

Insecure Parental Attachment and Anxiety in Vocational College Students: The Mediating Role of Subjective Well-Being and the Moderating Role of Self-Esteem

Shuwei Hao¹, Xueting Zhang², Honghong Xu¹

¹Department of Medical Psychology, School of Health Humanities, Peking University, Beijing, 100191, People's Republic of China; ²Department of Psychology, Ningxia University, Yinchuan, 750000, People's Republic of China

Correspondence: Honghong Xu, Department of Medical Psychology, School of Health Humanities, Peking University, 38, Xueyuan Road, Haidian District, Beijing, 100191, People's Republic of China, Email sofia_xuhong@163.com

Purpose: Although insecure parental attachment (IPA) has been shown to play an important role in anxiety, little is known about the mediating and moderating mechanisms underlying this relationship.

Patients and Methods: In the present study, we examined the mediating role of subjective well-being (SWB) in the association between IPA and anxiety and the moderating role of self-esteem. 947 Chinese vocational college students completed the measures of IPA, anxiety, SWB, and self-esteem.

Results: The results indicated that IPA was significantly and positively associated with anxiety, and SWB partially mediated this relationship. Moreover, the results indicated that self-esteem moderated the relationship between IPA and anxiety. The higher the level of self-esteem, the weaker the effect of insecure attachment on the anxiety of vocational college students.

Conclusion: This study highlights the significance of identifying the mechanisms of mediating and moderating paths between IPA and anxiety in vocational college students.

Keywords: insecure parental attachment, anxiety, subjective well-being, self-esteem, vocational college students

Introduction

Insecure Parental Attachment and Anxiety

The relationship between parental attachment and anxiety in vocational college students is an important topic that has received much attention in the field of psychology.^{1,2} In modern society, vocational education is crucial for individual development and employment prospects.³ However, vocational college students often face great stress and anxiety.^{4,5} Parental attachment, a key family factor, affects psychological health and adaptability.^{6,7}

Numerous meta-analyses have identified a strong connection between parental attachment and anxiety.^{8,9} Empirical research also supported a link among vocational college students. For instance, a study by Maltais et al¹⁰ found that when adolescents perceive a good classroom atmosphere, the higher the attachment security, the less anxiety symptoms are displayed. Similarly, Brown and Whiteside¹¹ also found that ambivalent attachment styles, like anxious or avoidant, led to more worry. Most importantly, a long-term study showed that IPA positively predicted anxiety over time.¹²

Subjective Well-Being as a Mediator

Subjective well-being (SWB) reflects individuals' happiness and life satisfaction,¹³ encompassing subjective, stable, and holistic dimensions.¹⁴ Attachment theory proposes that the quality of early caregiver interactions shapes individuals' internal working models, which in turn inform their later interpersonal relationships and emotional responses.¹⁵ On the

one hand, individuals with insecure attachments often exhibit excessive dependence and anxiety, fearing rejection and loss of connection.^{16,17} This excessive anxiety and neediness may cause them to become insecure and overly dependent in intimate relationships, which can reduce the individual's subjective well-being.¹⁸ Moreover, their anxiety levels may increase due to persistent worry.¹⁹ On the other hand, individuals with insecure attachments usually tend to remain independent and avoid emotional connections.²⁰ They may inhibit emotional expression, avoid dependence on others, and be wary of making deep emotional connections.²¹ Their subjective well-being may be negatively impacted by the lack of true emotional connection.¹⁸ At the same time, they may feel anxious and unsettled when faced with demands or pressures for intimacy.²² Consistent with this theoretical framework, an increasing number of studies have demonstrated that SWB mediates the relationship between youth's environmental experiences (eg, parent care) and problem behavior.²³ Notably, one study found that self-concept (linked to SWB) mediates the relationship between IPA and mental health problems.²⁴ Although it has not been shown, it is reasonable to expect that SWB acts as a mediator between IPA and anxiety. The results of earlier studies will be evaluated to bolster this claim in the part that follows.

First, high IPA is more likely to develop a low level of SWB. According to the attachment theory,¹⁵ if an individual has an unstable, cold, or repressed relationship with their parents during childhood, they may develop a pattern of insecure attachment. These insecure attachment patterns may cause individuals to develop mental health problems in adulthood and reduce their SWB.²⁵ Moreover, some studies also indicate that IPA can significantly and negatively predict SWB in Chinese middle school students,²⁶ Chinese left-behind adolescents,²⁷ high school students,²⁸ and Chinese college students.²⁹ Most importantly, one longitudinal study shows that initial parental attachment significantly predicts adolescents' SWB after one year.³⁰

Second, some studies support the idea that individuals with low SWB are more likely to feel anxious.^{13,31} Furthermore, positive well-being and negative well-being can predict mental health (ie, depression and anxiety) in two longitudinal population-based cohorts.³² The results from a three-wave longitudinal study conducted in China revealed that the base level of SWB could significantly predict anxiety.⁵ It is noteworthy that insecurely attached students' anxiety level is higher than securely attached students'.³³

Self-Esteem as a Moderator

Although IPA may increase the risk of anxiety, it's important to note that not all individuals with high IPA homogeneously experience higher levels of anxiety. This suggests that there are other factors that can moderate the relationship between IPA and anxiety. Among these potential moderating variables, self-esteem stands out as a crucial element. The present study aims to test the hypothesis that self-esteem moderates the links between IPA and anxiety, offering a more nuanced understanding of this relationship.

Self-esteem is defined as a person's subjective evaluation and appraisal of his values,³⁴ which can be influenced by parents and significant others.³⁵ The results from a meta-analysis showed that individuals with low self-esteem report more anxiety.³⁶ According to the self-esteem protection model,³⁷ self-esteem also helps to shape an individual's positive self-identity and sense of self-worth. This positive self-identity reduces the negative evaluations and self-doubt that insecure parent-child attachment places on the individual, thus reducing anxiety. When individuals have a stable, positive self-image, they are more likely to develop healthier emotion regulation mechanisms to better deal with anxiety. Thus, self-esteem may strengthen the positive impact of IPA on anxiety. Previous empirical studies have supported this hypothesis. For instance, self-esteem can moderate the relationship between stressors and strain (ie, depression, anxiety, and tension stress), such that the positive link between stressors and anxiety is weaker at higher levels of self-esteem.³⁸ Moreover, self-esteem could also moderate the relationship between perceived stress and negative feelings as well as be associated with low self-worth.³⁹ To our knowledge, no previous research has examined whether self-esteem is a protective factor that buffers the adverse impact of IPA on anxiety.

The Present Study

Taken together, the purposes of the current research were twofold. First, the current research tested whether SWB would mediate the relationship between IPA and anxiety. Second, we tested whether the direct relationship between IPA and anxiety was moderated by self-esteem (Figure 1).

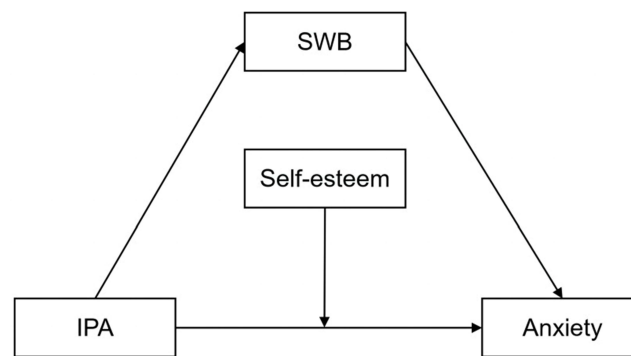


Figure 1 The proposed mediation and moderation model.

Abbreviations: IPA, insecure parental attachment; SWB, subjective well-being.

Methods

Participants and Procedures

A convenient sampling method was used to recruit 1055 vocational college students from five higher vocational colleges in Beijing, China, for the cross-sectional survey in 2017–2018. Printed informed consent forms and questionnaires were uniformly distributed by research assistants. After reading the informed consent form and fully understanding the purpose and risks of participating in the study, students voluntarily completed the questionnaire anonymously. They could withdraw from the study at any time during the completion process. For minor participants, informed consent was also obtained from their parents or guardians. The investigation was carried out in accordance with the Helsinki Declaration as revised 1989 and approved by the ethics committee of the researcher's institution.

947 vocational college students completed the questionnaire and the remaining 108 were excluded due to missing values in relevant items in the questionnaire. The effective response rate was 89.8%. Participants' ages ranged between 15–24 years old ($M = 18.78$, $SD = 1.01$). Among them, 366 (38.6%) were male and 581 (61.4%) were female. 717 students in grade one (75.7%) and 230 students in grade two (24.3%). Only child 552 (58.3%), non-only child 395 (41.7%). Additionally, there were 317 (33.5%) from urban areas, 381 (40.2%) from rural areas, and 249 (26.3%) from towns or suburbs.

Measures

Parental Attachment

Experiences in Close Relationships-Relationship Structures Scale (ECR-RSS) is designed to assess attachment patterns in various intimate relationships.^{40,41} 18 items are used to assess the attachment relationship between the participants and their parents. Nine items assess paternal attachment and nine items assess maternal attachment. A 7-point Likert scale format ranging from 1 to 7 was used for scoring. And a higher total score on the scale indicates a more insecure parental attachment. In the present study, the Cronbach's alpha coefficients of the scale were 0.85.

Subjective Well-Being

Subjective Happiness Scale (SHS) is a 4-item measure evaluating global subjective well-being with 7-point Likert scale format scoring.⁴² A higher score indicates a higher level of subjective well-being. In this study, the Cronbach's alpha coefficient was 0.76.

Self-Esteem

Self-Esteem Scale (SES) is currently the most widely used measurement to evaluate self-esteem.⁴³ The scale contains 10 items measuring global self-worth, and answers used 4-point Likert scale format ranging from strongly agree to strongly disagree. In the current study, the Cronbach's alpha coefficient of the scale was 0.86.

Anxiety

Anxiety was measured by the Beck Anxiety Inventory (BAI), developed by Beck, Epstein, Brown, and Steer.⁴⁴ This inventory includes two dimensions: subjective (9 items) and somatic (12 items). All items are scored from 0 (Not at all)

to 3 (Severely—I could barely stand it) on a 4-point scale, and each describes a common symptom of anxiety. In this study, the Cronbach’s alpha coefficient of the scale was 0.92.

Statistical Analysis

SPSS 26.0 was used for statistical analysis in this study. Descriptive statistics and Pearson correlations were calculated among the study variables. The PROCESS macro (Model 5) was applied to examine the mediating role of SWB and the moderating role of self-esteem on the direct link between parental attachment and anxiety. The bootstrap confidence intervals (CIs) determine whether the effects in Model 5 are significant based on 5000 random samples.⁴⁵ In addition, the model controls for age,⁴⁶ gender,⁴⁷ grade⁴⁸ and only child or not⁴⁹ as covariates and all study variables were standardized in Model 5 before data analyses.

Results

Descriptive Statistics and Correlation Analysis

The means, SDs and Pearson correlations for the study variables were reported in Table 1. The skewness and kurtosis values showed that all variables were normally distributed.⁵⁰ As expected, IPA was positively correlated with anxiety ($r = 0.30, p < 0.001$) and negatively correlated with SWB ($r = -0.45, p < 0.001$). SWB was negatively correlated with anxiety ($r = -0.37, p < 0.001$). Self-esteem was negatively correlated with IPA ($r = -0.38, p < 0.001$) and anxiety ($r = -0.36, p < 0.001$), and positively correlated with SWB ($r = 0.48, p < 0.001$). The data results preliminarily support the research hypothesis.

Mediation and Moderation Effects Analysis

As shown in Table 2, after controlling for age, gender, grade and only child or not, IPA negatively predicted SWB ($\beta = -0.44, p < 0.001$), SWB negatively predicted anxiety ($\beta = -0.21, p < 0.001$), and IPA positively predicted anxiety ($\beta = 0.13, p < 0.001$). Hence, Hypothesis 1 was supported. SWB partially mediated the relationship between IPA and anxiety (indirect effect = 0.09, SE = 0.02, 95% CI = [0.05, 0.13]). The mediation effect accounts for 40.91% of the total effect of IPA on anxiety.

Moreover, the product (interaction term) of IPA and self-esteem had a significant predictive effect on anxiety ($\beta = -0.14, p < 0.001$). In addition, we plotted predicted anxiety against IPA separately for low, medium and high levels of self-esteem (Figure 2). Simple slope tests showed that for vocational college students with low self-esteem, IPA significantly predicted anxiety, $B_{\text{simple}} = 0.27, p < 0.001$. What’s more, for those with medium self-esteem, IPA significantly predicted anxiety, $B_{\text{simple}} = 0.13, p < 0.001$. However, the moderating effect of self-esteem was not significant in the relationship between IPA and anxiety, $B_{\text{simple}} = 0.005, p = 0.912$. In sum, these results indicated that self-esteem moderated the direct association between IPA and anxiety. Thus, Hypothesis 2 was also supported. Figure 3 presents the direct, the mediation and the moderation links between the variables.

Table 1 Descriptive Statistics and Correlations Among Variables of Interest

	M	SD	Skewness	Kurtosis	1	2	3	4	5	6	7	8
1. IPA	3.05	1.00	0.02	-0.64	I							
2. SWB	5.24	1.18	-0.44	-0.22	-0.45***	I						
3. Self-esteem	3.13	0.48	-0.17	-0.13	-0.38***	0.48***	I					
4. Anxiety	1.30	0.37	2.22	6.66	0.30***	-0.37***	-0.36***	I				
5. Age	18.78	1.01			-0.09**	0.10**	0.07*	-0.08*	I			
6. gender	0.39	0.49			0.08*	-0.04	0.02	-0.02	0.06	I		
7. grade	0.76	0.43			0.04	0.01	0.06	-0.07*	-0.37***	0.14***	I	
8. Only child or not	1.42	0.49			0.04	-0.04	-0.02	0.04	0.02	-0.14***	0.03	I

Notes: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.
Abbreviations: IPA, insecure parental attachment; SWB, subjective well-being; M, mean; SD, standard deviation.

Table 2 Testing the Mediation and Moderation Effects

Predictor	SWB			Anxiety		
	β	SE	t	β	SE	t
constant	-1.48	0.61	-2.42*	1.05	0.61	1.71
Age	0.08	0.03	2.49*	-0.05	0.03	-1.71
Gender	-0.04	0.06	-0.59	-0.06	0.06	-0.98
Grade	0.13	0.07	1.70	-0.18	0.07	-2.47*
Only child or not	-0.05	0.06	-0.81	0.05	0.06	0.86
IPA	-0.44	0.03	-15.04***	0.13	0.03	3.96***
Self-esteem				-0.19	0.03	-5.64***
IPA \times Self-esteem				-0.14	0.03	-4.94***
SWB				-0.21	0.03	-5.87***
R ²		0.21			0.22	
F		49.14***			32.71***	

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

Abbreviations: IPA, insecure parental attachment; SWB, subjective well-being; SE, standard error.

Discussion

Although the effect of IPA on vocational college students' anxiety has accumulated considerable empirical support,⁵¹ the underlying mediation and moderation mechanisms are unclear. Thus, we formulated a mediation and moderation model to test how IPA works and whether all individuals are equally influenced by IPA. Our findings indicated that IPA was significantly and positively associated with anxiety among Chinese vocational college students, and SWB partially mediated this relationship. Moreover, self-esteem moderated the relationship between IPA and anxiety.

The Mediating Role of Subjective Well-Being

The present study is the first to demonstrate the mediating role of SWB in the association between IPA and anxiety in vocational college students. That is, IPA can restrain the activation of SWB mechanisms, which in turn intensifies anxiety. Hence, SWB is not only an outcome of secure parental attachment but also an inhibitor of anxiety. Furthermore, it is worth noting that SWB only partially mediated the relationship between IPA and anxiety. The remaining direct and positive relationship between IPA and anxiety may suggest that IPA may function as a direct factor that can significantly increase vocational college students' anxiety.

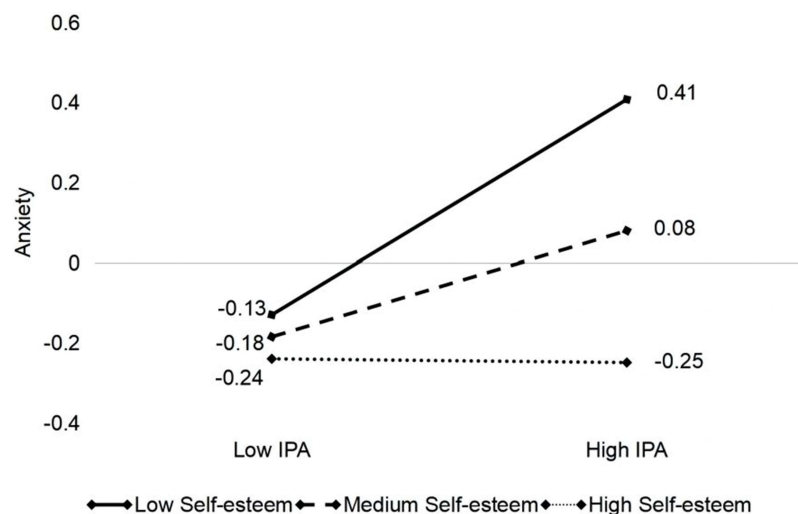


Figure 2 Interaction between IPA and self-esteem on anxiety.

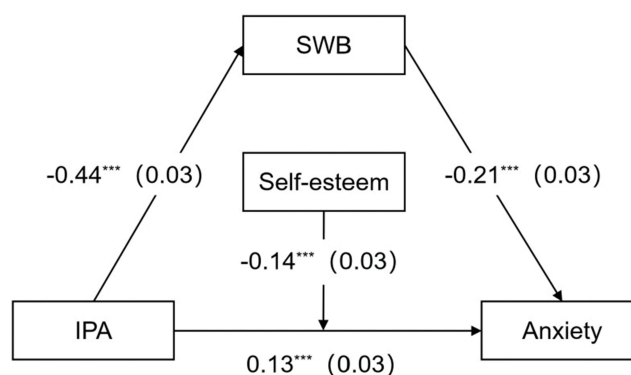


Figure 3 The Mediation and moderation model.

Notes: *** $p < 0.001$.

Abbreviations: IPA, insecure parental attachment; SWB, subjective well-being.

In addition to the overall mediation result, each of the separate links in our mediation model is noteworthy. For the first stage of the mediation process (ie, IPA \rightarrow SWB), the present study found that IPA significantly restrained the activation of SWB mechanisms. These are some potential causes: In the first place, individuals with IPA have been found to lack emotional support.⁵² Insecure attachments may experience poor parent-child relationships such as parental apathy, neglect, or rejection, resulting in a lack of experience getting emotional support and comfort as they grow up.⁵³ In this case, they may have difficulty forming healthy emotional connections and intimate relationships, which affects the formation of SWB. In the next place, individuals with IPA are likely to have doubts or negative attitudes about their own worth and abilities.⁵⁴ As a result of negative experiences in early parent-child relationships, they may internalize negative self-perceptions and negatively affect their own sense of worth and self-esteem, which causes them to experience more anxiety, frustration, and dissatisfaction in their daily lives, thereby reducing subjective well-being.⁵⁵ Last but not least, individuals with IPA are more likely to have interpersonal disturbances.⁵⁶ For instance, vocational college students with IPA often have difficulties in relationships.⁵⁷ They may have higher levels of social anxiety and interpersonal distrust and be suspicious of the intentions and actions of others.⁵⁸ This can lead to difficulty in forming stable, supportive relationships and a lack of social support networks, which reduces subjective well-being.

For the second stage of our mediation model (ie, SWB \rightarrow anxiety), the present study found that SWB was associated with less anxiety. According to Fredrickson's broaden-and-build theory of positive emotions,^{59,60} positive emotions can expand an individual's scope of thought and action and prompt more adaptive behavior.⁶¹ This in turn would indirectly reduce vocational college students' anxiety by decreasing an individual's focus on the source of anxiety, enhancing social support, and building resilience to stress. Moreover, there are two reasons why SWB is closely related to vocational college students' anxiety. One reason is that individuals with low SWB may tend to focus more on the problems and negative aspects and ignore the positive aspects.⁶² Thus, they may fall into negative thought patterns and worry excessively about the future, creating negative expectations and doubts that increase the occurrence of anxiety. Another reason is that lower SWB may be associated with a reduced sense of self-worth.²⁸ Consequently, vocational students' lack of confidence in their own worth and abilities can increase the appearance of anxiety, as they may fear that they will not be able to meet the expectations of others or face the challenges of life.

The Moderating Role of Self-Esteem

Our results also showed that self-esteem moderated the relationship between IPA and anxiety. This pattern is consistent with Robinson and Tayler's self-esteem protection model,³⁷ basing themselves on the theory of social identity, they suggest the positive role of self-esteem in helping individuals regulate and mitigate the negative effects of adverse parent-child experiences. That is, self-esteem is a protective factor that buffers the adverse impact of IPA on anxiety. Two possible explanations exist for these findings. Firstly, individuals with high self-esteem are more likely to adopt positive cognitive biases.⁶³ They may be more likely to see the positive side of things and seek ways to solve problems instead of

falling into negative thought patterns. Thus, self-esteem, as a buffer against IPA, may protect vocational college students from the potential negative effects of anxiety. Secondly, to some extent, individuals with higher self-esteem typically have greater psychological resilience and are better able to adapt to and cope with the challenges posed by adverse parenting experiences.^{64,65} They are more able to recover from difficult situations and maintain lower levels of anxiety. To our knowledge, the present study is the first to confirm that self-esteem as a moderator decreases the adverse effect of IPA on anxiety. Therefore, our results fill this gap in understanding the importance of self-esteem in attenuating the negative effects of IPA.

Limitations and Future Directions

Several limitations need to be considered when interpreting the findings. Firstly, our cross-sectional data limit causal inference. Future research should use longitudinal designs to test our mediation and moderation model. Secondly, all variables were assessed via self-reported measures, which might affect the validity of the present study. Thirdly, the generalizability of our findings should be further verified with samples from other cultures and countries.

Despite these limitations, the current study has several theoretical and practical contributions. From a theoretical perspective, this study further extends previous research by confirming the mediating role of SWB and the moderating role of self-esteem. This will contribute to a better understanding of how and when IPA influences anxiety. From a practical perspective, our study may provide information about how to reduce vocational college students' anxiety in this competitive era. For example, we should make students more aware of SWB mechanisms, teach them to develop a positive attitude towards life, and promote physical and mental health. Furthermore, vocational college students may also reduce their anxiety by increasing their self-esteem.

Conclusions

In summary, although further replication and extension are needed, this study is an important step in unpacking how IPA relates to the anxiety of Chinese vocational college students. It demonstrates that one possible mechanism by which IPA is connected to greater anxiety is SWB. It is therefore crucial to take action to encourage the development of safe parental connections to enhance the SWB of vocational college students and alleviate their anxiety. In addition, self-esteem can moderate the relationship between IPA and anxiety, and high self-esteem can reduce or even eliminate the direct effect of IPA on anxiety of vocational college students, so a set of intervention programs to improve self-esteem can be provided to reduce anxiety of students with insecure parent-child attachment.

Data Sharing Statement

The data are available from the corresponding author on reasonable request.

Ethical Approval

All procedures performed in the study were approved by the Biomedical Ethics Committee of Peking University and in accordance with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards.

Informed Consent Statements

Informed consent is obtained from all participants in this study.

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Author Contributions

All authors made a significant contribution to the work reported, whether that is in the conception, study design, execution, acquisition of data, analysis and interpretation, or in all these areas; took part in drafting, revising or critically reviewing the article; gave final approval of the version to be published; have agreed on the journal to which the article has been submitted; and agree to be accountable for all aspects of the work.

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Disclosure

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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