESE. Therefore, we propose a third hypothesis, social support may moderate the mediating effect of RESE in the relation between PCEs and depression among college music students during the COVID-19 epidemic. Our study may contribute to understanding the mediating role of RESE in the relationship between PCEs and depression, providing insights on how to effectively utilize this pathway.

The Present Study

The aims of the present study are to examine: (a) the prevalence of depression symptoms in college music students during the COVID-19 pandemic. (b) whether the PCEs will predict less depression among college music students. (c) whether RESE will mediate the relationship between PCEs and depression among college music students; and (d) whether social support will moderate the association between PCEs and RESE among college music students (Figure 1). Based on above studies, we propose the following hypotheses: (H1) PCEs will predict less depression among college music students; (H2) RESE will mediate the relationship between PCEs and depression among college music students; (H3) Social support will moderate the association between PCEs and RESE among college music students. Our study could potentially offer novel approaches for alleviating depression levels among college art students during unique circumstances or challenging periods.

Methods

Participants

At May 2022, most Chinese universities were in stages of epidemic control, students were not allowed to enter and exit the campus freely, and due to the fluctuations of epidemic situation, online and offline teaching were alternating on campus.

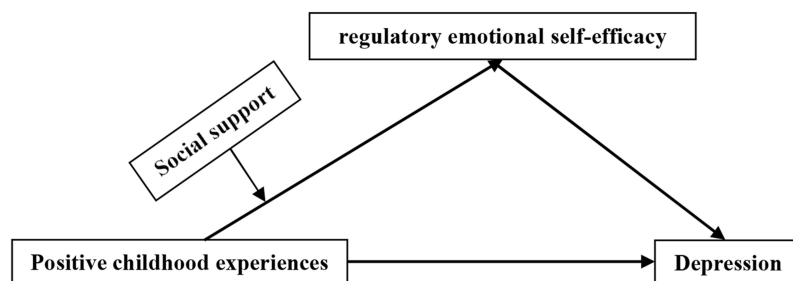


Figure 1 The proposed moderated mediation model.

To effectively collect data from a population of college music students with a limited size, we implemented a cross-sectional online survey in May 2022. Convenience sampling was utilized to ensure convenience and accessibility for participants in mainland China. All questionnaires used in the study were anonymous, and the informed consent was given by all participants on the first page of the questionnaire. This study was approved by the Research Ethics Committees of the School of Psychology, Jiangxi Normal University. A total of 407 college music students, who met the eligibility criteria of being undergraduate or postgraduate students majoring in music, willing to provide informed consent, and residing in mainland China, were recruited from two universities in Jiangxi and Chongqing. All data met the inclusion criteria, 71.3% were females ($n = 290$), and 28.7% were male ($n = 117$). The mean age of these participants was 20.49 years ($SD_{\text{age}} = 2.39$, range = 17–33).

Measures

Positive Childhood Experiences

The PCEs were measured using the Benevolent Childhood Experiences Scale,⁴⁴ which was used to measure favorable childhood experiences from birth to age 18 years. The Chinese version has been translated and validated.⁴⁵ The scale consists of ten yes-or-no items, a sample scale item is, “Do you have at least one close friend?”, total score ranges from 0 to 10, with higher score indicating more PCEs. In the current study, the Cronbach’s alpha was 0.765.

Social Support

The social support was measured by using the Multi-Dimensional Scale of Perceived Social Support (MSPSS).⁴⁶ The scale consists of three dimensions (ie, support from family, friends and significant others) measured on 7-point Likert type scale, a sample scale item is, “My friends can truly help me”. The total score is the sum of the scores for each item, with higher the total score, the more social support is perceived by people. The questionnaire has shown good psychometric properties among Chinese people.^{47,48} In the current study, the Cronbach’s alpha was 0.931.

Regulatory Emotional Self-Efficacy

The Chinese version of the Regulatory Emotional Self-Efficacy Scale was used,⁴⁹ which consists three dimensions (ie, perceived self-efficacy in expressing positive affect, managing anger/irritation, and managing despondency/distress) measured on 5-point Likert type scale, with higher scores indicating stronger RESE, a sample scale item is, “How do you express your happiness when something good happens to you?”. The questionnaire has good reliability and validity.^{50,51} In the current study, the Cronbach’s alpha was 0.893.

Depression

The Chinese version of Zung Self-Rating Depression Scale was used to assess depressive symptoms,⁵² the scale consists of 20 items, a sample scale item is, “I have poor sleep at night”, sum of the 20 items produced a score ranging from 20 to 80, with greater values indicating increased depressive symptoms. The questionnaire shown good psychometric properties among Chinese people.^{53,54} In the current study, the Cronbach’s alpha was 0.820. According to the criteria for depression symptoms in the previous study,^{55,56} in the present study, participants with SDS score ≥ 40 were defined as having depressive symptoms.

Statistical Analysis

Data were analyzed using SPSS 21. First, the total score of core variables will be calculated, and calculate the proportion of people with depression symptoms. Second, the descriptive statistics and Pearson correlations among the study variables were conducted. Then, controlled by the demographic variables (ie, age and gender) in the analysis, the PROCESS Macro for SPSS (Model 4) was used to test the mediating role of RESE, and Model 7 was used to test the moderating role of social support in the relation between PCEs and RESE based on the bias-corrected percentile bootstrap method (5000 samples).^{57,58}

Results

The Prevalence of Depressive Symptoms

No data was missing in the current study because a forced response was implemented during data collection, ensuring participants' ability to progress to the next item. We calculated the prevalence of depressive symptoms among college music students. The results revealed that 64.13% of college music students experienced symptoms of depression during the COVID-19 pandemic. This suggests that a majority of the students in the sample exhibited signs of depression.

Descriptive Statistics and Correlations

Table 1 provides the descriptive statistics and correlation matrix for each variable examined in the study. The results showed that, PCEs were positively associated with RESE ($r = 0.23, p < 0.01$), social support ($r = 0.35, p < 0.01$), and negatively associated with depression ($r = -0.29, p < 0.01$). The results also indicated that, RESE was positively associated with social support ($r = 0.32, p < 0.01$), and negatively associated with depression ($r = -0.42, p < 0.01$), social support was negatively associated with depression ($r = -0.52, p < 0.01$). The results indicate significant correlations among the independent variable, dependent variables, and mediated variable in our proposed model. This fulfills the required conditions for conducting a mediation effect test,⁵⁸ which means that the mediation effect will be examined only if there is a significant relationship between the independent and dependent variables. Subsequently, the mediation effect test will be carried out.

Mediation Effect Test

To test whether RESE played as a mediator in the relation between PCEs and depression, we adopted the SPSS PROCESS Macro Model 4 (Hayes, 2013).⁵⁷ The results were shown in Table 2. After the effect of participants' gender and age were controlled, PCEs significantly predicted depression (Model 1: $\beta = -0.303, p < 0.001$) and RESE (Model 2:

Table 1 Descriptive Statistics and Intercorrelations Between Variables

Variables	1	2	3	4	5	6
1. Gender	1					
2. age	0.14**	1				
3. PCEs	-0.01	-0.07	1			
4. RESE	0.03	0.08	0.23**	1		
5. Social support	-0.17**	0.06	0.35**	0.32**	1	
6. Depression	0.03	-0.11*	-0.29**	-0.42**	-0.52**	1
M	28.7	20.49	8.48	41.78	55.88	42.24
SD	0.45	2.39	2.01	7.07	11.87	7.94

Notes: N = 407. Variables 1 and 2 are control variables; gender is a dummy variable, with male = 1 and female = 0, and the mean represents the proportion of males. * $p < 0.05$. ** $p < 0.01$. *** $p < 0.001$.

Abbreviations: PCEs, positive childhood experiences; RESE, regulatory emotional self-efficacy.

Table 2 Testing for Mediation Effect

Predictors	Model 1 (Depression)		Model 2 (ERSE)		Model 3 (Depression)	
	β	t	β	t	β	t
Gender	0.088	0.840	0.035	0.331	0.101	1.035
Age	-0.136**	-2.798	0.088	1.825	-0.103*	-2.272
PCEs	-0.303**	-6.341	0.233***	4.892	-0.216***	-4.730
RESE					-0.372***	-8.008
R ²	0.103		0.062		0.226	
F	15.395***		8.834***		29.388***	

Notes: * $p < 0.05$. ** $p < 0.01$. *** $p < 0.001$.

Abbreviations: PCEs, positive childhood experiences; RESE, regulatory emotional self-efficacy.

Table 3 Testing for the Moderated Mediation Effect

Predictors	Model 1 (ERSE)			Model 2 (Depression)		
	β	SE	t	β	SE	t
Gender	0.146	0.102	1.435	0.101	0.097	1.035
Age	0.054	0.047	1.154	-0.103*	0.045	-2.272
PCEs	0.203***	0.055	3.706	-0.216***	0.046	-4.730
Social support	0.265***	0.053	5.048			
PCEs × Social support	0.137**	0.051	2.676			
RESE				-0.372***	0.047	-8.008
R ²	0.142			0.226		
F	13.251***			29.388***		

Notes: * $p < 0.05$. ** $p < 0.01$. *** $p < 0.001$.

Abbreviations: PCEs, positive childhood experiences; RESE, regulatory emotional self-efficacy × represents the interaction item of PCEs and social support.

$\beta = 0.233$, $p < 0.001$). Thus, H 1 was supported. Moreover, RESE significantly predicted depression (Model 3: $\beta = -0.372$, $p < 0.001$), and the direct association between PCEs and depression remained significant (Model 3: $\beta = -0.216$, $p < 0.001$). Furthermore, the bias-corrected percentile bootstrap analyses showed that RESE had a significant partially mediating effect between PCEs and depression (indirect effect = -0.086 , Boot $SE = 0.020$, 95% CI = $[-0.127, -0.048]$), and the proportion of the mediating effect to the total effect was 28.38%. Thus, the H2 was supported.

Moderated Mediation Effect Test

In Hypothesis 3, this study expected that the indirect relationship between PCEs and depression through RESE might be moderated by social support, to test the moderated mediation effect, the SPSS PROCESS Macro Model 7 was adopted.⁵⁷ According to previous study,^{59,60} we tested four conditions: (a) effect of PCEs and depression; (b) the interaction between PCEs and social support in predicting RESE; (c) the effect of RESE on depression; and (d) different conditional indirect effects of PCEs on social support, via RESE. As shown in Table 3, PCEs had a negative predictive effect on depression ($\beta = -0.216$, $p < 0.001$); the product (interaction term) of PCEs, and social support had a significant predictive effect on RESE ($\beta = 0.137$, $p < 0.01$); and RESE had a negative predictive effect on depression ($\beta = -0.372$, $p < 0.001$). These results supported conditions (a), (b), and (c), respectively.

Finally, the result of the moderator effect is shown in Figure 2, which is visualized by the Johnson-Neyman technique.⁶⁰ As the figure shows, the effect of PCEs on RESE was moderated by social support, and the critical value of the moderating

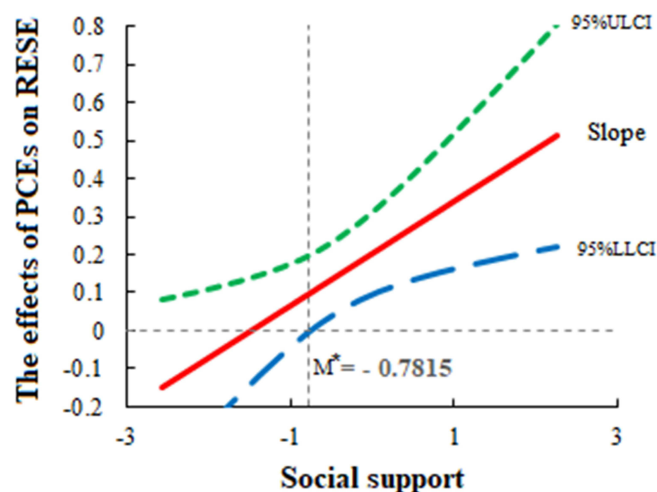


Figure 2 Johnson-Neyman diagram of the moderator effect of social support on the association between PCEs and RESE.

Note: M* = Critical value of moderator variable (ie, social support).

Abbreviations: PCEs, positive childhood experiences; RESE, regulatory emotional self-efficacy.

variable was -0.7815 (which converted to the original value is approximately 45), which means that when the social support was higher than 45, the effect of PCEs on RESE was significant, because the confidence interval did not contain zero. When the value of social support was lower than the critical value; however, the confidence interval contained zero, indicating that the effect of PCEs on RESE was not significant. Moreover, the slope of the line for the effect of PCEs on RESE increased as social support increased, indicating that the effect of PCEs on RESE was much greater in people with relatively higher social support than it was in people with lower social support. Thus, H 3 was also supported.

Discussion

This study aimed to investigate the prevalence of depression symptoms among college music students in mainland China during the COVID-19 pandemic. Additionally, it examined the impact of PCEs on depression, as well as the mediating role of RESE and the moderating role of social support in the relationship between PCEs and depression. Our findings indicate that, the prevalence of depression symptoms in college music students during the COVID-19 pandemic was 64.13%. In addition, the PCEs of college music students had a significant predictive effect on their depression, and RESE partially mediated the negative relationship between PCEs and depression. Furthermore, the relation between PCEs and RESE was moderated by social support. The study highlights the potential severity of depressive symptoms among college music students during the COVID-19 pandemic, and the findings may have some implications for how to play the positive role of PCEs in reducing the depression among college music students.

The Prevalence of Depressive Symptoms

Our findings reveal a staggering prevalence of depressive symptoms among college music students in the current sample during the COVID-19 pandemic, reaching 64.13%. This startling ratio suggests that over half of the students in the sample experience symptoms of depression, highlighting the urgent need for attention and support in this population. A meta-analysis study on the prevalence of depressive among Chinese students during the COVID-19 pandemic showed that the prevalence of depression among university students is 27.0%.²¹ The prevalence rate of our study was more than double that of previous study. Due to the importance of face-to-face communication and teaching to art professional development,¹⁷ if these needs cannot be met under special stress (ie, COVID-19 pandemic), it may have a serious negative impact on the mental health of art students (ie, music students). This finding suggests the importance of addressing the mental well-being of art students in future interventions and support programs.

The Effect of Positive Childhood Experiences on Depression

Our results show that the PCEs of college music students have a negative predictive effect on their depression, which is consistent with findings from previous studies.^{27,28} The results support the resilience framework and the positive youth development framework,²⁶ which highlights the role of living environments in protecting youth from risks. This finding indicates the importance of collective efforts to foster a nurturing and supportive environment during childhood and adolescence, with the aim of mitigating the risk of depression among children and adolescents.

The Mediation Effects

Our results contribute a new finding that RESE partially mediated the positive relationship between PCEs and depression in college music students, which suggests that, PCEs can indirectly affect the level of depression of college music students through RESE. This result is consistent with findings from previous studies.^{31,32} Furthermore, our study extends previous findings that negative childhood experiences can impair self-efficacy,^{34,35} and suggests that, in contrast to negative childhood experiences, PCEs could contribute to better RESE, and in turn lead to lower levels of depression among college music students. This provides a new perspective to explain why and how PCEs could exert an effect on college students' depression. Indeed, a large number of studies have showed that, PCEs provide adolescents with strong social support networks, thereby equipping them to experience post-traumatic growth and handle adversity.^{61,62} Therefore, PCEs may provide an environment that could contribute to the formation and development of higher levels of RESE, which in turn lead to lower levels of depression of college music students. Our findings also make significant contributions by signifying PCEs as a key predictor of RESE in university music students. This provides further evidence

of PCEs and RESE as effective protective factors that can reduce the risk of depression under difficult life circumstances, which may imply that, individuals with higher levels of PCEs are more capable of handling stressors related to the pandemic, which in turn perceive confidence in her or his ability to regulate their emotions in the context of COVID-19, they are more likely to experience less depression.

The Moderated Mediation Effects

In addition, our results show that social support moderates the relationship between PCEs and RESE, only with higher levels of social support, the PCEs of college music students have a significant predictive effect on RESE. These findings suggest that higher level of social support may contribute to activate the positive effect of PCEs on RESE. This finding is consistent with previous study,^{40–42} which suggest that social support could strengthen the positive impacts of positive traits or abilities. In sum, our study findings are both aligned with those of previous investigations and indicate that social support can strengthen the positive impacts of PCEs on RESE in the context of COVID-19. It is possible that ample social support can rekindle or activate PCEs among college students, subsequently enhancing their ability to effectively cope with and respond to emotions amidst the challenges posed by the pandemic. The findings imply that interventions targeting the development and enhancement of social support networks could maximize the potential benefits derived from PCEs, thereby potentially playing a crucial role in addressing depression among college students.

Theoretical and Practical Implications

The current study holds significant theoretical implications in its findings. Firstly, the results demonstrate a negative predictive effect of PCEs on depression among college music students, which aligns with both the resilience framework and the positive youth development framework. These frameworks emphasize the protective role of nurturing environments in safeguarding youth from various risks. The findings underscore the importance of cultivating supportive and harmonious childhood experiences for promoting mental well-being in individuals. Additionally, this study tentatively contributes to our understanding of the mechanisms through which PCEs mitigate the likelihood of depression in adulthood, thus enriching and advancing existing theoretical frameworks.

Additionally, our study has important practical implications. Firstly, the results indicate that college music students may be particularly vulnerable to experiencing significant levels of depression symptoms during the COVID-19 pandemic. This highlights the need for increased attention to the mental health challenges faced by art students, and the implementation of effective measures to enhance their well-being. Furthermore, our findings provide valuable guidance for the development of targeted therapeutic interventions aimed at addressing depression among college music students.

Limitations and Future Research

Although the current study has found some interesting things, it has some limitations as well. First, the sample consisted exclusively of university music students, which may restrict the generalizability of our findings. In order to gain a more comprehensive understanding of the mechanisms underlying the relationship between PCEs and depression, future research should aim to include a more diverse range of participants. Second, the design of present study was cross-sectional, which cannot explain the causal relationship between the variables. More longitudinal studies should be done in the future to explore the causal relationship. Third, in addition to the variables examined in this study, such as the mediating effect of RESE and the moderating effect of social support, future research should also consider including other interpersonal and intrapersonal factors, such as self-esteem and interpersonal quality, to gain a more comprehensive understanding of the relationship between PCEs and depression.

Conclusions

In conclusion, this study sheds light on the frequency and factors influencing depressive symptoms among Chinese college music students during the COVID-19 pandemic. The findings indicate that these students may be experiencing serious levels of depression during this time. Additionally, PCEs have a direct impact on the depression levels of college music students and also influence it through the mediating effect of RESE. Importantly, the results highlight the

moderating role of social support in the relationship between PCEs and RESE among college music students. Specifically, the relationship between PCEs and RESE is significant only for students with higher levels of social support. Based on these findings, it is recommended that university administrators, counselors, and educators implement comprehensive support programs for college art students. These programs should aim to cultivate PCEs, enhance RESE, and promote social support networks. By addressing these factors, it is possible to improve the mental well-being of college music students, particularly in the post-pandemic period.

Data Sharing Statement

Data of this study could be available for scientific purposes only. For details, please contact the corresponding author.

Ethics Statement

This study adhered to the Declaration of Helsinki guidelines for conducting medical research involving human subjects. It received ethical approval from the Ethics Committee of Jiangxi Normal University. Participants were provided with complete information about the study and were assured that their data would only be used for scholarly purposes. They provided informed consent to participate in the study.

Disclosure

The authors declared that there is no conflict of interest.

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